

# Backplane Connector Systems

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\*HDM, HDM<sup>PLUS</sup> and VHDM are trademarks of Teradyne, Inc.



For more information, please see the last page of the catalog for the location nearest you or contact:

## FEATURES AND SPECIFICATIONS

## Features and Benefits

- 0.5mm contact spacing for maximum connector density
- Ultra high speed electrical performance
- Impedance controlled flexible circuitry for superior data integrity
- Surface mountable—conforms to existing manufacturing standards
- Multiple densities in a single connector meet specific application requirements

## Reference Information

Product Specification: 680-005660

Packaging Type: Tray

Designed In: Millimeters

## Electrical

Voltage: 100V AC

Current:

Signals—0.25A

Ground—1.0A

Contact Resistance: 10mΩ max.

Dielectric Withstanding Voltage: 300V AC

Insulation Resistance: 500 MΩ min.

## Mechanical

Contact Wipe at Load: 1.0mm

Density:

352 contact positions

280 signal/72 ground

Mating Force: 50 lb

Normal Force: 75g

Durability: 200 cycles

## Physical

Housing: Aluminum

Contact Spring: Stainless Steel

Cradle Spring: Beryllium Copper

Brace: Black glass-filled LCP, 94V-0

Flex Circuit: Polyimide film

Plating:

Edgecard Contact Interface—30μ" Gold min. over Nickel

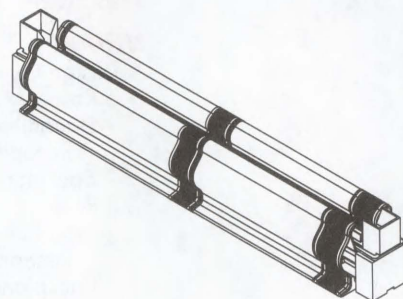
Motherboard Attach Interface—Tin/Lead Alloy



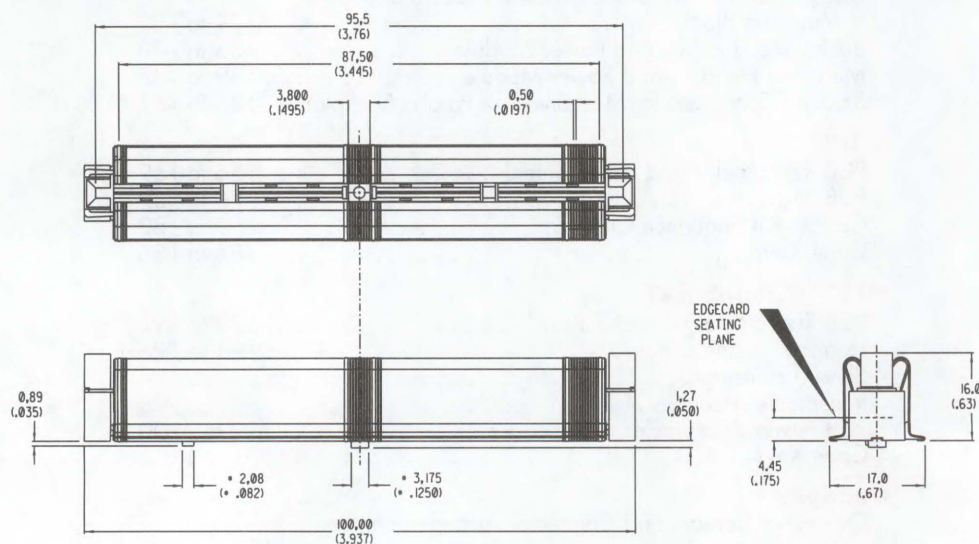
# 0.50mm (.019") Pitch NexStep™ Board-to-Board Edgecard Connector

**74210**

## 352-Circuit, Vertical Double-Sided, Dual Read-Out



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuit | Order No.  |
|---------|------------|
| 352     | 74210-0001 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 2.00mm (.079") by 6 row connectors provide 30 contacts per centimeter
- 2.00mm (.079") by 8 row connectors provide 40 contacts per centimeter
- Wafer construction permits very accurate location of ground planes relative to the signal contacts for improved impedance control
- Press-fit right angle receptacles allow tight spacing without solder bridging between contact tails
- Ground planes between signal columns provide:
  - Tightly controlled impedance for rise times down to 200 picoseconds
  - Very low cross talk between signals within a column
  - Extremely low cross talk between signal columns
- Mix and match signal, power, and guidance to optimize the connector for the application
- Multiple sourced connector (available from Molex and from Teradyne\*) ensures interchangeability and interchangeability
- Power module with 10.0A blades can carry up to 120A per 25mm (.984") for high current requirements
- Eye of the needle press-fit tails on both the backplane header and the daughtercard receptacles allow repairability and a highly reliable termination to the PCB
- 50Ω impedance
- Low insertion force (0.40N nominal per contact) allows very high pin counts with reasonable mating forces (~ 58N per 25.00mm (.984") or 13 lb per inch of connector length for the 8 row)
- Dual beam contacts for redundancy
- Contacts preloaded in the housing to prevent stubbing and reduce insertion force
- Tin/Lead compliant zones very suitable for use with bare copper or Gold plated printed circuit boards (PCBs)
- Meets Bellcore GR-1217-CORE Requirements
- Strong integrated metal guide pins provide a wide capture range ( $\pm 1.67\text{mm}$  (.065")) and protect the connector from damage during mating
- Metallic stiffener provides a board straightening action to avoid damage of the mating connectors and more accurate true position of the mating halves
- Robust metal coding features assure that the board cannot be plugged into the wrong slot

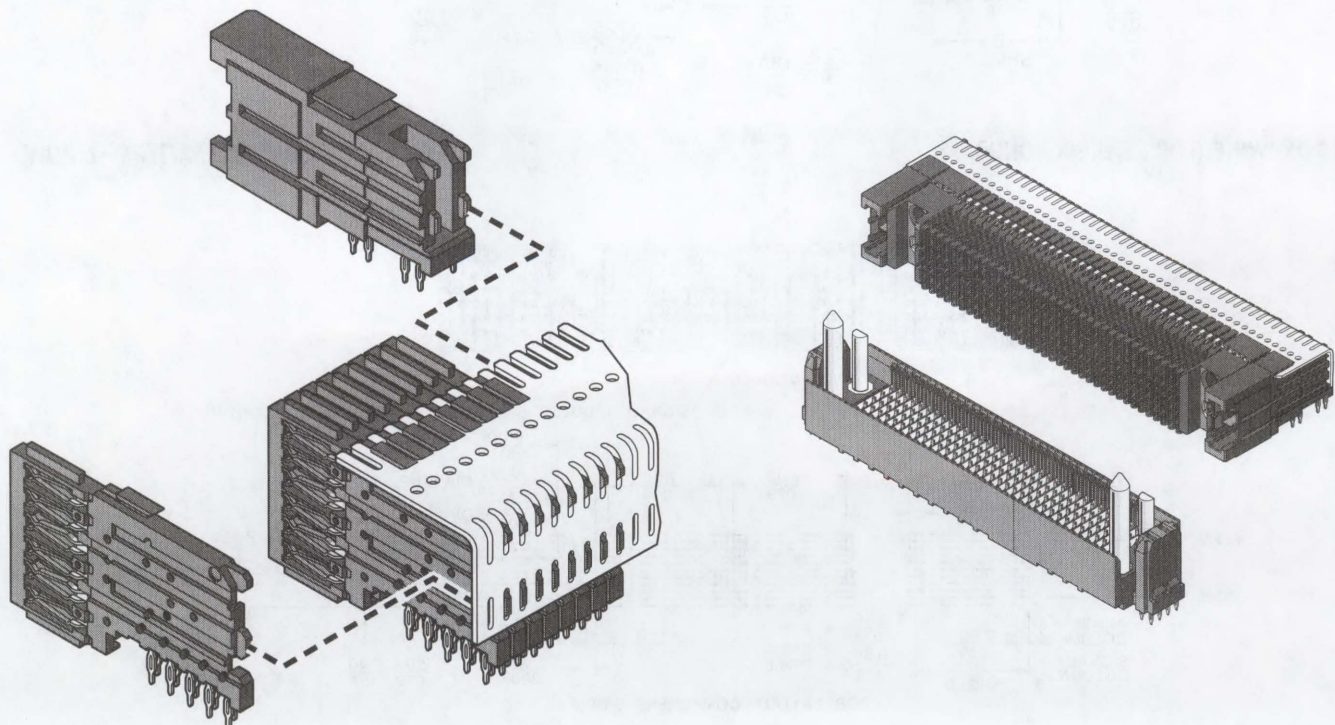


## 2.00 by 2.25mm (.079 by .089") Pitch VHDM\* Module-to-Backplane Connector

The Very High Density Metric (VHDM\*) connector system is designed for applications that require very high interconnect density and high speed signal integrity. The modularity of the signal portion of the connector is in increments of 10 columns and 25 columns in either 6 rows or 8 rows. The daughtercard connector consists of a metal stiffener that combines signal wafers, power modules, and guidance modules to make one continuous connector that can be ordered with one custom part number. The maximum length of a single stiffener is 300.00mm (~12.00"). The power contacts can handle 10.0A of current per blade, efficiently delivering up to 120 amps per 25.00mm (.984") of board edge with multiple mating levels for hot plug applications.

Metal guide pins and metallic coding bushings provide excellent guidance for large cards and eliminates the possibility of plugging a card into the wrong slot.

The modularity and design flexibility allows engineers to adapt quickly to changing design requirements for future system upgrades without changing systems.



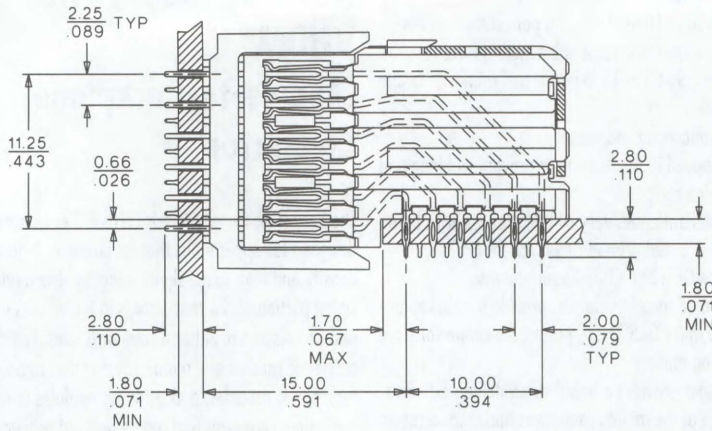
\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



MATING RELATIONSHIP - 6 ROW



**2.00 by 2.25mm  
(.079 by .089") Pitch  
VHDM\***

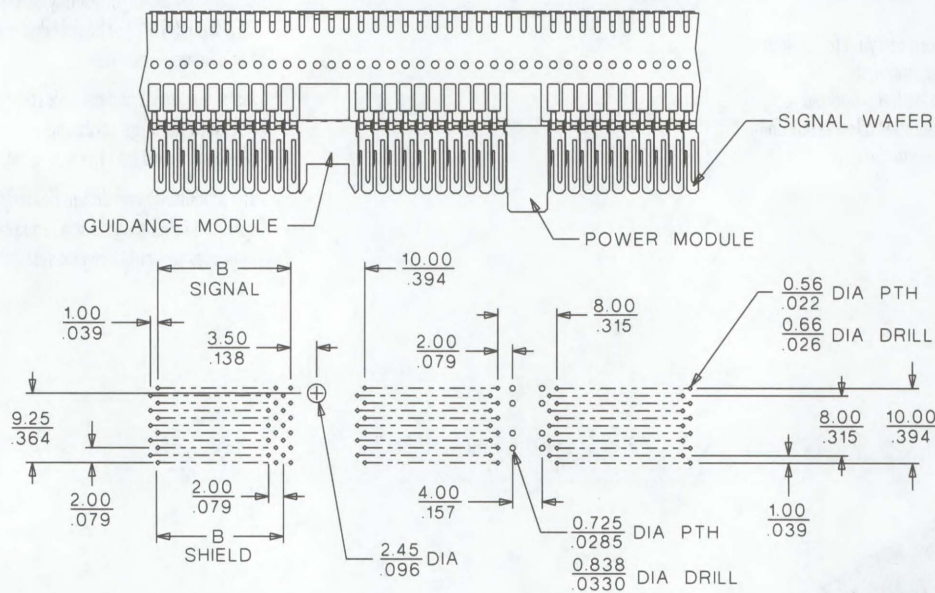


**Cross Section Detail 6 Row**

Press-fit is recommended for both backplane and daughtercard connectors to prevent the solder defects that make soldering of high density connectors difficult. Note that backplane and mating face is a 2.00 by 2.25mm (.079 by .089") grid, but the daughtercard grid is 2.00 by 2.00mm (.079 by .079"), shortening electrical length and saving PCB space. The power hole pattern is better shown on the following pages.

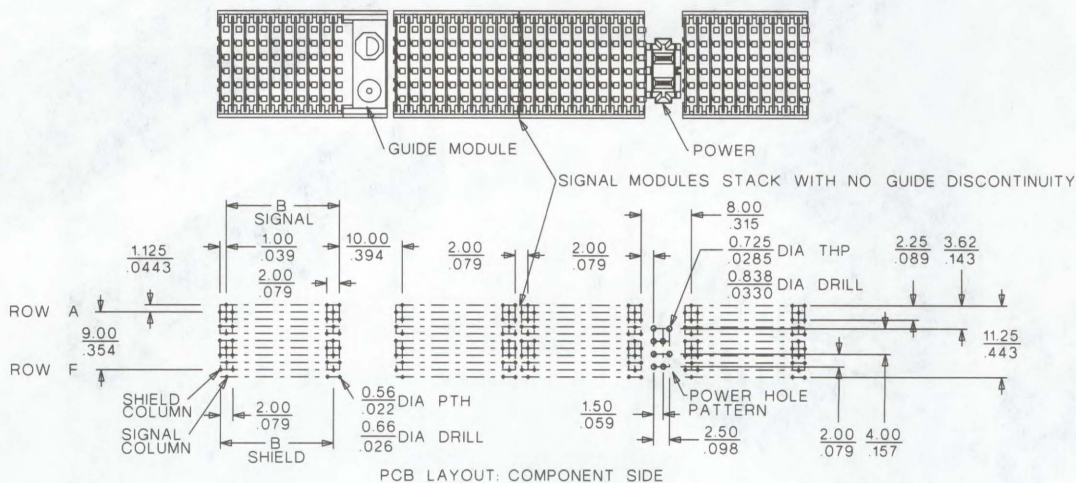
CATALOG DRAWING (FOR REFERENCE ONLY)

TYPICAL DAUGHTERCARD HOLE PATTERN - 6 ROW



CATALOG DRAWING (FOR REFERENCE ONLY)

TYPICAL BACKPLANE HOLE PATTERN - 6 ROW

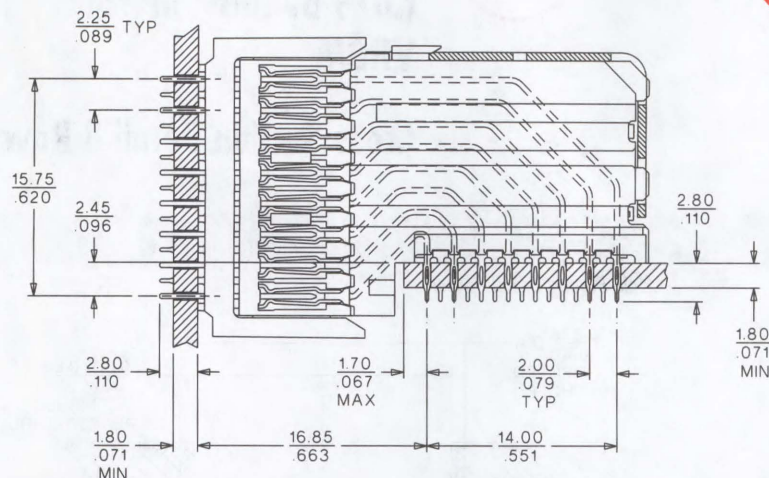


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# MATING RELATIONSHIP - 8 ROW

**molex®** 2.00 by 2.25mm  
(.079 by .089") Pitch  
VHDM\*

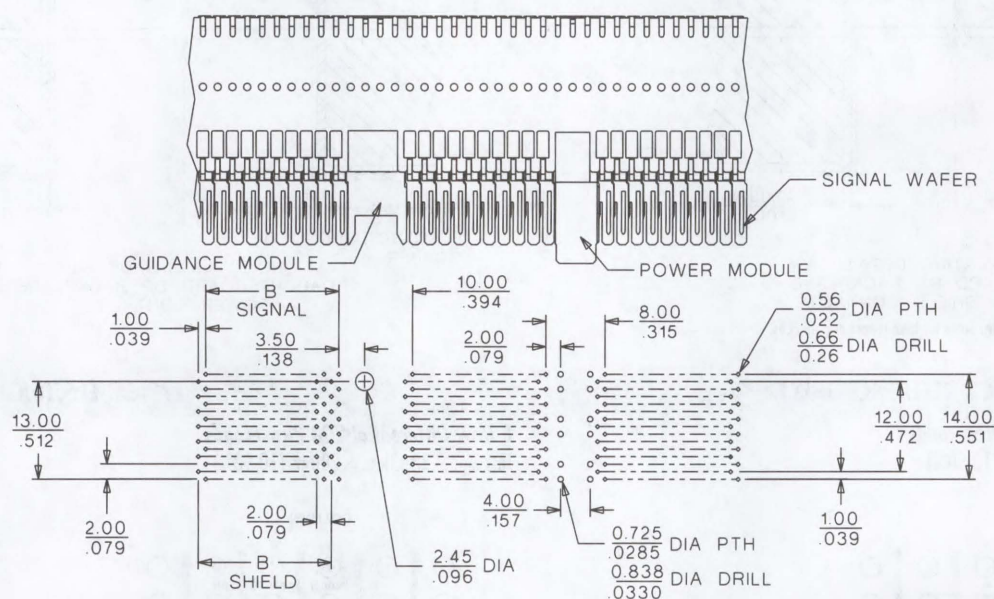


## Cross Section Detail 8 Row

Press-fit of both backplane and daughtercard connectors is recommended to avoid solder defects in this high density connector. Note that the backplane and mating face are a 2.00 by 2.25mm (.079 by .089") grid, but the daughtercard grid is 2.00 by 2.00mm (.079 by .079"), shortening electrical length and saving PCB space. The power hole pattern is better shown on the following pages.

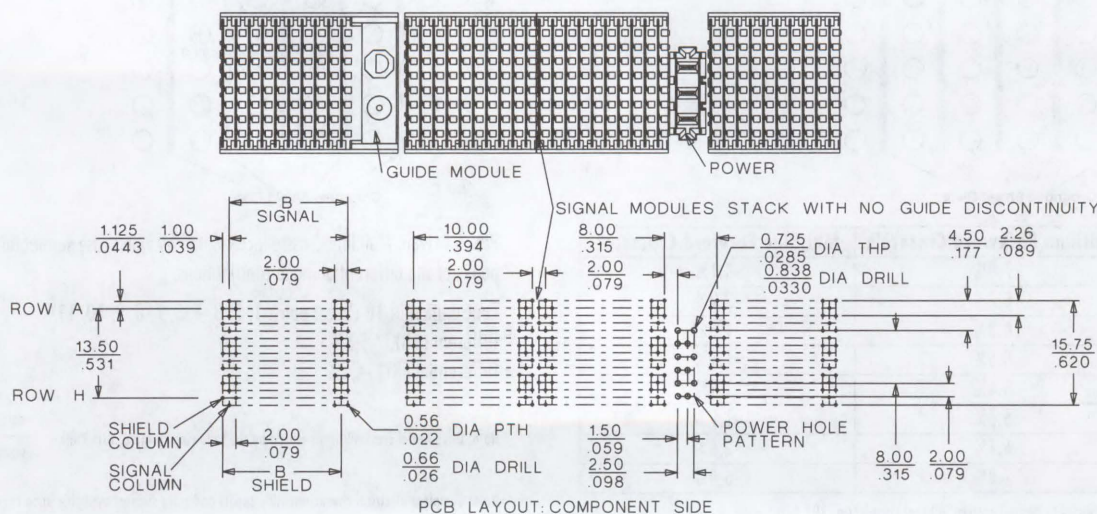
# CATALOG DRAWING (FOR REFERENCE ONLY)

## TYPICAL DAUGHTERCARD HOLE PATTERN - 8 ROW



# CATALOG DRAWING (FOR REFERENCE ONLY)

## TYPICAL BACKPLANE HOLE PATTERN - 8 ROW



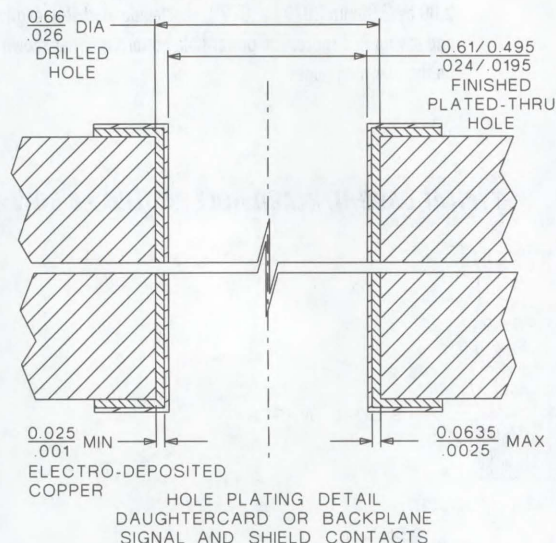
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## Cross Section Detail 8 Row

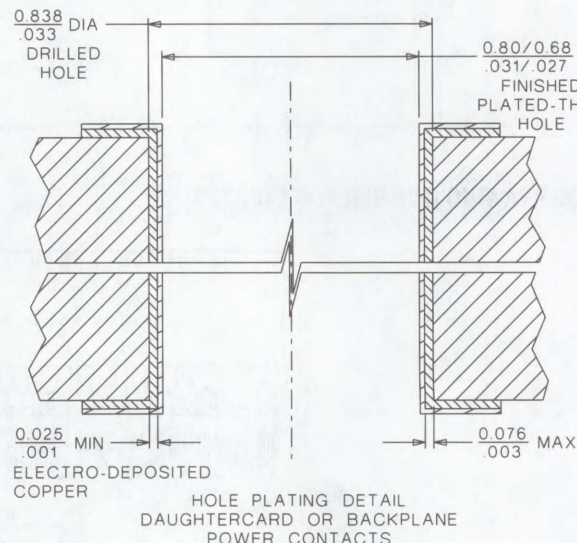
### CATALOG DRAWING (FOR REFERENCE ONLY)

Hole Plating Detail Signal



Note: Drilled hole and copper plating is the same for bare copper or gold PCBs.

Hole Plating Detail Power

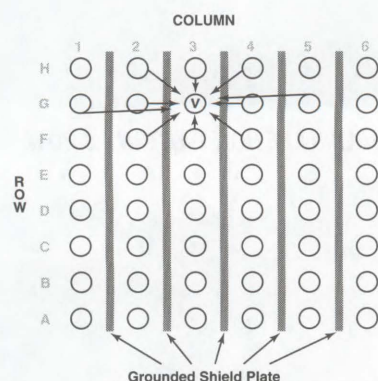


### TYPICAL ELECTRICAL PERFORMANCE

### CATALOG DRAWING (FOR REFERENCE ONLY)

#### 8 Row Single Ended 300 Picoseconds

Test Signal Rise Time = 300 ps (10-90%)



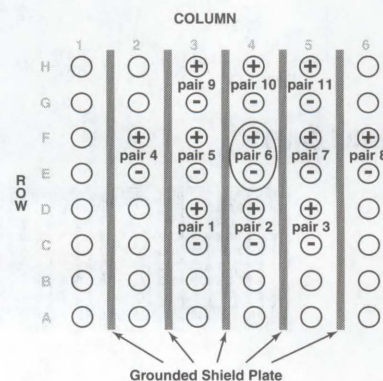
| Row | Multiline Backward Crosstalk | Multiline Forward Crosstalk |
|-----|------------------------------|-----------------------------|
| H   | 7.0%                         | -4.1%                       |
| G   | 6.7%                         | -2.2%                       |
| F   | 6.3%                         | -1.8%                       |
| E   | 5.6%                         | -1.9%                       |
| D   | 5.6%                         | -1.9%                       |
| C   | 5.6%                         | -1.9%                       |
| B   | 6.1%                         | -2.6%                       |
| A   | 7.8%                         | -6.4%                       |

Test Conditions: 1:0 Signal to ground pattern, 40 real signals/cm (101.6/in)  
System Impedance: 50Ω  
Nearest 10 lines driven

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.

#### 8 Row Differential 200 Picoseconds

Test Signal Rise Time = 200 ps (10-90%)



Pair 6 Driven, Multiline Crosstalk calculated by worst case summation of measured individual peaks of the differential mode contributions.

Contribution of 10 closest pairs: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11

Differential BXT\* 5.3%

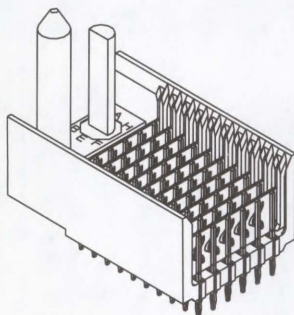
Differential FXT\* -4.2%

Note: Differential crosstalk is measured by the following formula, Diff Xtalk =  $\frac{\text{noise}(+) - \text{noise}(-)}{\text{signal swing}(+) - \text{signal swing}(-)}$

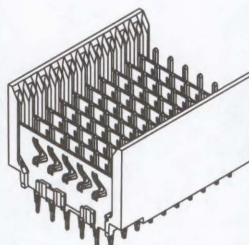
Note: Complete electrical characterization report and spice support available upon request.



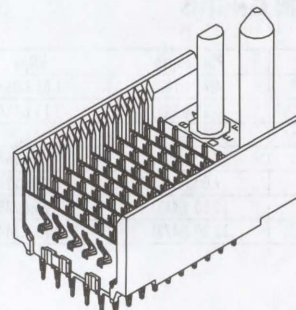
BACKPLANE MODULE ORIENTATION



**Signal Pin End Header**  
8 Row – **74061**  
6 Row – **74058**



**Open Header**  
8 Row – **74060**  
6 Row – **74057**



**Shield End Header**  
8 Row – **74062**  
6 Row – **74059**

- Guide pin must be above the mating PCB. Optional coding below.
- Headers stackable for continuous grid.
- Available in 10-column and 25-column versions.

**Power Strategy**

- Power modules for 8 row connectors can have 3 blades
- Power modules for 6 row connectors can have 2 blades each
- A power module only occupies 6.00mm (.236") of board edge
- Up to 4 different mating levels are available for power allowing sequenced mating during hot swap operations
- All power levels mate before the signal pins
- Multiple power modules provide up to 120A per 25.00mm (.984") of board edge

**Guidance Strategy**

- For smaller connectors on smaller boards, guidepins may not be needed.
- For larger PCBs, guidepins are recommended
  - Generally spaced 1/3rd from each end of the PCB for best guidance

**Enable Pin**

- A 4.25mm (.167") mating length pin, generally used as a last-mate enable pin, is available. Please contact Molex if you need this pin length.

**Spaces In the Connector**

- Spaces can allow a large board stiffener even with low signal density connectors
- Wherever there is a space, end blocks are recommended (or power or guidance to act as "book ends" for the stackup of wafers)
- Spaces allow for more efficient routing of backplanes with clear "highways" to allow very high speed signals to pass with minimum discontinuity

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## MATING PIN LENGTHS

| Signal Pin   | Pin Length   | Wipe        |
|--------------|--------------|-------------|
| Short Signal | 4.75 (.187)  | 1.65 (.065) |
| Long Signal  | 6.25 (.246)  | 3.15 (.124) |
| Power        |              |             |
| Short Power  | 7.50 (.295)  | 4.25 (.167) |
| Medium       | 9.00 (.354)  | 5.75 (.226) |
| Long         | 10.50 (.413) | 7.25 (.285) |
| Extra Long   | 12.00 (.472) | 8.75 (.344) |

**Special pinning patterns**

- Special mating patterns are possible within a backplane module
  - Easiest is if 1 row is all the same length
  - Can be different from other rows
  - Next easiest is 1 long premating pin or one short enable pin at the end of a row
  - Most difficult is the use of odd length pins placed at random in the matrix

**Wafer Construction**

- Leadframes and ground planes stamped as "wafers"
- Overmolded for robustness (support press-fit zones)
- Provides tightly controlled dielectric and distance to ground planes
- Wafers interlock with each other for robustness (Pegs on one wafer fit into grooves on the next wafer)
- Wafers interlock with stiffener (Dovetails on top and protruding tabs on the rear)

**Electrical Performance**

- Leadframes carefully control contact position (and impedance)
- Leadframes a constant distance from ground plane
- Groundplane has nearly 1 connection to the PCB for each signal connection. This assures low inductance for the ground connection
- Ground plane mating interface is with chevron shaped ground mating contacts
  - Assures constant normal force
  - Snag-proof design
  - Upon mating, the chevron beams disappear electrically back into the ground plane
  - Plastic features on back of mating wafer assure coplanarity of ground planes
- Signal to ground plane distance is less than 1.00mm (.039"). Signal to signal is 2.25mm (.089"), which allows room for the dual beam contacts. Because the signals are closer to the grounds than to each other, VHDM is inherently low in crosstalk and the ground planes reduce EMI (Electro Magnetic Interference).

**6 Row Typical Resistance By Row**

| Row     | A   | B   | C   | D    | E  | F    |
|---------|-----|-----|-----|------|----|------|
| mΩ max. | 6.5 | 7.5 | 9.5 | 10.5 | 12 | 13.5 |

**8 Row Typical Resistance By Row**

| Row     | A | B   | C    | D  | E    | F  | G    | H  |
|---------|---|-----|------|----|------|----|------|----|
| mΩ max. | 8 | 9.5 | 10.5 | 12 | 13.5 | 15 | 16.5 | 18 |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Wafers aggregated into connectors receive a custom order number 74030-XXXX for 6 row daughtercard assemblies
- Wafer construction provides high density and speed
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible
- Metal stiffener assures accurate true position and straightens the board edge for easier mating
- Signal, power, and guidance modules may be placed as appropriate for the application following the guidelines shown earlier in the catalog

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74057, 74058, 74059

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

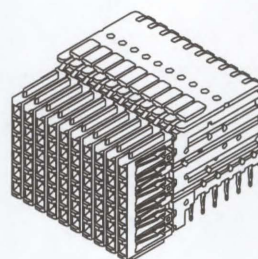
Operating Temperature: -55 to +105°C



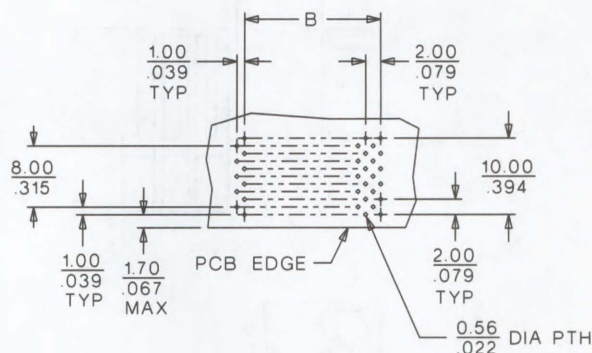
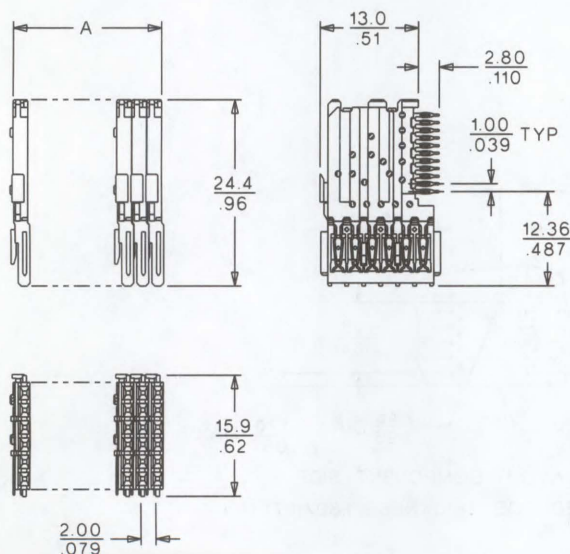
## 2.00mm (.079") Pitch VHDM\* Board-to-Board Daughtercard Receptacle

### 74031

## Right Angle 6 Row Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80/.071 MIN

## ORDERING INFORMATION

Please call or e-mail Molex and indicate you are working on a VHDM receptacle design. A member of the VHDM team will return your call and work through the details of the design. Next, a print and order number for your assembly will be created and prototype quantities can be quickly made.

| Columns | Dimension     |               |
|---------|---------------|---------------|
|         | A             | B             |
| 10      | 20.00 (.787)  | 18.00 (.709)  |
| 25      | 50.00 (1.969) | 48.00 (1.890) |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Guide pin provides  $\pm 1.67\text{mm}$  (.065") of capture
- Coding key provides 8 possible coding positions
- 8.00mm (.315") wide module requires little space
- Guidance module attached to stiffener for robustness
- Stiffener assures accurate contact true position and connector straightness

## Reference Information

Product Specification: PS-74031-999

Packaging: Delivered as part of a complete connector assembly

UL File No.: Pending

CSA File No.: Pending

Mates With: 74058, 74059

Designed In: Millimeters

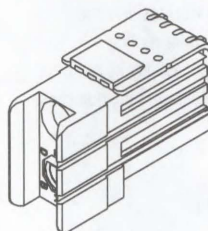
## Physical

Housing: Liquid crystal polymer, UL 94V-0

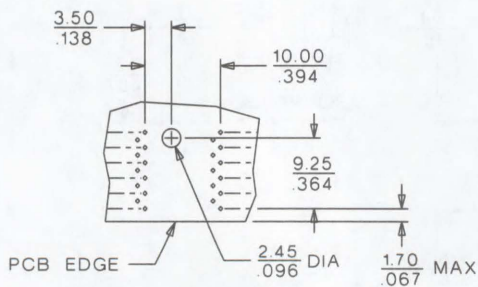
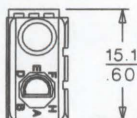
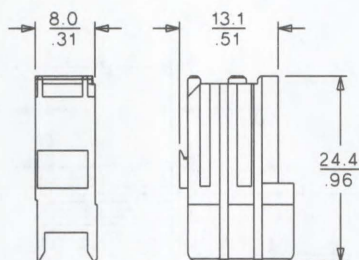
Operating Temperature: -55°C to +105°C

2.00mm (.079") Pitch  
VHDM\*Board-to-Board  
Daughtercard Guidance  
6 Row Module

74037



## CATALOG DRAWING (FOR REFERENCE ONLY)

PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80 / .071 MIN

## ORDERING INFORMATION

| Code | 6 Row      |
|------|------------|
| None | 74037-0006 |
| A    | 74037-6001 |
| B    | 74037-6002 |
| C    | 74037-6003 |
| D    | 74037-6004 |
| E    | 74037-6005 |
| F    | 74037-6006 |
| G    | 74037-6007 |
| H    | 74037-6008 |

Note: The guidance module is always combined with signal waters and a power module to create a 6 row daughtercard assembly 74030-XXXX. They are not ordered separately.

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 2 blades per module
- 4 mating lengths for live insertion
- 10.0A per blade
- Receptacle on backplane prevents touching high current
- Module only 6.00mm (.236") wide allows 4 modules per 25.00mm (.984") for 80.0A per 25.00mm (.984")
- 1.50mm (.059") distance between mating lengths assures accurate sequencing
- Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Delivered as part of a complete connector assembly

UL File No.: Pending

CSA File No.: Pending

Mates With: 74029-6XXX

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 10.0A

Contact Resistance: 3mΩ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 36N max. per press-fit pin

Retention Force: 20N min. per press-fit pin

Mating Force: 4.0N max. per pin

Power Normal Force: 1.0N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



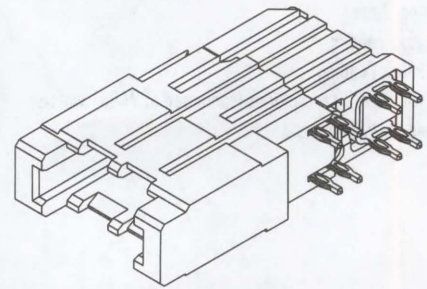
2.00mm (.079") Pitch

VHDM\*

Board-to-Board  
Daughtercard Receptacle

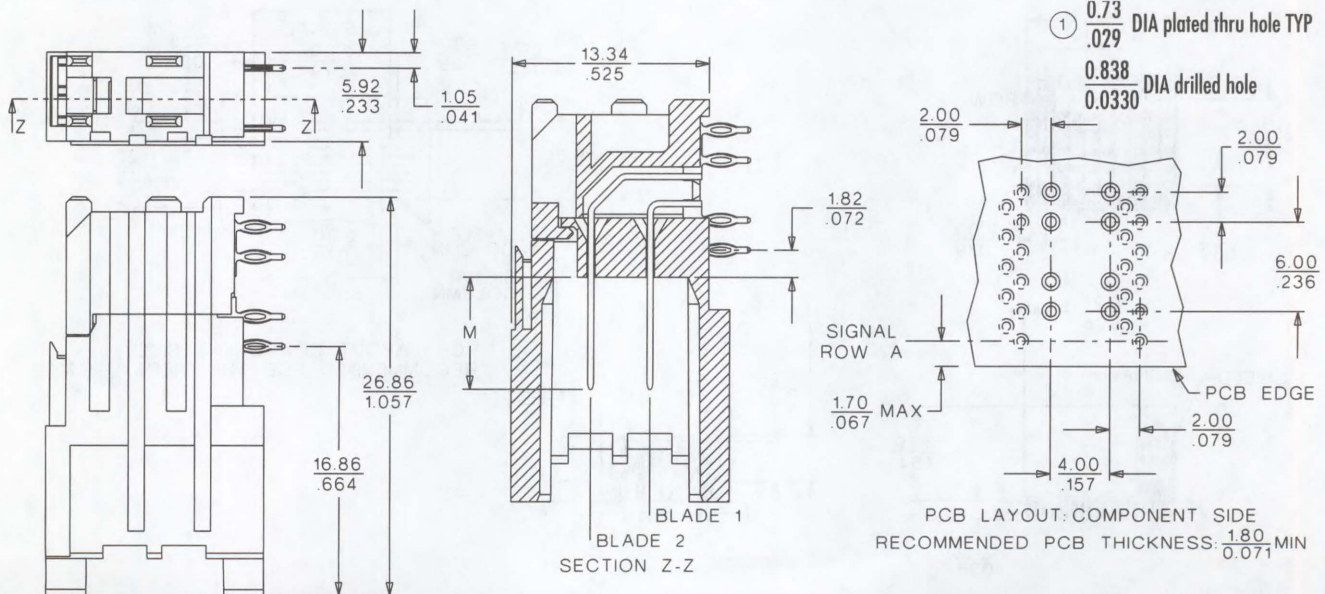
74026

Right Angle, 6 Row  
2 Blade Power Module



Backplane Connector Systems

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

To select an order number, complete the order number by choosing the mating length for Blade 1 and Blade 2.

| Material number assignment 74026-6**0 |               |
|---------------------------------------|---------------|
| Blade 1                               | Blade 2       |
| Mating Length                         | Mating Length |
| 1 = 7.5mm                             | 1 = 7.5mm     |
| 2 = 9.0mm                             | 2 = 9.0mm     |
| 3 = 10.5mm                            | 3 = 10.5mm    |
| 4 = 12.0mm                            | 4 = 12.0mm    |

74026-6 X X 0

Blade 1

Blade 2

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## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74030 receptacles (composed of 74031 wafers)

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer UL, 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

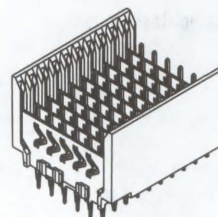
Operating Temperature: -55 to +105°C



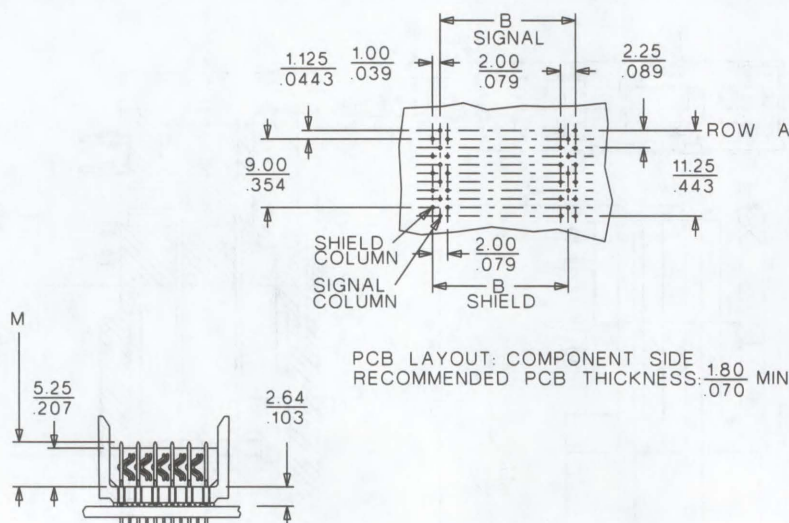
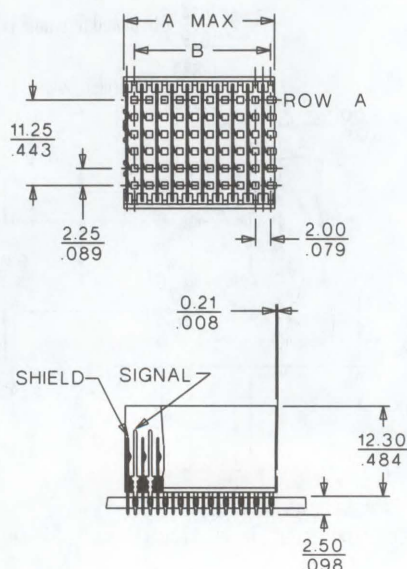
## 2.00mm (.079") Pitch VHDM\* Board-to-Board Backplane Header

### 74057

## Vertical 6 Row Open Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80  
.070 MIN

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | M           |
| 60       | 74057-1001 | Press-Fit   | 20.00 (.787)  | 18.00 (.709)  | 4.75 (.187) |
| 60       | 74057-1002 | Press-Fit   | 20.00 (.787)  | 18.00 (.709)  | 6.25 (.246) |
| 150      | 74057-2501 | Press-Fit   | 50.00 (1.969) | 48.00 (1.890) | 4.75 (.187) |
| 150      | 74057-2502 | Press-Fit   | 50.00 (1.969) | 48.00 (1.890) | 6.25 (.246) |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Metal guide pin provides for  $\pm 1.65\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects, allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74030 receptacles (including 74031 wafers and 74037 guidance module)

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 M $\Omega$  min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30 $\mu$ m min. with Tin/Lead on the tails

Operating Temperature: -55°C to +105°C



2.00mm (.079") Pitch

VHDM\*

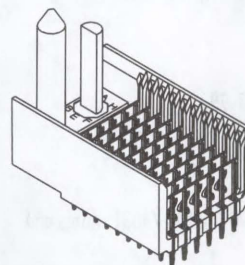
Board-to-Board

Backplane Header

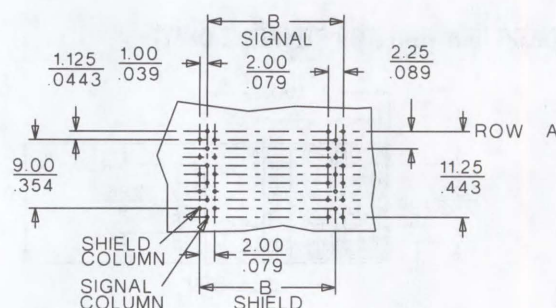
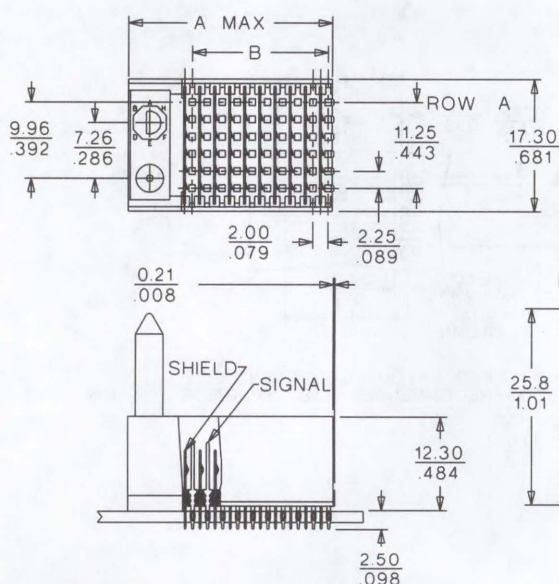
74058

Vertical

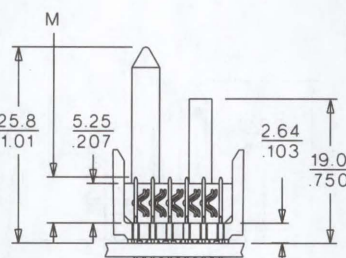
6 Row Guide Pin Signal  
Module, Pin End Version



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80  
.070 MIN



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            |            | Termination | Dimension     |               |             |
|----------|------------|------------|------------|-------------|---------------|---------------|-------------|
|          | No Code    | Code A     | Code B     |             | A             | B             | M           |
| 60       | 74058-1001 | 74058-1011 | 74058-1021 | Press-Fit   | 28.00 (1.102) | 18.00 (.709)  | 4.75 (.187) |
| 60       | 74058-1002 | 74058-1012 | 74058-1022 | Press-Fit   | 28.00 (1.102) | 18.00 (.709)  | 6.25 (.246) |
| 150      | 74058-2501 | 74058-2511 | 74058-2521 | Press-Fit   | 58.00 (2.283) | 48.00 (1.890) | 4.75 (.187) |
| 150      | 74058-2502 | 74058-2512 | 74058-2522 | Press-Fit   | 58.00 (2.283) | 48.00 (1.890) | 6.25 (.246) |

Note: Other codes are available. Please contact Molex for more information.

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Metal guide pin provides for  $\pm 1.65\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (No other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

## Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74030 receptacles (including 74031 wafers and 74037 guidance module)

Designed In: Millimeters

## Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 M $\Omega$  min.

## Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

## Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

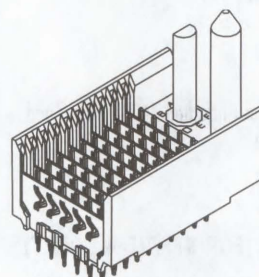
Plating: Selective Gold 30 $\mu$  min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C

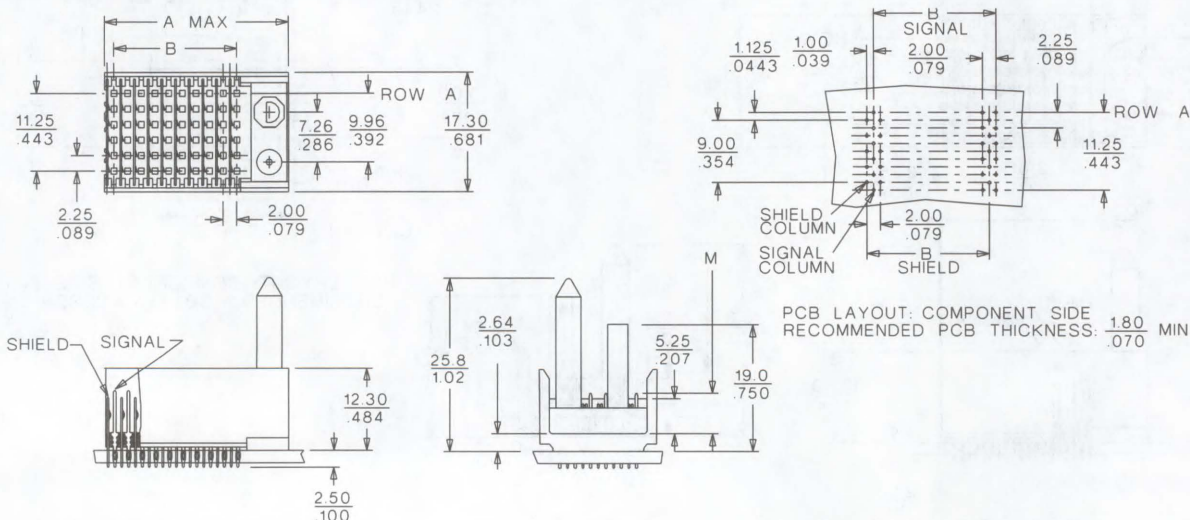


## 2.00mm (.079") Pitch VHDM\* Board-to-Board Backplane Header

### 74059 Vertical 6 Row Guide Pin Signal Module Shield End Version



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            |            | Termination | Dimension     |               |             |
|----------|------------|------------|------------|-------------|---------------|---------------|-------------|
|          | No Code    | Code A     | Code B     |             | A             | B             | M           |
| 60       | 74059-1001 | 74059-1011 | 74059-1021 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 4.75 (.187) |
| 60       | 74059-1002 | 74059-1012 | 74059-1022 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 6.25 (.246) |
| 150      | 74059-2501 | 74059-2511 | 74059-2521 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 4.75 (.187) |
| 150      | 74059-2502 | 74059-2512 | 74059-2522 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 6.25 (.246) |

Note: Other codes are available. Please contact Molex for more information.

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 2 contacts per module
- 10.0A per contact
- Receptacle on backplane prevents touching a high current contact
- Module only 6.00mm (.236") wide allows 4 modules per 25.00mm (.984") for 80.0A per 25.00mm (.984")
- Press-fit for ease of installation and repair

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74026 power module as part of a 74030 daughtercard assembly

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 10.0A

Contact Resistance: 3mΩ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 22N min. per press-fit pin

Mating Force: 4.0N max. per pin

Power Normal Force: 1.0N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

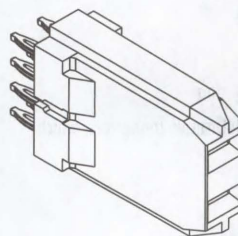
Operating Temperature: -55 to +105°C



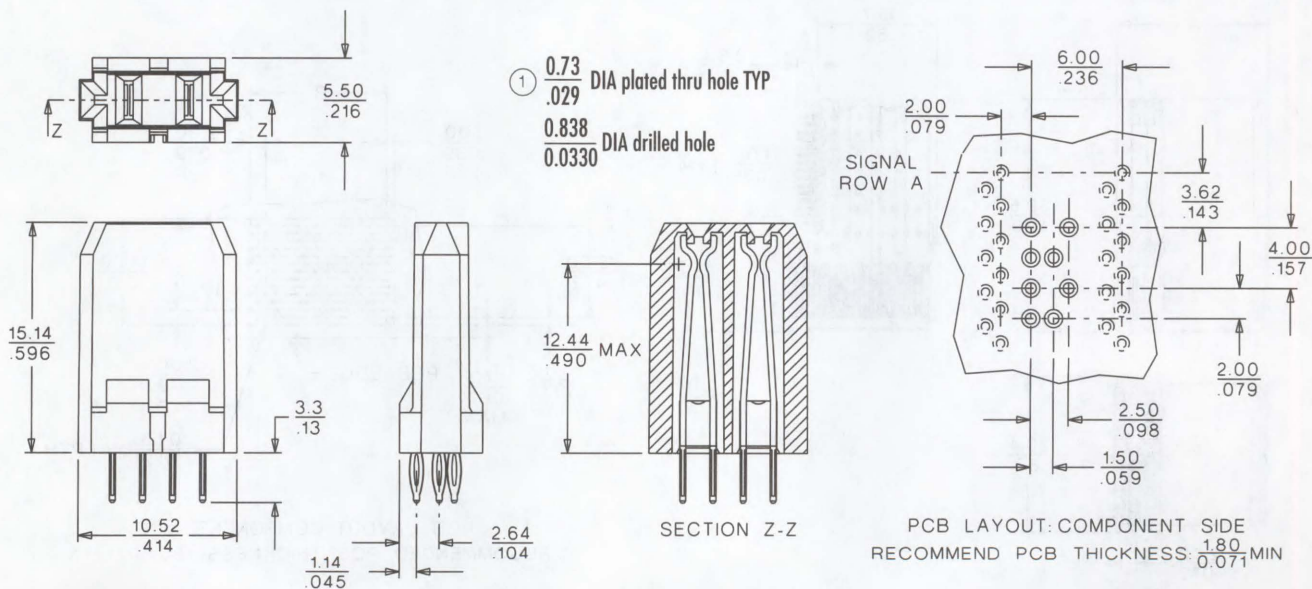
## 2.00mm (.079") Pitch VHDM\* Board-to-Board Backplane Power Module

### 74029

## Vertical, 6 Row 2 Circuit Power Receptacle



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Module                 | Order No.  | Termination | Finish |
|------------------------|------------|-------------|--------|
| 2 Circuit Power Module | 74029-6000 | Press-Fit   | Gold   |

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## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Wafers aggregated into connectors that receive a custom part number 74040-XXXX for an 8-row daughtercard assembly
- Wafer construction provides high density and speed
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects, allows use of thicker PCBs without worrying about solder tail length
- High temperature plastic housings are Surface Mount Compatible
- Metal stiffener assures accurate true position and straightens the board edge for easier mating
- Signal, power, and guidance modules may be placed as appropriate for the application following the guidelines shown earlier in the catalog

## Reference Information

Product Specification: PS-74031-999

Packaging: Assembled into 74040 series connectors, which come in tubes

UL File No.: Pending

CSA File No.: Pending

Mates With: 74060, 74061, 74062

Designed In: Millimeters

## Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 M $\Omega$  min.

## Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per pin

Unmating Force: 0.15N min. per pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

## Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30 $\mu$  min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

VHDM\*

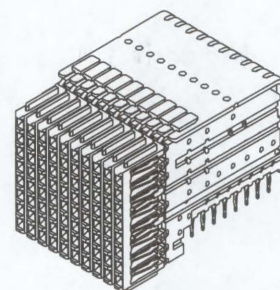
Board-to-Board

Daughtercard Receptacle

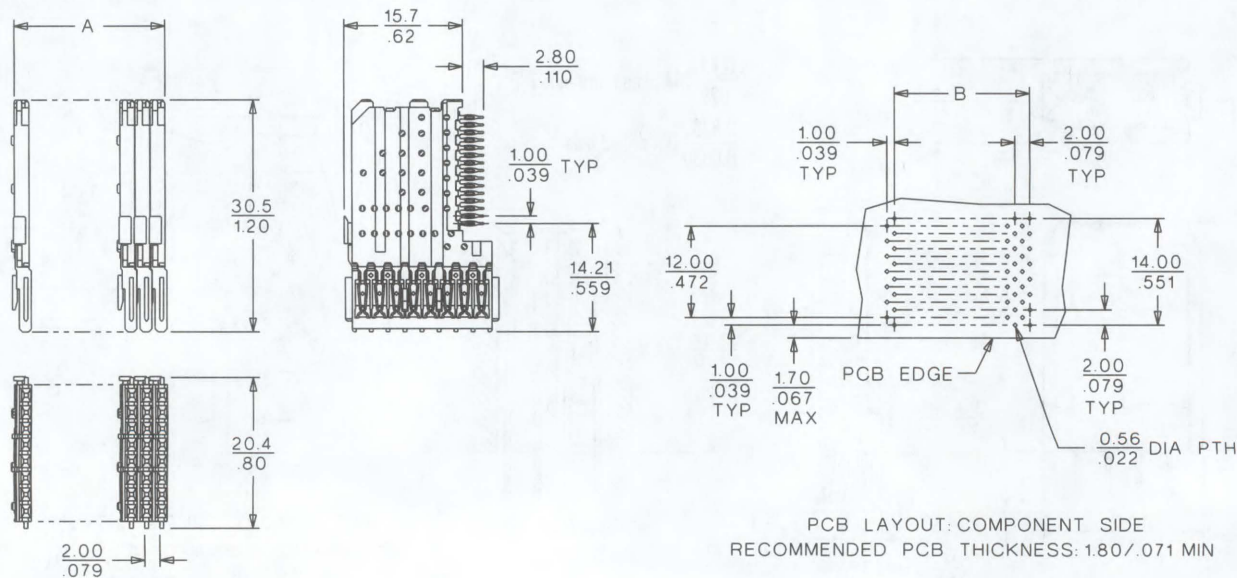
74041

Right Angle

8 Row Signal Wafers



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

Please call or e-mail Molex and indicate you are working on a VHDM receptacle design. A member of the VHDM team will return your call and work through the details of the design. Next, a print and order number for your assembly will be created and prototype quantities can be quickly made.

| Columns | Dimension     |               |
|---------|---------------|---------------|
|         | A             | B             |
| 10      | 20.00 (.787)  | 18.00 (.709)  |
| 25      | 50.00 (1.969) | 48.00 (1.890) |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Guide pin provides  $\pm 1.67\text{mm}$  (.065") of capture
- Coding key provides 8 possible coding positions
- 8.00mm (.315") wide module requires little space
- Guidance module attached to stiffener for robustness
- Stiffener assures accurate contact true position and connector straightness

### Reference Information

Product Specification: PS-74031-999

Packaging: Delivered as part of complete connector assembly

UL File No.: Pending

CSA File No.: Pending

Mates With: 74061, 74062

Designed In: Millimeters

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

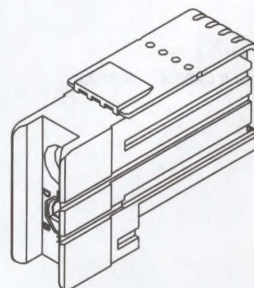
VHDM\*

Board-to-Board

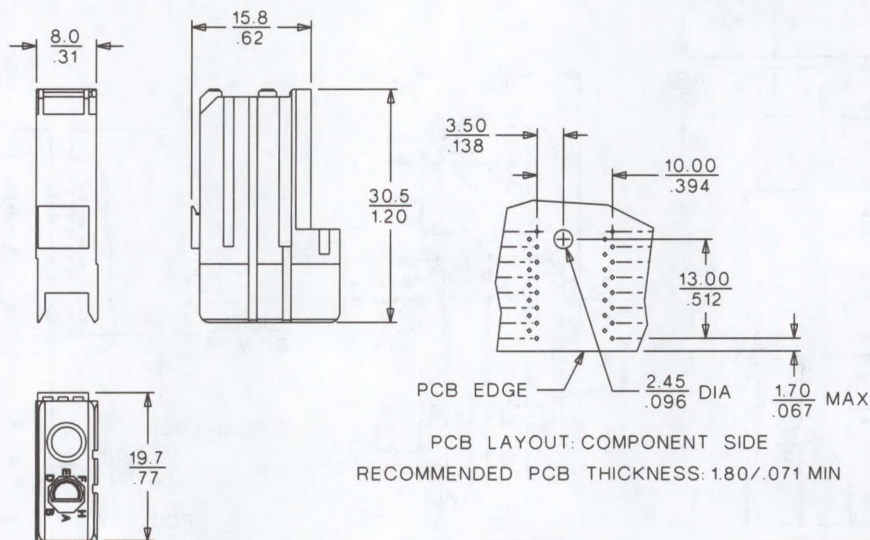
Daughtercard Guidance

8 Row Module

74037



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Code | 8 Row      |
|------|------------|
| None | 74037-0008 |
| A    | 74037-8001 |
| B    | 74037-8002 |
| C    | 74037-8003 |
| D    | 74037-8004 |
| E    | 74037-8005 |
| F    | 74037-8006 |
| G    | 74037-8007 |
| H    | 74037-8008 |

Note: The guidance module is always combined with signal waters and a power module to create an 8 row daughtercard assembly 74040-XXXX. They are not ordered separately.

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## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 3 blades per module
- 4 mating lengths for live insertion
- 10.0A per blade
- Receptacle on backplane prevents touching high current
- Module only 6.00mm (.236") wide allows 4 modules per 25.00mm (.984") for 120A per 25.00mm (.984")
- 1.50mm (.059") distance between mating lengths assures accurate sequencing
- Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Delivered as part of a complete connector assembly 74040-XXXX

UL File No.: Pending

CSA File No.: Pending

Mates With: 74029-8XXX

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 10.0A

Contact Resistance: 3mΩ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 36N max. per press-fit pin

Retention Force: 20N min. per press-fit pin

Mating Force: 4.0N max. per pin

Power Normal Force: 1.0N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

VHDM\*

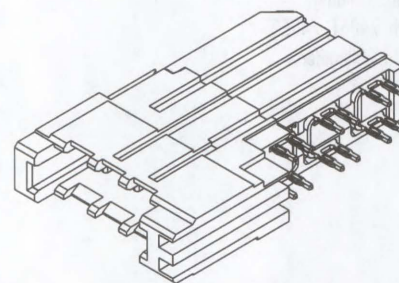
Board-to-Board

Daughtercard Receptacle

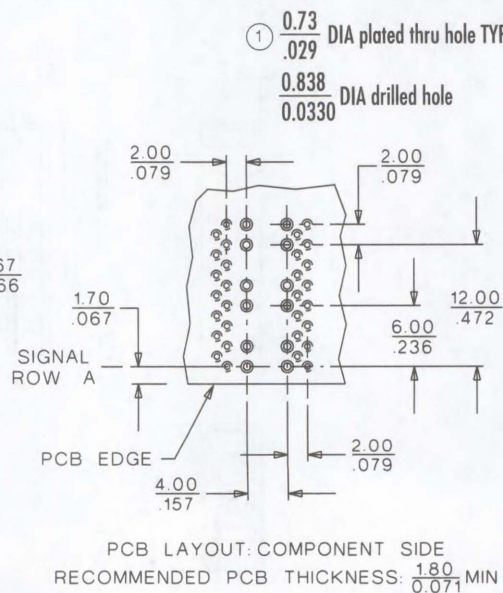
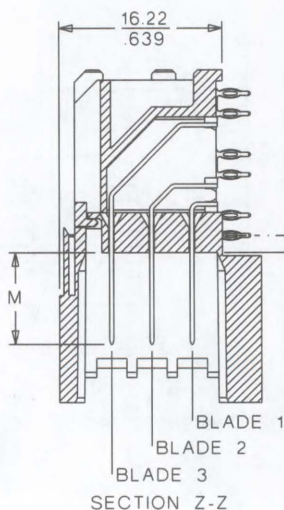
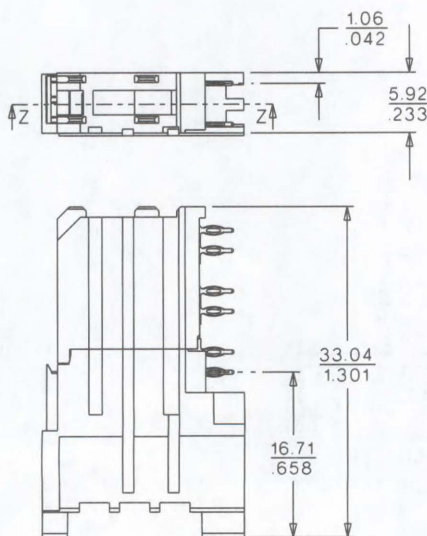
74026

Right Angle, 8 Row

3 Blade Power Module



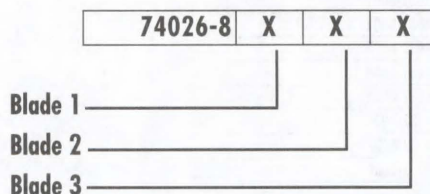
## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

To select an order number, complete the order number by choosing the mating length for Blade 1, Blade 2 and Blade 3.

| Material number assignment 74026-8*** |               |               |
|---------------------------------------|---------------|---------------|
| Blade 1                               | Blade 2       | Blade 3       |
| Mating Length                         | Mating Length | Mating Length |
| 1 = 7.5mm                             | 1 = 7.5mm     | 1 = 7.5mm     |
| 2 = 9.0mm                             | 2 = 9.0mm     | 2 = 9.0mm     |
| 3 = 10.5mm                            | 3 = 10.5mm    | 3 = 10.5mm    |
| 4 = 12.0mm                            | 4 = 12.0mm    | 4 = 12.0mm    |



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## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74040 receptacles (composed of 74041 wafers)

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per shield pin, 22N per signal pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

VHDM\*

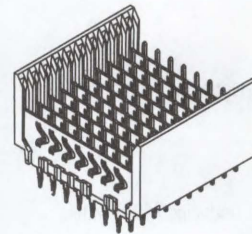
Board-to-Board

Backplane Header

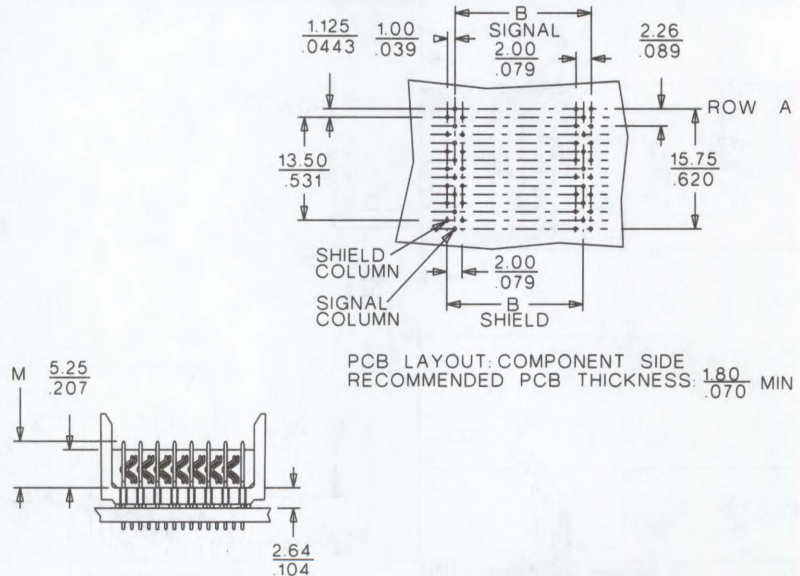
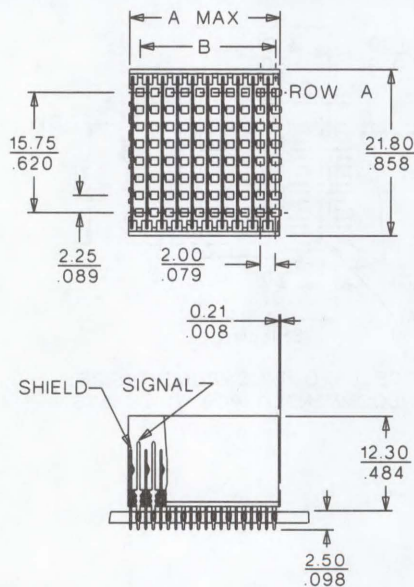
74060

Vertical

8 Row Open Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | M           |
| 80       | 74060-1001 | Press-Fit   | 20.00 (.787)  | 18.00 (.709)  | 4.75 (.187) |
| 80       | 74060-1002 | Press-Fit   | 20.00 (.787)  | 18.00 (.709)  | 6.25 (.246) |
| 200      | 74060-2501 | Press-Fit   | 50.00 (1.969) | 48.00 (1.890) | 4.75 (.187) |
| 200      | 74060-2502 | Press-Fit   | 50.00 (1.969) | 48.00 (1.890) | 6.25 (.246) |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Metal guide pin provides for  $\pm 1.67\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects, allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74040 receptacles (including 74041 wafers and 74037 guidance module)

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 M $\Omega$  min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30 $\mu$ " min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



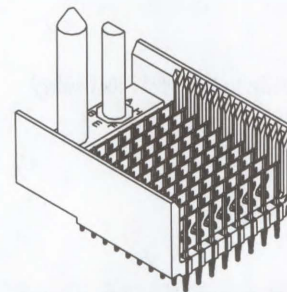
2.00mm (.079") Pitch

VHDM\*

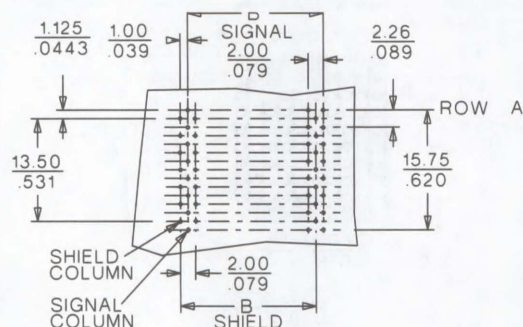
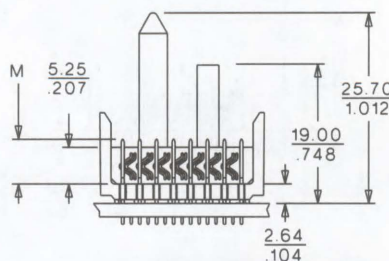
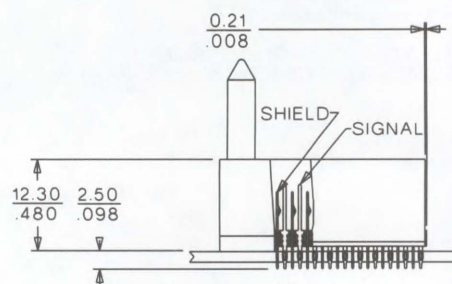
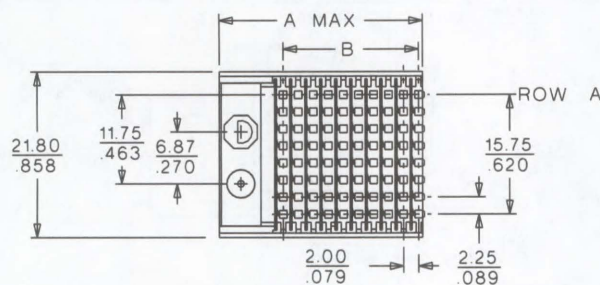
Board-to-Board  
Backplane Header

74061

Vertical  
8 Row Guide Pin Signal  
Module, Pin End Version



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80 (.070) MIN

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            |            | Termination | Dimension     |               |             |
|----------|------------|------------|------------|-------------|---------------|---------------|-------------|
|          | No Code    | Code A     | Code B     |             | A             | B             | M           |
| 80       | 74061-1001 | 74061-1011 | 74061-1021 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 4.75 (.187) |
| 80       | 74061-1002 | 74061-1012 | 74061-1022 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 6.25 (.246) |
| 200      | 74061-2501 | 74061-2511 | 74061-2521 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 4.75 (.187) |
| 200      | 74061-2502 | 74061-2512 | 74061-2522 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 6.25 (.246) |

Note: Other codes are available. Please contact Molex for more information.

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Metal guide pin provides for  $\pm 1.67\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects, allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74040 receptacles (including 74041 wafers and 74037 guidance module)

Designed In: Millimeters

### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: See table of resistance by row on page 8

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 M $\Omega$  min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30 $\mu$  min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

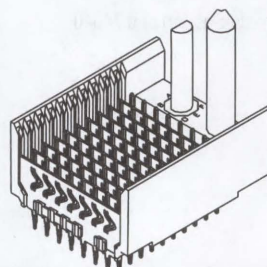
VHDM\*

Board-to-Board  
Backplane Header

74062

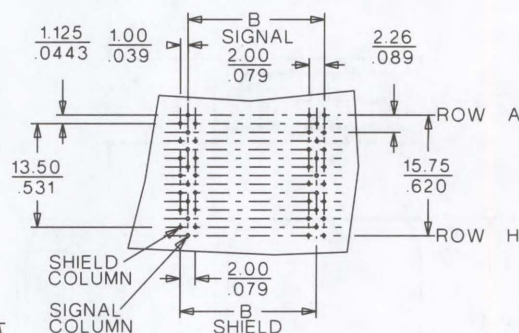
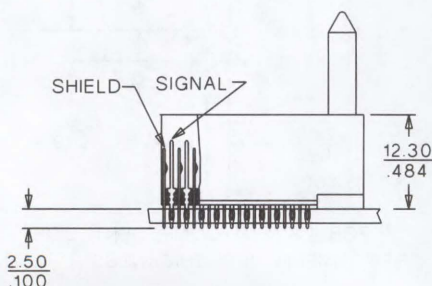
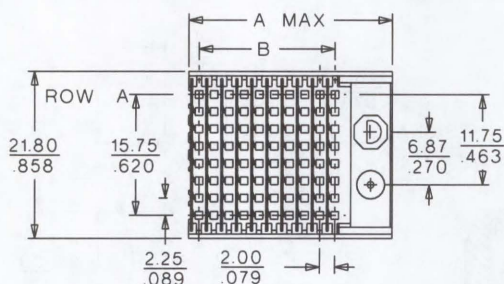
Vertical

8 Row Guide Pin Signal  
Module, Shield End Version



Backplane Connector Systems

## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 1.80 MIN / .070

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            |            | Termination | Dimension     |               |             |
|----------|------------|------------|------------|-------------|---------------|---------------|-------------|
|          | No Code    | Code A     | Code B     |             | A             | B             | M           |
| 80       | 74062-1001 | 74062-1011 | 74062-1021 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 4.75 (.187) |
| 80       | 74062-1002 | 74062-1012 | 74062-1022 | Press-Fit   | 27.00 (1.063) | 18.00 (.709)  | 6.25 (.246) |
| 200      | 74062-2501 | 74062-2511 | 74062-2521 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 4.75 (.187) |
| 200      | 74062-2502 | 74062-2512 | 74062-2522 | Press-Fit   | 57.00 (2.244) | 48.00 (1.890) | 6.25 (.246) |

Note: Other codes are available. Please contact Molex for more information.

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- 3 contacts per module
- 10.0A per contact
- Receptacle on backplane prevents touching a high current contact
- Module only 6.00mm (.236") wide allows 4 modules per 25.00mm (.984") for 120A per 25.00mm (.984")
- Press-fit for ease of installation and repair

## Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74026 power module as part of a 74040 daughtercard assembly

Designed In: Millimeters

## Electrical

Voltage: 250V

Current: 10.0A

Contact Resistance: 3mΩ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 10,000 MΩ min.

## Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 22N min. per press-fit pin

Mating Force: 4.0N max. per pin

Power Normal Force: 1.0N min.

Durability: 200 cycles

## Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30μ" min. with Tin/Lead on the tails

Operating Temperature: -55 to +105°C

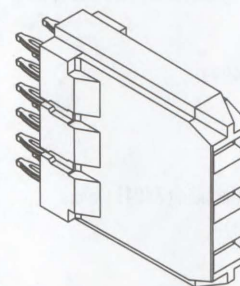


2.00mm (.079") Pitch

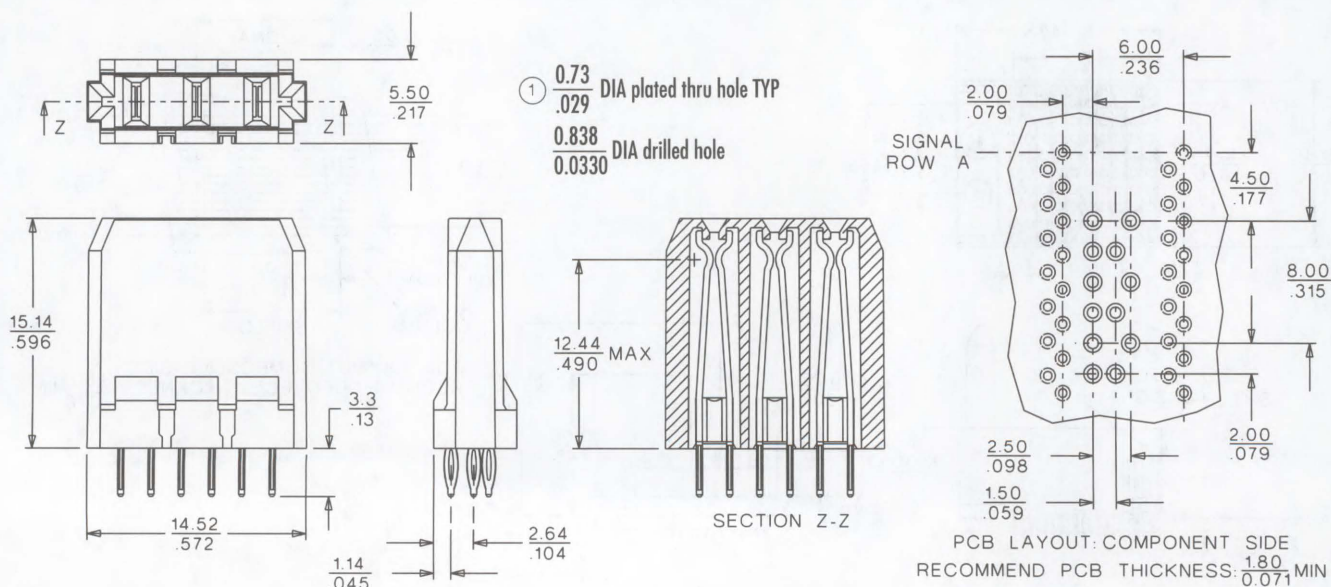
VHDM\*

Board-to-Board  
Backplane Power Module

74029

Vertical, 8 Row  
3 Circuit Power Receptacle

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Module                 | Order No.  | Termination | Finish |
|------------------------|------------|-------------|--------|
| 3 Circuit Power Module | 74029-8000 | Press-Fit   | Gold   |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

The High Density Metric (HDM) connector system is designed for applications that require high interconnect density and high-speed signal integrity. Signal modules of 72 and 144 contacts are available. Daughtercard modules are combined on a metal stiffener so that they are handled as one connector. Special modules are available for power, guidance, mounting and coding functions. These building blocks can be combined to create very large connectors. Connectors of above 1000 circuits are not unusual. The power contacts can handle 15.0A of current per power blade, efficiently delivering hundreds of watts in multiple voltage levels, even in hot plug applications.

HDM<sup>PLUS</sup> modules have internal ground contacts that provide a ground reference and isolate contacts from each other nearly all the way through the connector, allowing for either low ground ratios, or subnanosecond rise times. Unshielded modules and shielded modules can be combined as needed on a daughtercard, and will all mate with the same simple header on the backplane.

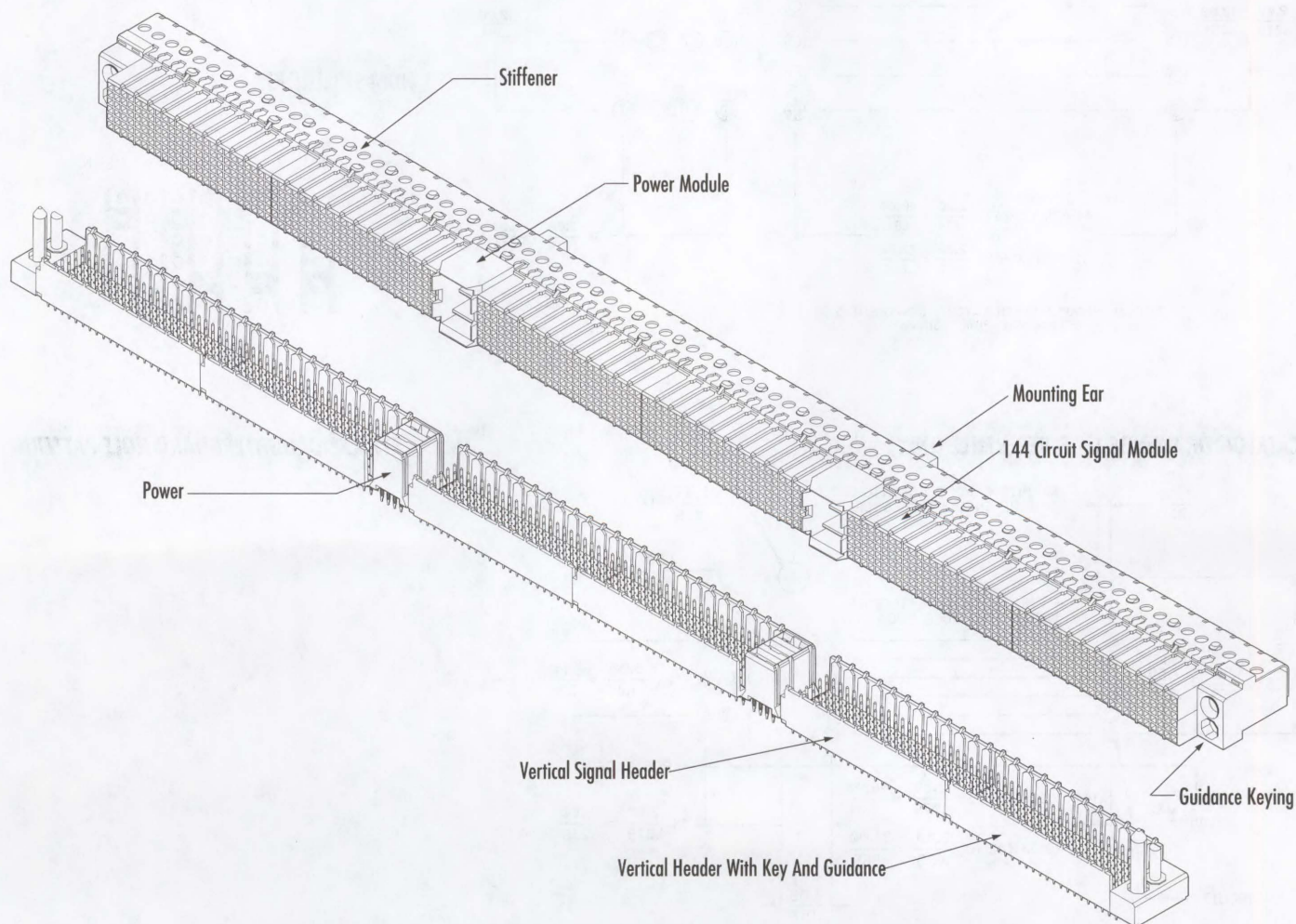
The modularity and design flexibility allow engineers to adapt quickly to changing design requirements or future system upgrades without changing systems.

### Features and Benefits

- 2mm 6-row connector provides 30 contacts per centimeter
- Designed for high-density/high-speed applications—internal shielding allows subnanosecond rise times with low crosstalk (see HDM<sup>PLUS</sup>)
- Shielded and unshielded modules mate with the same backplane header (low cost on backplane)
- Mix and match signal, power, guidance, shielded modules to optimize the connector to the application
- Multiple sourced connector (available from Molex and Teradyne) assures intermateability and interchangeability
- 45.0A power modules
- Tail lengths available in 0.5mm increments to optimize to PCB thickness
- 50Ω impedance
- Metric connector in the same form factor as Futurebus
- Very low insertion force (0.35N per contact) allows very high pin counts with reasonable mating forces (~5.5 lb per inch of connector length)
- Both press-fit and solder tail versions available for backplane and daughtercards
- Meets Bellcore requirements



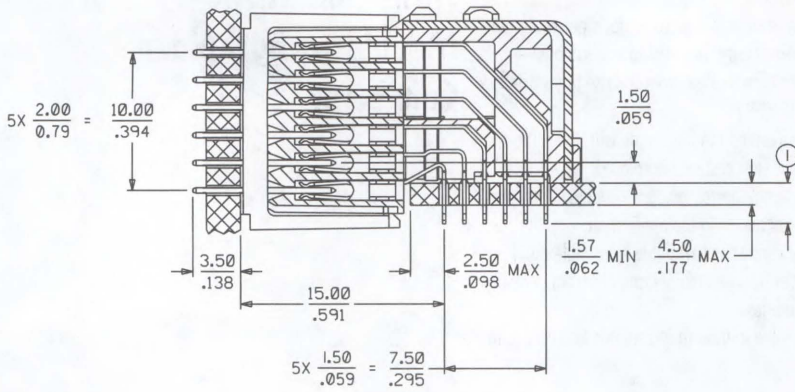
## 2.00mm (.079") Pitch HDM\* and HDM<sup>PLUS</sup>\* Module-to-Backplane Connector



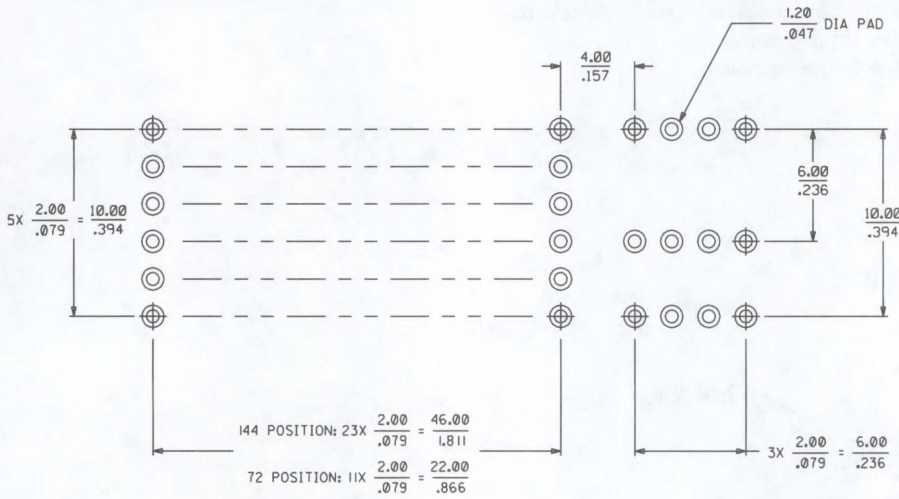
\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



# CROSS SECTION DETAIL

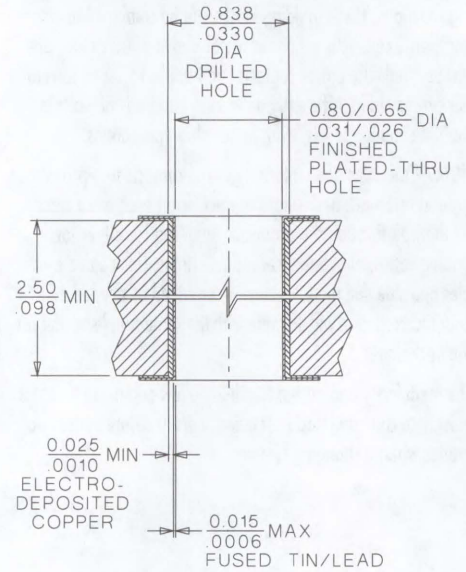


## TYPICAL BACKPLANE HOLE PATTERN



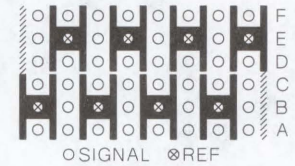
TYPICAL BACKPLANE PCB LAYOUT: COMPONENT SIDE  
(SIGNAL AND POWER SHOWN)

## HOLE PLATING DETAIL



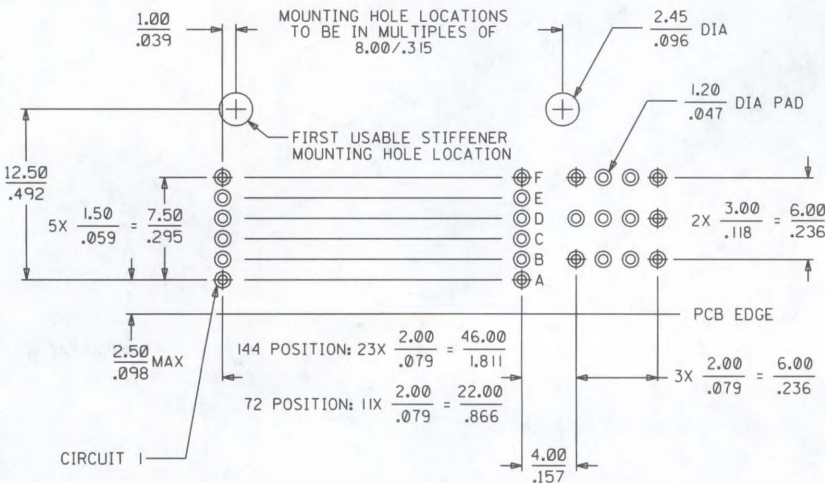
## HDM SHIELDING

### MINIMUM GROUND PATTERN



## CATALOG DRAWINGS (FOR REFERENCE ONLY)

## TYPICAL DAUGHTERBOARD HOLE PATTERN



TYPICAL DAUGHTERCARD PCB LAYOUT: COMPONENT SIDE  
(SIGNAL AND POWER SHOWN)

\* High Density Metric and HDM<sup>®</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

The strategies outlined below will help determine exactly what you need for any HDM or HDM<sup>PLUS</sup> application.

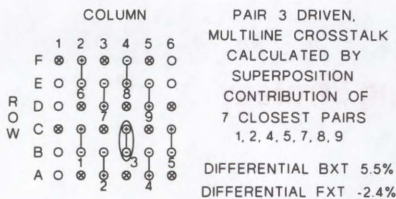
# molex® HDM\* Design Guide

## Shielding Strategy

### Differential Pairs Unshielded Preferred

#### HIGH DENSITY DIFFERENTIAL PAIRS

50 OHM SYSTEM IMPEDANCE  
ALL ADJACENT LINES DRIVEN  
300 ps RISE TIME (10% - 90%)

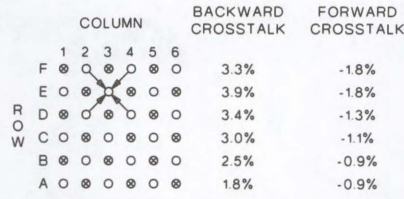


2 : 1 GROUND PATTERN, 50 SIGNALS PER INCH

### Single Ended System Benefits from Shielding

#### HDM SINGLE-ENDED

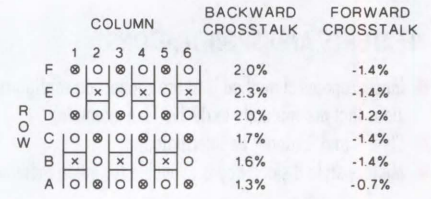
50 OHM SYSTEM IMPEDANCE  
ALL ADJACENT LINES DRIVEN  
1 ns RISE TIME (10% - 90%)



1 : 1 GROUND PATTERN, 38 SIGNALS PER INCH

#### HDM PLUS SINGLE-ENDED

50 OHM SYSTEM IMPEDANCE  
ALL ADJACENT LINES DRIVEN  
1 ns RISE TIME (10% - 90%)



1 : 1 GROUND PATTERN, 38 SIGNALS PER INCH

## FEATURES AND SPECIFICATIONS

### 15 Amperes per Power Blade

#### Sequenced Mating for Hot Plug

- 3 levels available
- LMS preferred and is the most popular

L= First mate, power return  
M= Second mate, precharge capacitors  
S= Third mate, primary voltage level

Use the following formula to determine the number of power modules needed for current carrying:

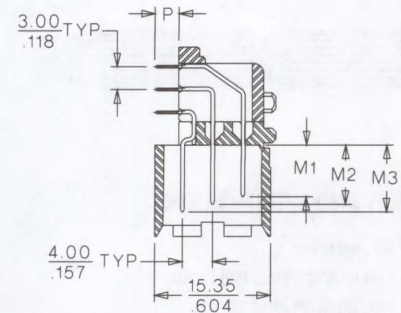
- Capacity example—200 Watts at 5V

$$\begin{aligned} \text{Volts} \times \text{Amps} &= \text{Watts} \\ 5\text{V} \times 40.0\text{A} &= 200 \text{ Watts} \\ 40.0\text{A} / 15.0\text{A} &= 2.66 \end{aligned}$$

Therefore, 3 power blades are recommended (plus 3 blades for power return)

Group power modules together or disperse depending on PCB layout

## Power Strategy



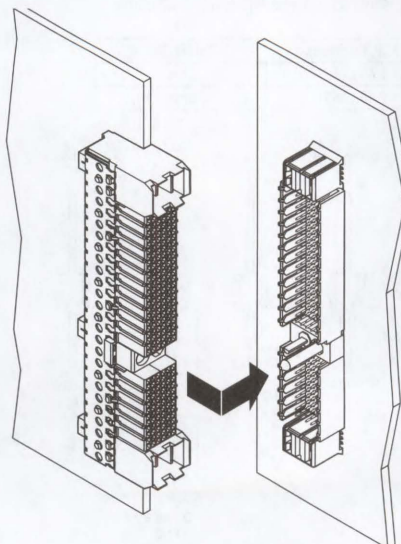
## FEATURES AND SPECIFICATIONS

For short connectors on small PCBs, no guidepins will be needed.

For larger PCBs, guidepins are recommended

- 1 in center of connector to minimize board bow
- 2 for larger boards
- More than 2 per board are never needed

Guidepins are especially recommended for heavy boards (power supplies, boards in metal EMI shields, etc.)



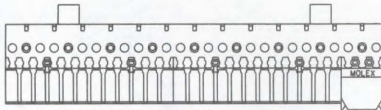
## Guidance Strategy

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

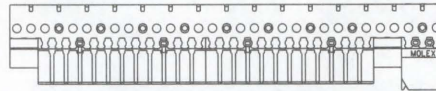


## FEATURES AND SPECIFICATIONS

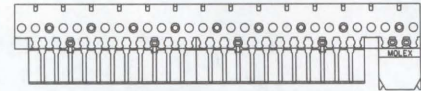
## Hold Down Strategy



Mounting ears behind stiffener give maximum interconnect density



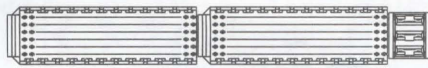
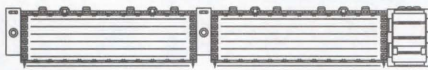
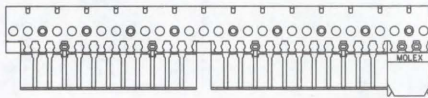
Guide blocks accept screws



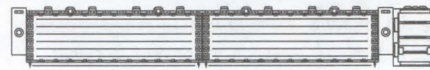
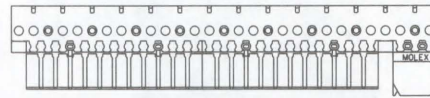
Short end caps accept screws for maximum available PCB real estate

## FEATURES AND SPECIFICATIONS

- Most economical method is to use connection configurations that are mutually exclusive (see example)
- Style A and B cannot be intermated
- Military style 8-sided key is available for guide module



Style A



Style B

## FEATURES AND SPECIFICATIONS

### Press-Fit Receptacles

- Requires an insertion press and tooling
- 0.55N max. insertion force per pin
- 1000 circuit connectors will need a press of 6 tons (12000 lb)
- Does not require soldering

### Solder Tail—5 Step Process

- Place connector
- Flip board over
- Inspect to ensure that all leads protrude
- Add screws
- Wave solder

### Solder Tail Length

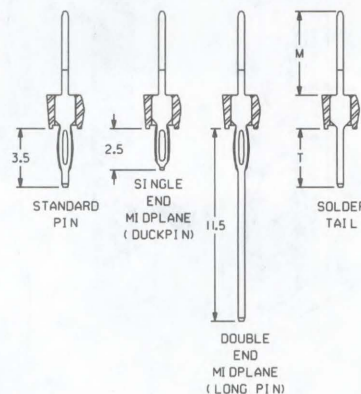
- As short as possible while still protruding

| PCB Thickness | Solder Tail |
|---------------|-------------|
| 1.60 (.062)   | 2mm         |
| 2.40 (.092)   | 3mm         |

## Press-Fit vs. Solder Tails

## FEATURES AND SPECIFICATIONS

- Mating end available in 3 lengths: 5, 5.5 and 6mm
- Solder tails available from 2.0 to 3.5mm in 0.5 increments
- Duckpins permit header insertion into both the front and rear of backplane in the same holes



## Available Pin Types

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

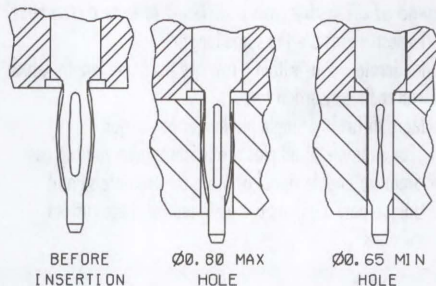
### Benefits

- Long experience
- Suitable for backplane pins and daughtercards
- Range of tail lengths available
- Field repairable (front side)
- Meets Bellcore requirements



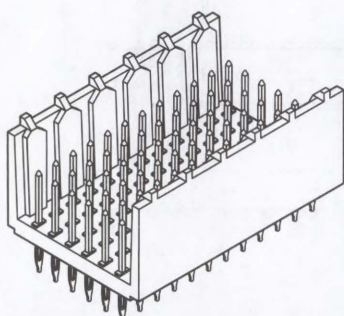
## HDM\* Design Guide

### Eye of the Needle Press-Fit

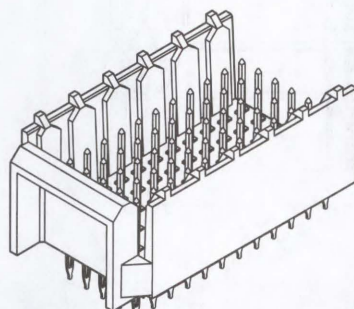


## FEATURES AND SPECIFICATIONS

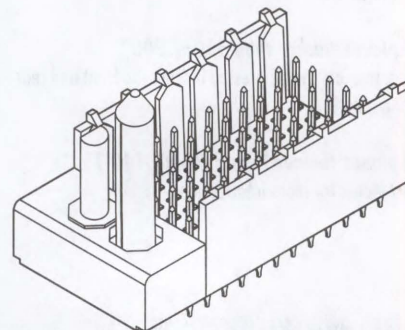
### Header Configuration Strategy



Open End Option



Closed End Option

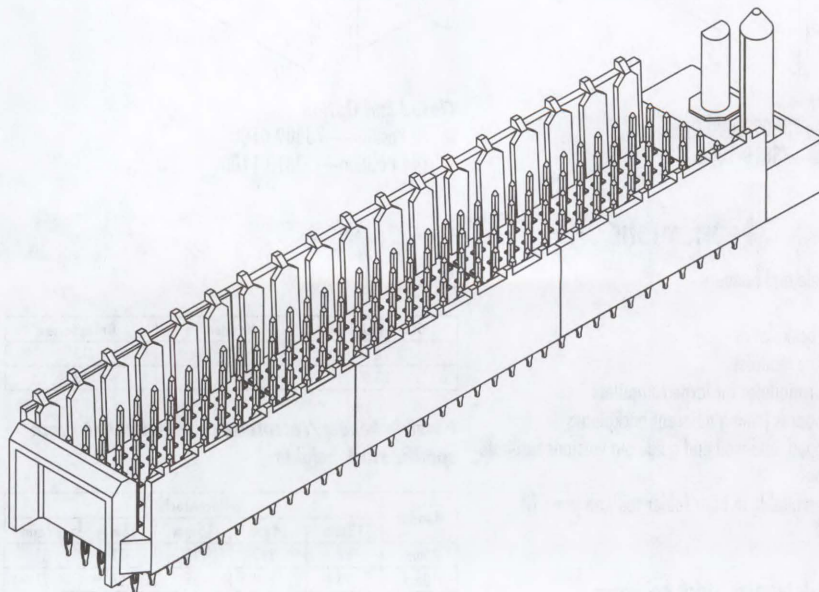


Guide Pin Option

| Header Option | Series No.                    |                              |                             |                               |                 |
|---------------|-------------------------------|------------------------------|-----------------------------|-------------------------------|-----------------|
|               | Standard Press-Fit 3.5mm Tail | Duckpin Press-Fit 2.5mm Tail | Solder Tail 2 to 3.5mm Tail | Longpin Press-Fit 11.5mm Tail | Rear Shroud     |
| Open          | 73642                         | 73797                        | 73942                       | 73800                         | 73809 and 73810 |
| Endwall       | 73643                         | 73798                        | 73943                       | 73801                         | 73809 and 73810 |
| Guide Pin     | 73644                         | 73799                        | 73944                       | 73802                         | 73809 and 73810 |

### Place together to create one assembly, keeping in mind the following features and recommendations:

- The endwall and standard press-fit options are recommended wherever possible
- The endwall 3 wall box is stronger than the 2 wall box and protects pins
- Use Duckpin press-fit for midplanes thicker than 5mm to press in headers from both sides
- Use solder tail version for motherboards or backplanes thinner than 2.13mm (.084")



\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Pin termination selection

- Press-fit price is equal to solder tail
- Solder tail preferred for motherboards; press-fit for backplanes

### Mating length strategy

- Generally all 5mm is specified
- Use power modules for premating pins
- 5, 5.5, and 6.0mm signal pins are available

### Special pinout within one header is possible—

#### Range of difficulty (more difficult means extra cost)

- Easiest = Pins are the same length
- Moderate = Pins within a row are the same length, which can reduce insertion force
- More difficult = Single pin longer or shorter (For example, if all pins are 5.5mm, then you can use 5mm for enable signal or 6mm for premate signal)
- Unique part numbers are assigned for these custom versions

## Backplane Strategy

## FEATURES AND SPECIFICATIONS

### For backplanes 3.6 to 4.4mm thick

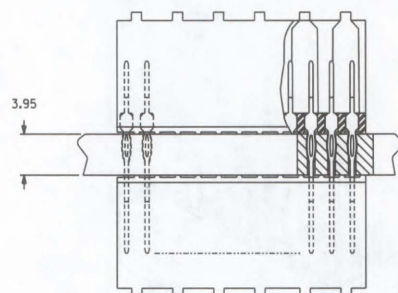
- Long pins from the front and plastic shrouds on the rear offer a good solution
- Rear shrouds can be open, endwall, guide pin or cable connector shrouds

### For backplanes thicker than 5mm (.200")

- Duckpin headers can be pressed in from the front and rear (sharing holes)

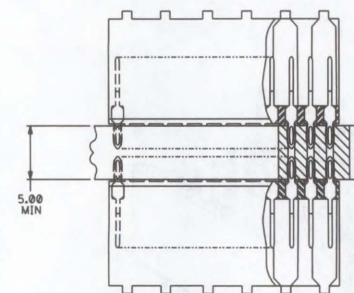
### For backplanes thinner than 3.6mm (.140")

- Contact Molex for more information



Longpin

## Midplane Design Strategy

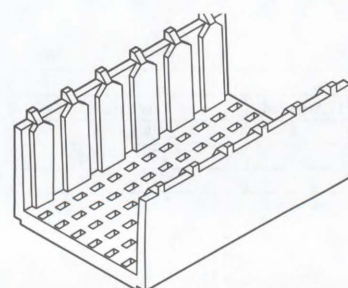


Duckpin

## FEATURES AND SPECIFICATIONS

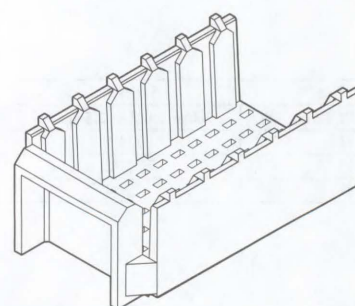
### Shrouds press on to pins

- Protruding from backplane to enable rear plugging of boards or cables



### Open End Option

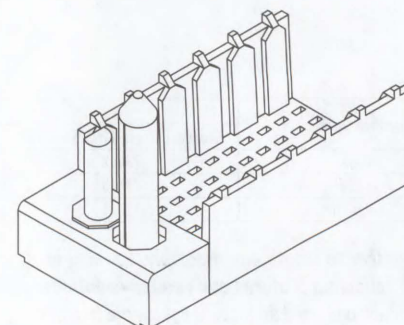
- 72 Position—73809-0000
- 144 Position—73810-1000



### Closed End Option

- 72 Position—73809-0100
- 144 Position—73810-1100

## Rear Shrouds



### Guide Pin Option

- 72 Position—73809-02XX
- 144 Position—73810-12XX

## FEATURES AND SPECIFICATIONS

- Vertical female and headers

### Used for:

- Parallel backplanes
- Mezzanine Modules
- Processor modules for large computers
- Bridge boards joining adjacent backplanes
- Headers in open, end-wall and guide pin versions facilitate "blind-mating"
- Receptacles available in both solder tail and press-fit termination

### See tables to determine stack height—

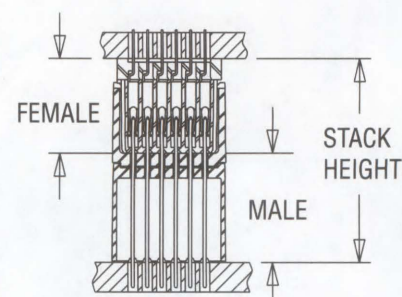
### Header

| Stack Height | Header | Receptacle |
|--------------|--------|------------|
| 28           | 15     | 13         |
| 23           | 10     | 13         |

### Possible header/receptacle combinations to reach specific stack heights

| Header | Receptacle |      |      |      |      |
|--------|------------|------|------|------|------|
|        | 13mm       | 14mm | 15mm | 16mm | 17mm |
| 15mm   | 28         | 29   | 30   | 31   | 32   |
| 10mm   | 23         | 24   | 25   | 26   | 27   |
| 6mm    | 19         | 20   | 21   | 22   | 23   |
| 2mm    | 15         | 16   | 17   | 18   | 19   |

## HDM Stackers



\* High Density Metric and HDM<sup>®</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- High density 2mm metric connector in the same form factor as Futurebus
- 6-row connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density/high-speed applications
- 2 daughterboard connector styles, HDM and HDM<sup>PLUS</sup>\* can be used interchangeably with the standard header module
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Tail lengths available in 0.5mm increments to optimize PCB thickness
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73642, 73643 and 73644; 73797, 73798 and 73799; 73800, 73801 and 73802; 73942, 73943 and 73944; 74349 and 74428

Designed In: Millimeters

### Electrical

Voltage: 1000V

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Copper Alloy per C72500

Plating: 30μ" Gold with 300μ" Tin/Lead

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

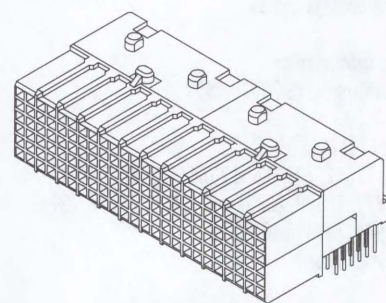
HDM\*

Board-to-Board

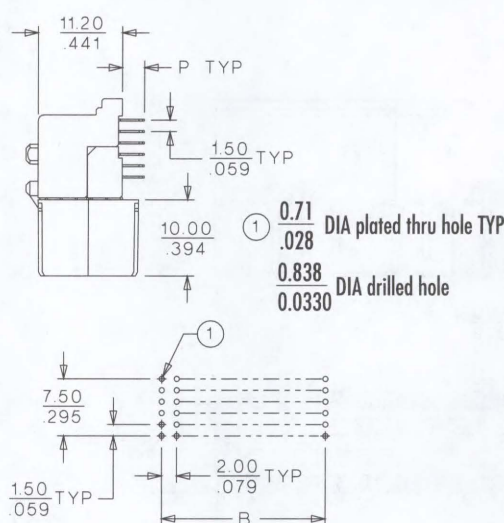
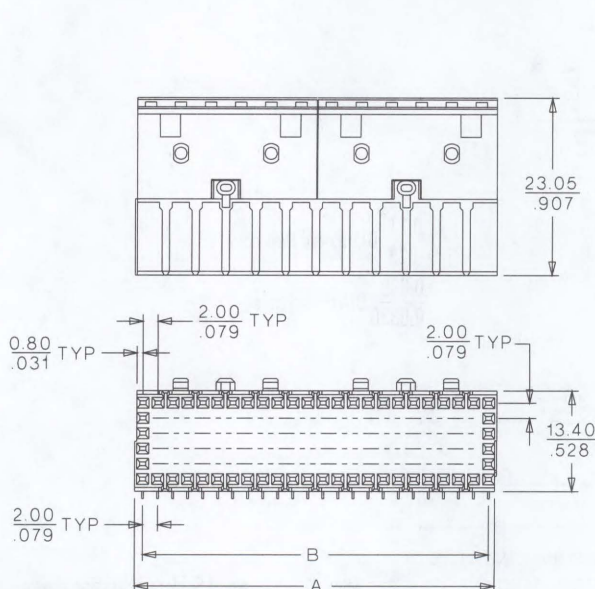
Daughterboard Receptacle

73632

Right Angle  
Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
 RECOMMENDED PCB THICKNESS: 1.60 (.063) MIN

Note: Solder tail version shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | P           |
| 72       | 73632-0100 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 2.00 (.079) |
|          | 73632-0110 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 2.50 (.098) |
|          | 73632-0120 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 3.00 (.118) |
|          | 73632-0130 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 3.50 (.138) |
|          | 73632-0140 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 4.00 (.157) |
|          | 73632-0330 | Press-Fit   | 24.18 (.952)  | 22.00 (.866)  | 3.50 (.138) |
| 144      | 73632-1100 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 2.00 (.079) |
|          | 73632-1110 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 2.50 (.098) |
|          | 73632-1120 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 3.00 (.118) |
|          | 73632-1130 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 3.50 (.138) |
|          | 73632-1140 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 4.00 (.157) |
|          | 73632-1330 | Press-Fit   | 48.18 (1.897) | 46.00 (1.811) | 3.50 (.138) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

### Application Note: Connectors are Ordered as Part of an Assembly, Not Individually

The HDM and HDM<sup>PLUS</sup> daughtercard connectors are composed of modules. The complete connector with a number of modules, stiffener and hold-downs is given a specific part number so that a user only needs to order one connector. We show the individual modules in this catalog, but they are always delivered as completed connectors on a stiffener. On the customer print for the stiffener is the complete PCB footprint showing holes for signal and power contacts, plus appropriate mounting hold-down features. Most customers use solder-to-board versions of the RA receptacles, but press-fit RA receptacles are an option.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Similar features as the 73632 unshielded version
- 6-row 2mm connector provides 25 shielded contacts per linear centimeter (over 63 real signals per inch)
- Space-efficient contact shields reduce crosstalk while leveraging the number of usable signal pins
- HDM<sup>PLUS</sup> allows rise times under 1nsec with 20 real signals per centimeter
- Shields significantly increase signal integrity (electrical test reports and SPICE files available) 50Ω impedance
- Mates with standard backplane male and shield contacts mate before signal contacts
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73642, 73643 and 73644; 73797, 73798 and 73799; 73800, 73801 and 73802; 73942, 73943 and 73944; 74349 and 74428

Designed In: Millimeters

### Electrical

Voltage: 600V

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 600V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.35N typical

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Copper Alloy per C72500

Plating: 30μ" Gold with 300μ" Tin/Lead

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM<sup>PLUS</sup>\*

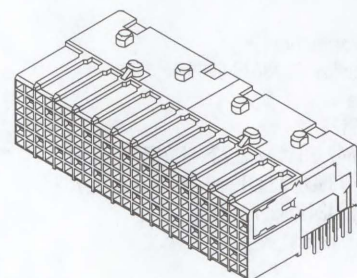
Board-to-Board

Daughterboard Receptacle

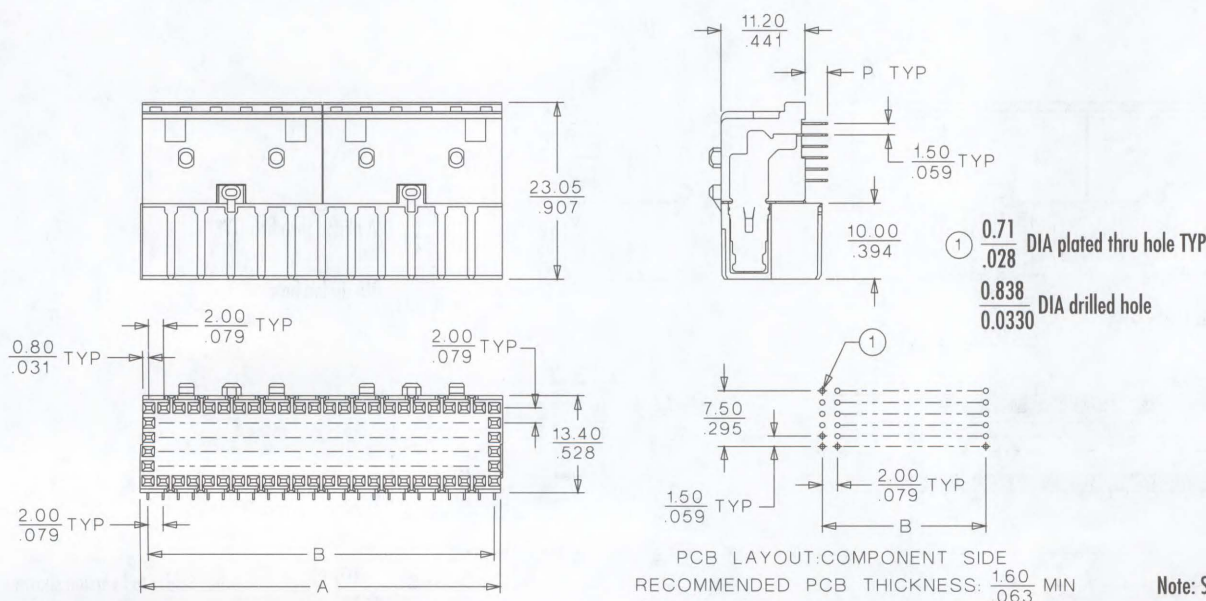
73632

Right Angle

Shielded Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | P           |
| 72       | 73632-0000 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 2.00 (.079) |
|          | 73632-0010 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 2.50 (.098) |
|          | 73632-0020 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 3.00 (.118) |
|          | 73632-0030 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 3.50 (.138) |
|          | 73632-0040 | Solder Tail | 24.18 (.952)  | 22.00 (.866)  | 4.00 (.157) |
|          | 73632-0230 | Press-Fit   | 24.18 (.952)  | 22.00 (.866)  | 3.50 (.138) |
| 144      | 73632-1000 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 2.00 (.079) |
|          | 73632-1010 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 2.50 (.098) |
|          | 73632-1020 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 3.00 (.118) |
|          | 73632-1030 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 3.50 (.138) |
|          | 73632-1040 | Solder Tail | 48.18 (1.897) | 46.00 (1.811) | 4.00 (.157) |
|          | 73632-1230 | Press-Fit   | 48.18 (1.897) | 46.00 (1.811) | 3.50 (.138) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

### Application Note: Connectors are Ordered as Part of an Assembly, Not Individually

The HDM and HDM<sup>PLUS</sup> daughtercard connectors are composed of modules. The complete connector with a number of modules, stiffener and hold-downs is given a specific part number so that a user only needs to order one connector. We show the individual modules in this catalog, but they are always delivered as completed connectors on a stiffener. On the customer print for the stiffener is the complete PCB footprint showing holes for signal and power contacts, plus appropriate mounting hold-down features. Most customers use solder-to-board versions of the RA receptacles, but press-fit RA receptacles are an option.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 15A per blade current carrying capacity
- Female on backplane for safety
- 3 mating lengths for live insertion
- 12mm module can be distributed between signal modules as needed
- Integral stiffener combines signal, power and guidance modules
- Metric connector in Futurebus form factor
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73651-1998

Packaging: Tube

UL File No.: E29179

Mates With: 73656

Designed In: Millimeters

### Electrical

Current: 15.0A

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 55N max. per press-fit pin

Retention Force: 15N min. per press-fit pin

Mating Force: 2.5N max. per contact

Unmating Force: 0.15N min.

Normal Force: 1.0N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Blades—0.5mm thick Copper

Receptacle—0.4mm Beryllium Copper Alloy

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM\*

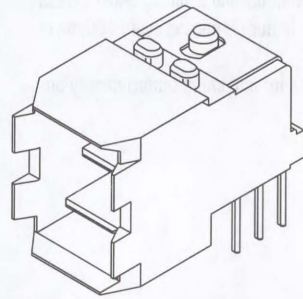
Board-to-Board

Daughterboard Power Module

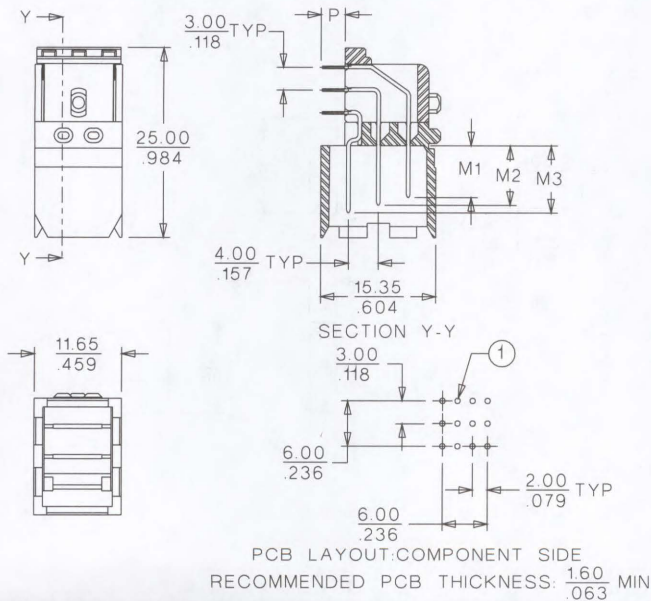
73651

Right Angle

3-Blade Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



- ① 0.71  
.028 DIA plated thru hole TYP
- 0.838  
0.0330 DIA drilled hole

Note: Solder tail version shown

## ORDERING INFORMATION AND DIMENSIONS

| Module                     | Termination | Order No.  | Dimension P   |
|----------------------------|-------------|------------|---------------|
| Daughter Card Power Module | Solder Tail | 73651-0033 | 2.00 (.079)   |
|                            | Solder Tail | 73651-0133 | 2.50 (.098)   |
|                            | Solder Tail | 73651-0233 | 3.00 (.118)   |
|                            | Solder Tail | 73651-0333 | 3.50 (.138)   |
|                            | Solder Tail | 73651-0433 | 4.00 (.157)   |
|                            | Solder Tail | 73651-0XXX | Contact Molex |
|                            | Press-Fit   | 73651-1XXX | 3.50 (.138)   |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

Note: The versions listed here have 3 mating levels: M1-short, M2-medium and M3-long, please contact Molex for more information

**Application Note: Connectors are Ordered as Part of an Assembly, Not Individually**

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## FEATURES AND SPECIFICATIONS

### Features and Benefits

#### Guidance Module

- In combination with guide pin headers, provides  $\pm 1.90\text{mm}$  of robust mating gathering to ease mating of large modules to backplanes
- Guidance modules must be placed next to a signal module to mate with a guide pin header

#### PCB Hold-Down

- Accepts screws from bottom side to positively lock the connector to the board, providing a stiffening function to the daughtercard assembly and avoiding solder defects
- One PCB hold-down feature is needed every 100mm of connector length
- Fits behind connector for maximum contact density on the edge

#### End Blocks

- Mount at ends of connector to shield exposed ground contacts and to provide additional mating lead-in when mating to the header
- The short end cap mates with the end wall header
- End blocks accept screws from the bottom for additional hold-down

#### Reference Information

Product Specification: PS-73670-9999

UL File No.: E29179

Designed In: Millimeters

#### Physical

Housing:

Polarizer and End Caps—Liquid crystal polymer

Hold-Down—High-temperature nylon

Operating Temperature:  $-55$  to  $+105^{\circ}\text{C}$

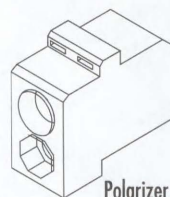


2.00mm (.079") Pitch

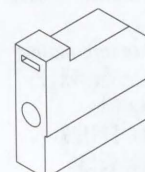
HDM\*

Board-to-Board  
Daughtercard Guidance and  
Mounting Blocks

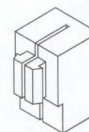
73660/73665/73666



Polarizer

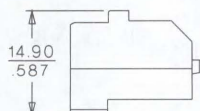
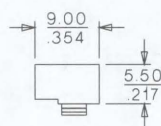
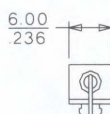
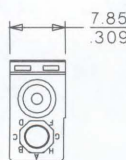
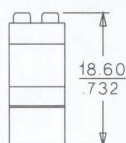


End Cap

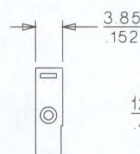
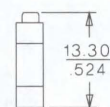


Mounting Ear

### POLARIZER AND PCB HOLD-DOWN



### END CAPS



### ORDERING INFORMATION

| Description      | Order No.  | Key Direction |
|------------------|------------|---------------|
| Guidance Module  | 73660-8000 | None          |
|                  | 73660-0000 | A             |
|                  | 73660-1000 | B             |
|                  | 73660-2000 | C             |
|                  | 73660-3000 | D             |
|                  | 73660-4000 | E             |
|                  | 73660-5000 | F             |
|                  | 73660-6000 | G             |
|                  | 73660-7000 | H             |
| Hold-Down Module | 73665-0000 | N/A           |
| Short End Cap    | 73666-0000 | N/A           |

#### Application Note: Connectors are Ordered as Part of an Assembly, Not Individually

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\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- High-density 2mm, 6-row connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density/high-speed applications
- HDM header modules can mate interchangeably with either shielded (HDM) or unshielded (HDM<sup>PLUS</sup>\*) receptacle modules
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Eye of the needle press-fit for high reliability
- 3 mating pin lengths available for custom configurations
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

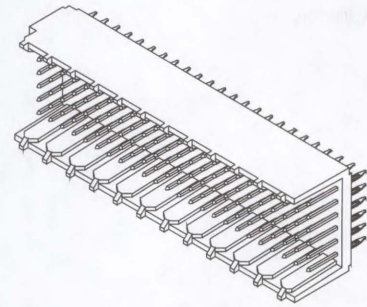
Operating Temperature: -55 to +105°C

**molex®** 2.00mm (.079") Pitch  
HDM\*

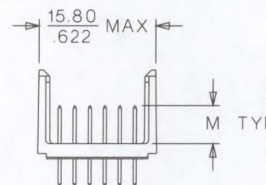
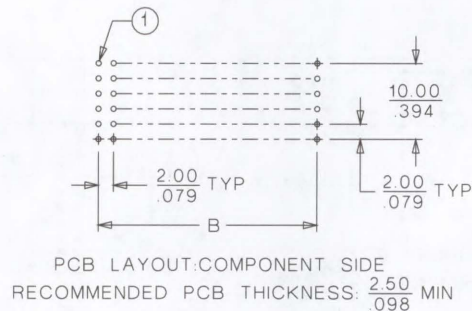
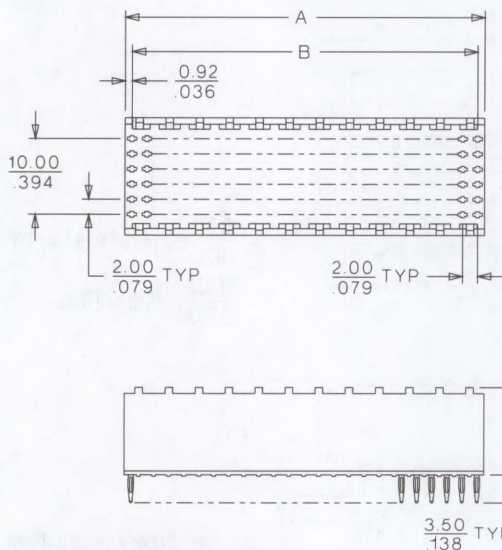
**Board-to-Board  
Backplane Header**

**73642/73942**

**Vertical  
Open End Option**



## CATALOG DRAWING (FOR REFERENCE ONLY)



- ① 0.71  
.028 DIA plated thru hole TYP
- 0.838  
0.0330 DIA drilled hole

Note: Press-fit version shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination        | Dimension    |              |             |             |
|----------|------------|--------------------|--------------|--------------|-------------|-------------|
|          |            |                    | A            | B            | M           | P           |
| 72       | 73942-0000 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | 2.00 (.079) |
|          | 73942-0200 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | 2.00 (.079) |
|          | 73942-2000 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | 2.50 (.098) |
|          | 73942-2200 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | 2.50 (.098) |
|          | 73942-4000 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | 3.00 (.118) |
|          | 73942-4200 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | 3.00 (.118) |
|          | 73942-6000 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | 3.50 (.138) |
|          | 73942-6200 | Solder Tail        | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | 3.50 (.138) |
|          | 73642-0000 | Standard Press-Fit | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | NA          |
|          | 73642-0200 | Standard Press-Fit | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | NA          |
| 72       | 73642-2000 | Tin/Lead Press-Fit | 23.84 (.939) | 22.00 (.866) | 5.00 (.197) | NA          |
|          | 73642-2200 | Tin/Lead Press-Fit | 23.84 (.939) | 22.00 (.866) | 6.00 (.236) | NA          |

| Circuits | Order No.         | Termination        | Dimension     |               |             |             |
|----------|-------------------|--------------------|---------------|---------------|-------------|-------------|
|          |                   |                    | A             | B             | M           | P           |
| 144      | 73942-1000        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | 2.00 (.079) |
|          | 73942-1200        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | 2.00 (.079) |
|          | 73942-3000        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | 2.50 (.098) |
|          | 73942-3200        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | 2.50 (.098) |
|          | 73942-5000        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | 3.00 (.118) |
|          | 73942-5200        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | 3.00 (.118) |
|          | 73942-7000        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | 3.50 (.138) |
|          | 73942-7200        | Solder Tail        | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | 3.50 (.138) |
|          | 73642-1000        | Standard Press-Fit | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | NA          |
|          | 73642-1200        | Standard Press-Fit | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | NA          |
| 144      | 73642-3000        | Tin/Lead Press-Fit | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | NA          |
|          | 73642-3200        | Tin/Lead Press-Fit | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | NA          |
|          | Custom 73650-XXXX | Custom             | Custom        | Custom        | Custom      | Custom      |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press-fit for high reliability
- End wall improves mating guidance and increases strength for the end of connectors
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

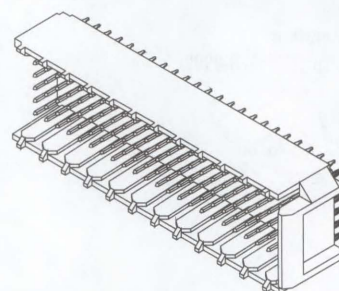
Operating Temperature: -55 to +105°C



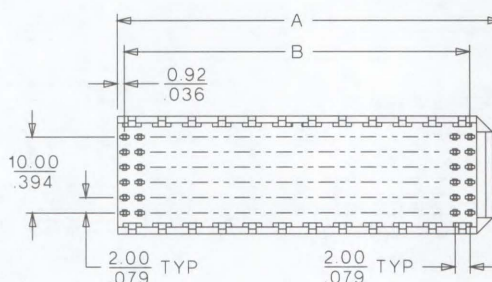
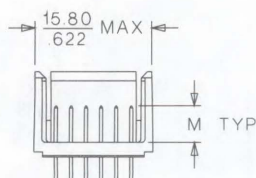
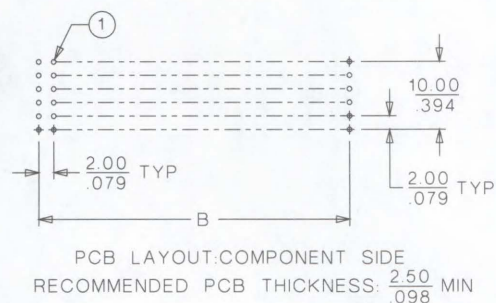
## 2.00mm (.079") Pitch HDM\* Board-to-Board Backplane Header

73643/73943

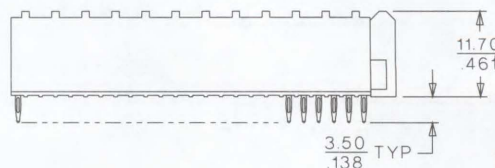
### Vertical Closed End Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



- ① 0.71  
.028 DIA plated thru hole TYP  
0.838  
0.0330 DIA drilled hole



Note: Press-fit version shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination        | Dimension     |              |             |             |
|----------|------------|--------------------|---------------|--------------|-------------|-------------|
|          |            |                    | A             | B            | M           | P           |
| 72       | 73943-0000 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | 2.00 (.079) |
|          | 73943-0200 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | 2.00 (.079) |
|          | 73943-2000 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | 2.50 (.098) |
|          | 73943-2200 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | 2.50 (.098) |
|          | 73943-4000 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | 3.00 (.118) |
|          | 73943-4200 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | 3.00 (.118) |
|          | 73943-6000 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | 3.50 (.138) |
|          | 73943-6200 | Solder Tail        | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | 3.50 (.138) |
|          | 73643-0000 | Standard Press-Fit | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | NA          |
|          | 73643-0200 | Standard Press-Fit | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | NA          |
|          | 73643-2000 | Tin/Lead Press-Fit | 27.60 (1.087) | 22.00 (.866) | 5.00 (.197) | NA          |
|          | 73643-2200 | Tin/Lead Press-Fit | 27.60 (1.087) | 22.00 (.866) | 6.00 (.236) | NA          |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

| Circuits | Order No.  | Termination        | Dimension     |               |             |             |
|----------|------------|--------------------|---------------|---------------|-------------|-------------|
|          |            |                    | A             | B             | M           | P           |
| 144      | 73943-1000 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | 2.00 (.079) |
|          | 73943-1200 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | 2.00 (.079) |
|          | 73943-3000 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | 2.50 (.098) |
|          | 73943-3200 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | 2.50 (.098) |
|          | 73943-5000 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | 3.00 (.118) |
|          | 73943-5200 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | 3.00 (.118) |
|          | 73943-7000 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | 3.50 (.138) |
|          | 73943-7200 | Solder Tail        | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | 3.50 (.138) |
|          | 73643-1000 | Standard Press-Fit | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | NA          |
|          | 73643-1200 | Standard Press-Fit | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | NA          |
|          | 73643-3000 | Tin/Lead Press-Fit | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | NA          |
|          | 73643-3200 | Tin/Lead Press-Fit | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) | NA          |
| Custom   | 73650-XXXX | Custom             | Custom        | Custom        | Custom      | Custom      |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press-fit for high reliability
- End wall improves mating guidance and increases strength for the end of connectors
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

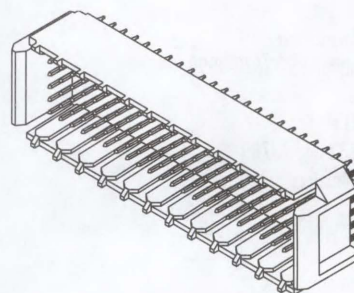
HDM\*

Board-to-Board

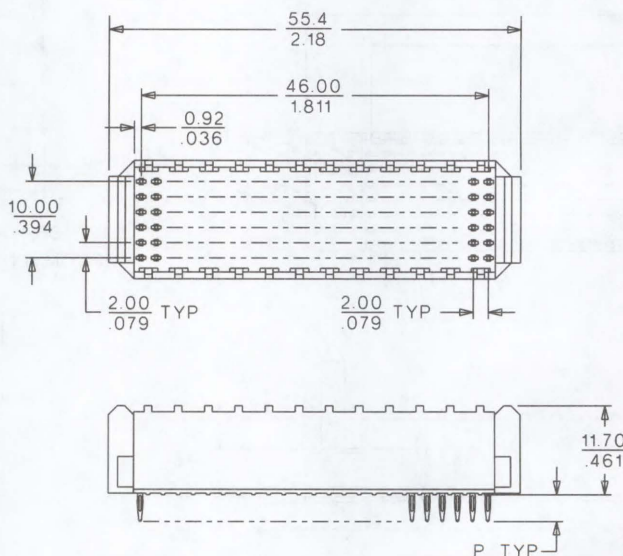
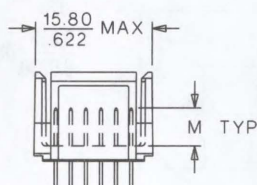
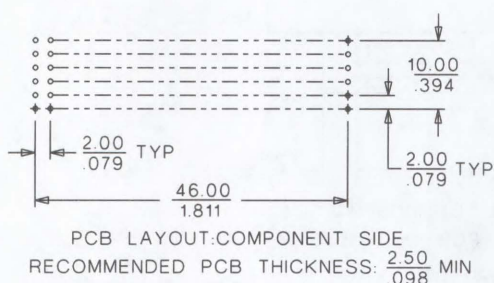
Backplane Header

74349

Vertical  
Double End Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



Note: Press-fit version shown

## ORDERING INFORMATION AND DIMENSIONS

| Order No.       |                 |                 |                 |                 | Dimension   |
|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|
| Press-Fit Tail  | Solder Tail     |                 |                 |                 | M           |
| P = 3.50 (.138) | P = 2.00 (.079) | P = 2.50 (.098) | P = 3.00 (.118) | P = 3.50 (.138) |             |
| 74349-0010      | 74349-1013      | 74349-1012      | 74349-1011      | 74349-1010      | 5.00 (.197) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press-fit for high reliability
- Metal hex key offers 8 coding combinations (64 with 2 keys) and makes metallic sound when card is in wrong slot
- Guide pin provides  $\pm 1.9\text{mm}$  of capture prior to plastic mating
- Can use 1 guide pin in center of connector or on both ends
- Guide pin module attached to header enhances accuracy and reduces parts count
- Surface Mount Compatible

## Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

## Electrical

Current: 1.0A

Contact Resistance:

| Row             | A  | B  | C  | D  | E  | F  |
|-----------------|----|----|----|----|----|----|
| m $\Omega$ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 M $\Omega$  min.

## Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

## Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30 $\mu$  Gold

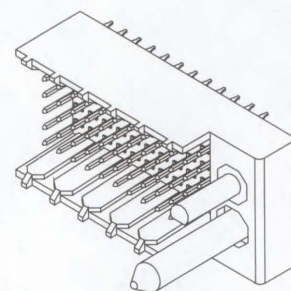
Operating Temperature: -55 to +105°C



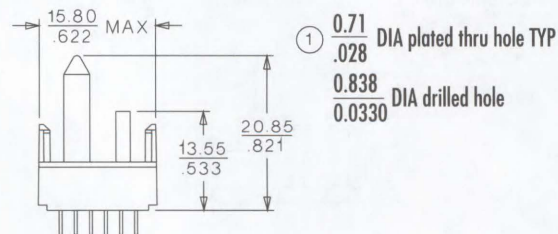
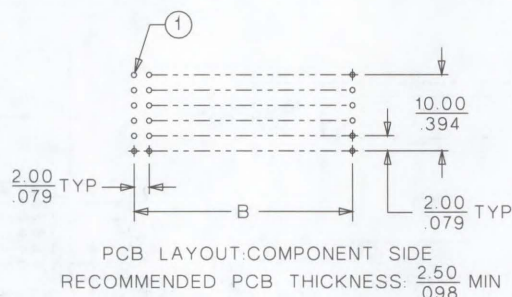
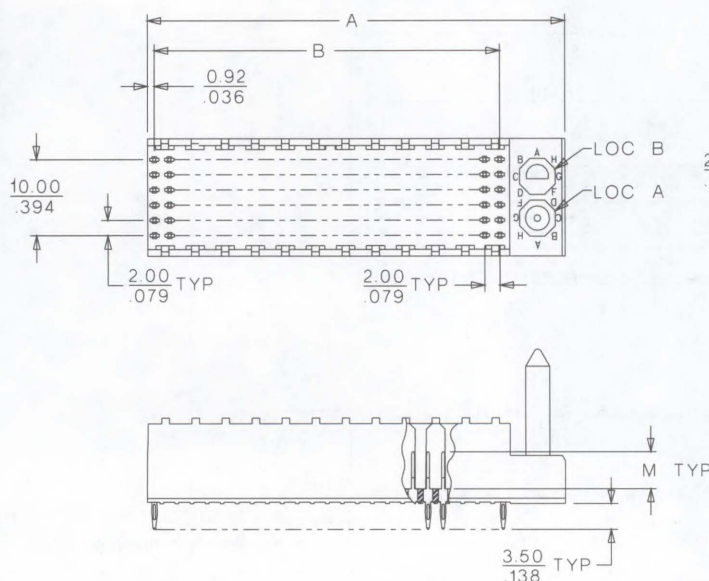
# 2.00mm (.079") Pitch HDM\* Board-to-Board Backplane Header

73644

## Vertical Press-Fit Guide Pin Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                                |                                          |                                         |                                         | Termination        | Dimension     |               |             |
|----------|------------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|--------------------|---------------|---------------|-------------|
|          | Location B = Pin<br>Location A = No Code | Location B = No Code<br>Location A = Pin | Location B = Pin<br>Location A = Code A | Location B = Code A<br>Location A = Pin |                    | A             | B             | M           |
| 72       | 73644-0016                               | 73644-0017                               | 73644-0000                              | 73644-0001                              | Standard Press-Fit | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) |
|          | 73644-0216                               | 73644-0217                               | 73644-0200                              | 73644-0201                              | Standard Press-Fit | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) |
|          | 73644-2016                               | 73644-2017                               | 73644-2000                              | 73644-2001                              | Tin/Lead Press-Fit | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) |
|          | 73644-2216                               | 73644-2217                               | 73644-2200                              | 73644-2201                              | Tin/Lead Press-Fit | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) |
| 144      | 73644-1016                               | 73644-1017                               | 73644-1000                              | 73644-1001                              | Standard Press-Fit | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) |
|          | 73644-1216                               | 73644-1217                               | 73644-1200                              | 73644-1201                              | Standard Press-Fit | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) |
|          | 73644-3016                               | 73644-3017                               | 73644-3000                              | 73644-3001                              | Tin/Lead Press-Fit | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) |
|          | 73644-3216                               | 73644-3217                               | 73644-3200                              | 73644-3201                              | Tin/Lead Press-Fit | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) |
| Custom   | 73650-XXXX                               | 73650-XXXX                               | 73650-XXXX                              | 73650-XXXX                              | Custom             | Custom        | Custom        | Custom      |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.

Note: Additional key combinations and locations are available, please contact Molex

Note: Tin/Lead press-fit zones are used for bare Copper or Gold plated PCBs

Note: The guide pin must mate with the top position on the mating receptacle to clear the board edge. Therefore, if guidepin headers are used on each end of a header array, you should select one with the pin in location B and the second with the guidepin in location A.

## Application Note

The backplane headers are delivered as modules and are press-fitted into the backplane. This allows maximum flexibility with minimum inventory. Note that the guidepins are an integral part of the headers. This also means that you may have different part numbers for left-handed and right-handed headers. You must consult the customer print to determine the appropriate part number for various combinations of guide pin locations (2) and coding pin orientations (8).



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press fit for high reliability
- Metal hex key offers 8 coding combinations (64 with 2 keys) and makes metallic sound when card is in wrong slot
- Guide pin provides  $\pm 1.9$ mm of capture prior to plastic mating
- Can use 1 guide pin in center of connector or on both ends
- Guide pin module attached to header enhances accuracy and reduces parts count
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row             | A  | B  | C  | D  | E  | F  |
|-----------------|----|----|----|----|----|----|
| m $\Omega$ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 M $\Omega$  min.

### Mechanical

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30 $\mu$ m Gold

Operating Temperature: -55 to +105°C



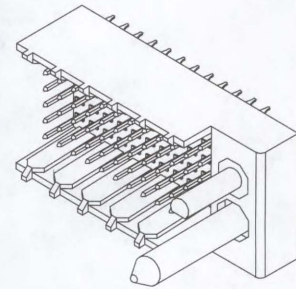
2.00mm (.079") Pitch

HDM\*

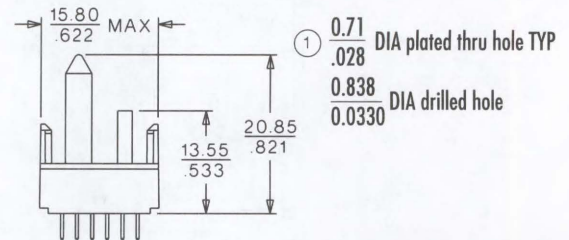
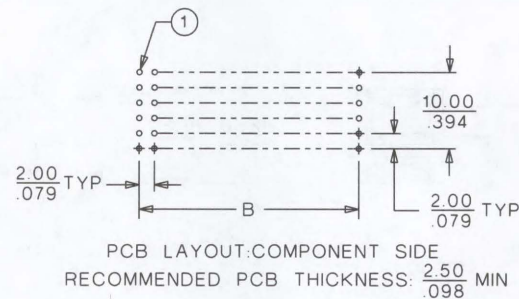
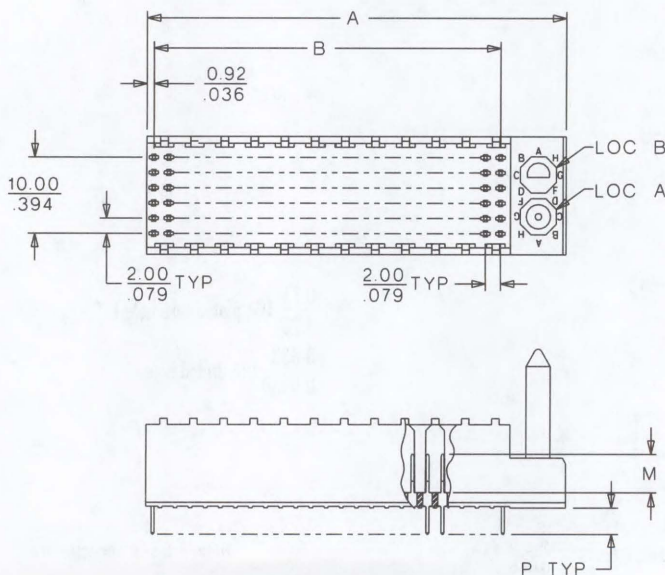
Board-to-Board  
Backplane Header

73944

Vertical  
Solder Tail Guide Pin Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



Note: Solder tail version shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                                |                                          |                                         |                                         | Termination | Dimension     |               |             |                          |
|----------|------------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-------------|---------------|---------------|-------------|--------------------------|
|          | Location B = Pin<br>Location A = No Code | Location B = No Code<br>Location A = Pin | Location B = Pin<br>Location A = Code A | Location B = Code A<br>Location A = Pin |             | A             | B             | M           | Tail Length <sup>†</sup> |
| 72       | 73944-0016                               | 73944-0017                               | 73944-0000                              | 73944-0001                              | Solder Tail | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) | 2.00 (.079)              |
|          | 73944-0216                               | 73944-0217                               | 73944-0200                              | 73944-0201                              | Solder Tail | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) | 2.00 (.079)              |
|          | 73944-6016                               | 73944-6017                               | 73944-6000                              | 73944-6001                              | Solder Tail | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) | 3.50 (.138)              |
|          | 73944-6216                               | 73944-6217                               | 73944-6200                              | 73944-6201                              | Solder Tail | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) | 3.50 (.138)              |
|          | 73944-1016                               | 73944-1017                               | 73944-1000                              | 73944-1001                              | Solder Tail | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) | 2.00 (.079)              |
| 144      | 73944-1216                               | 73944-1217                               | 73944-1200                              | 73944-1201                              | Solder Tail | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) | 2.00 (.079)              |
|          | 73944-7016                               | 73944-7017                               | 73944-7000                              | 73944-7001                              | Solder Tail | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) | 3.50 (.138)              |
|          | 73944-7216                               | 73944-7217                               | 73944-7200                              | 73944-7201                              | Solder Tail | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) | 3.50 (.138)              |
|          | Custom                                   | 73651-XXXX                               | 73651-XXXX                              | 73651-XXXX                              | Solder Tail | Custom        | Custom        | Custom      | Custom                   |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.

<sup>†</sup> Other solder tail lengths available: 2.5 and 3.00mm

Note: Additional key combinations and locations are available, please contact Molex

Note: The guide pin must mate with the top position on the mating receptacle to clear the board edge. Therefore, if guidepin headers are used on each end of a header array, you should select one with the pin in location B and the second with the guidepin in location A.

### Application Note

The backplane headers are delivered as modules and are press-fitted into the backplane. This allows maximum flexibility with minimum inventory. Note that the guidepins are an integral part of the headers. This also means that you may have different part numbers for left-handed and right-handed headers. You must consult the customer print to determine the appropriate part number for various combinations of guide pin locations (2) and coding pin orientations (8).



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 15A per blade current carrying capacity
- Press-fit on backplane eliminates soldering
- Female on backplane for safety
- 12mm module can be distributed between signal modules as needed
- Metric connector in Futurebus form factor
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73651-1998

Packaging: Tube

UL File No.: E29179

Mates With: 73651

Designed In: Millimeters

### Electrical

Current: 15.0A

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 M $\Omega$  min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 2.5N max. per contact

Unmating Force: 0.15N min.

Normal Force: 1.0N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: 0.4mm Beryllium Copper

Plating: 30 $\mu$ " Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM\*

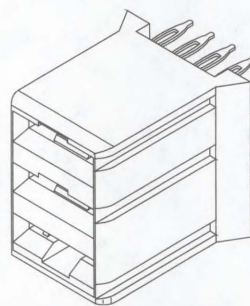
Board-to-Board

Backplane Power Module

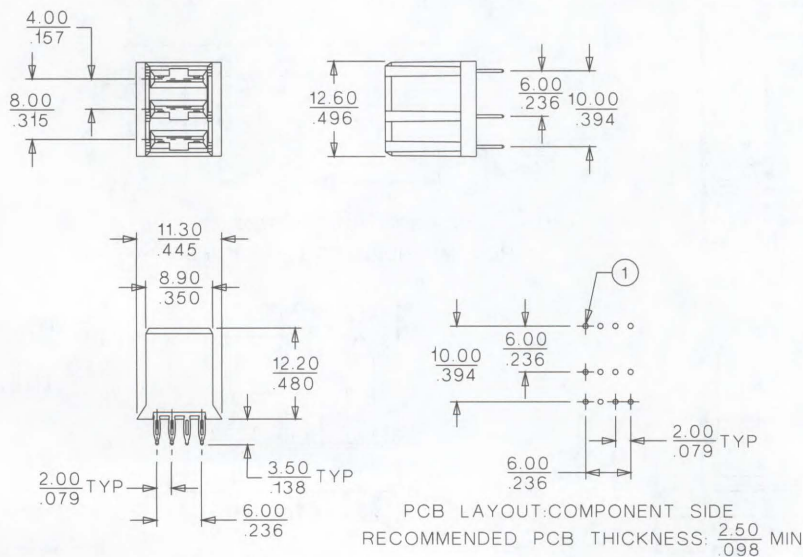
73656/73659

Vertical

Power Receptacle



## CATALOG DRAWING (FOR REFERENCE ONLY)



- ① 0.71 DIA plated thru hole TYP  
0.028  
0.838 DIA drilled hole  
0.0330

Note: Press-fit version shown

## ORDERING INFORMATION

| Module                 | Order No.  | Termination | Tail Length |
|------------------------|------------|-------------|-------------|
| Backplane Power Module | 73656-0000 | Press-Fit   | 3.50 (.138) |
| Midplane Power Module  | 73659-0001 | Solder Tail | 2.00 (.079) |
| Midplane Power Module  | 73659-0002 | Solder Tail | 2.50 (.098) |
| Midplane Power Module  | 73659-0003 | Solder Tail | 3.00 (.118) |
| Midplane Power Module  | 73659-0004 | Solder Tail | 3.50 (.138) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Pins pass through backplane to allow rear side mating of cards or cables
- Gold contacts at both ends for excellent mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM\*

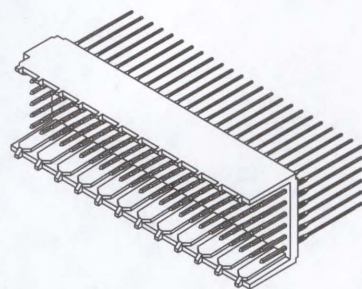
Board-to-Board

Midplane Header

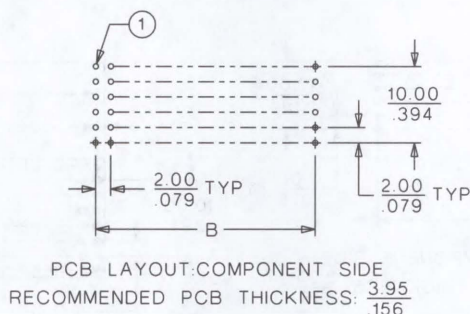
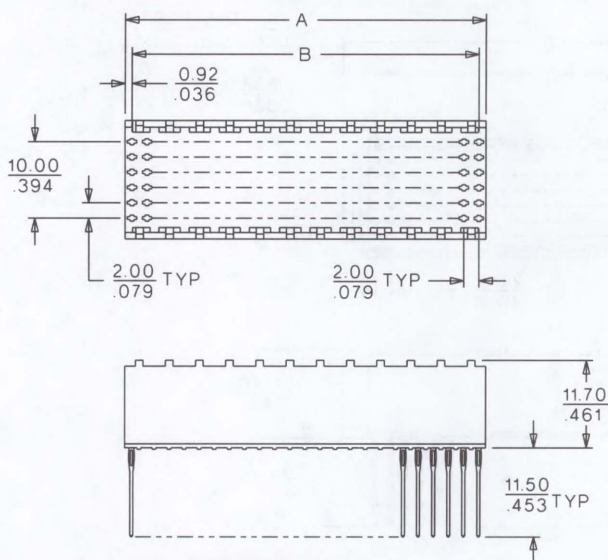
73800

Long Pin Vertical

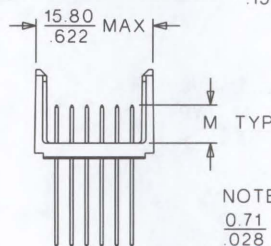
Open End Option, Press-Fit



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS:  $\frac{3.95}{.156}$



NOTE1:  
 $\frac{0.71}{.028}$  DIA. PLATED THRU HOLE TYP  
 $\frac{0.838}{.0330}$  DIA. DRILLED HOLE

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |             | Termination | Optional Rear Shrouds |            |            |
|----------|------------|---------------|---------------|-------------|-------------|-----------------------|------------|------------|
|          |            | A             | B             | M           |             | Open End              | Closed End | Guide Pin  |
| 72       | 73800-0000 | 23.84 (.939)  | 22.00 (.866)  | 5.00 (.197) | Press-Fit   | 73809-0000            | 73809-0100 | 73809-02XX |
|          | 73800-0200 | 23.84 (.939)  | 22.00 (.866)  | 6.00 (.236) | Press-Fit   |                       |            |            |
| 144      | 73800-1000 | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) | Press-Fit   | 73810-1000            | 73810-1100 | 73810-12XX |
|          | 73800-1200 | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) | Press-Fit   |                       |            |            |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

Note: PCB thickness between 2.2 and 3.4mm will permit optimum rear side mating length using shrouds. Thicker backplanes will require using duckpin headers, Series No. 73797.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Pins pass through backplane to allow rear side mating of cards or cables
- Gold contacts at both ends for excellent contact mating
- Surface Mount Compatible

## Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

## Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

## Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

## Physical

Housing: Liquid crystal polymer

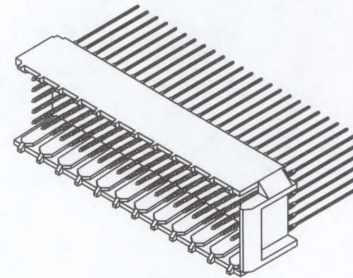
Contact: Phosphor Bronze

Plating: 30μ" Gold

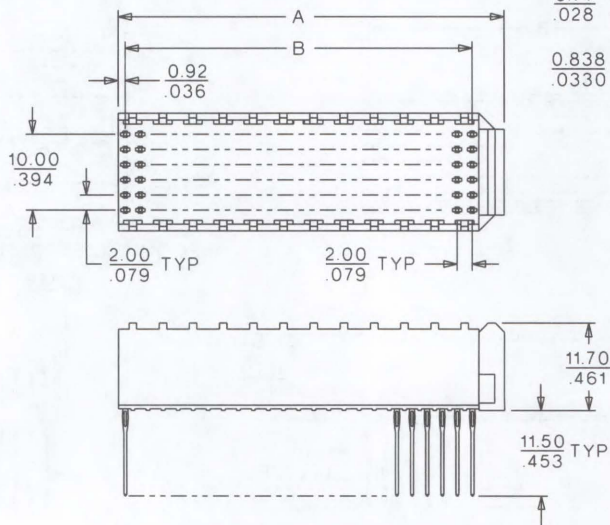
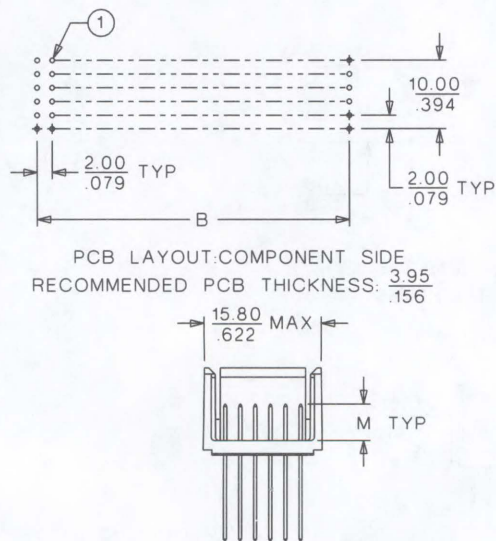
Operating Temperature: -55 to +105°C

2.00mm (.079") Pitch  
HDM\*Board-to-Board  
Midplane Header

73801

Long Pin Vertical  
Closed End Option, Press-Fit

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             | Optional Rear Shrouds |            |            |
|----------|------------|-------------|---------------|---------------|-------------|-----------------------|------------|------------|
|          |            |             | A             | B             | M           | Open End              | Closed End | Guide Pin  |
| 72       | 73801-0000 | Press-Fit   | 27.60 (1.087) | 22.00 (.866)  | 5.00 (.197) | 73809-0000            | 73809-0100 | 73809-02XX |
|          | 73801-0200 | Press-Fit   | 27.60 (1.087) | 22.00 (.866)  | 6.00 (.236) |                       |            |            |
| 144      | 73801-1000 | Press-Fit   | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) | 73810-1000            | 73810-1100 | 73810-12XX |
|          | 73801-1200 | Press-Fit   | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) |                       |            |            |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

Note: PCB thickness between 2.2 and 3.4mm will permit optimum rear side mating length using shrouds. Thicker backplanes will require using duckpin headers, Series No. 73798.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Pins pass through backplane to allow rear side mating of cards or cables
- Gold contacts at both ends for excellent contact mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

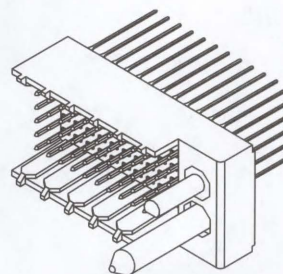
HDM\*

Board-to-Board

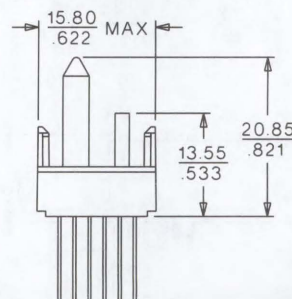
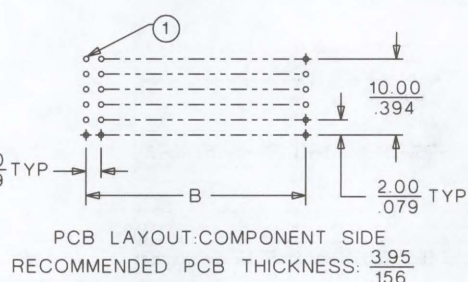
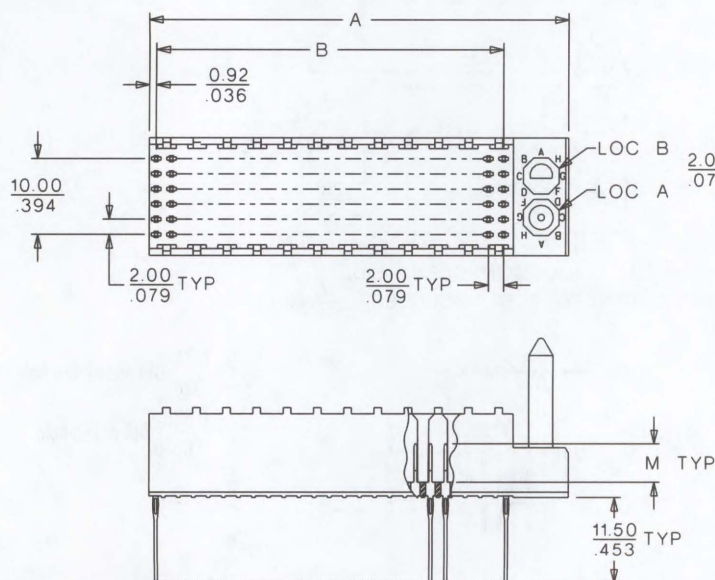
Midplane Header

73802

Long Pin Vertical  
Guide Pin Option, Press-Fit



## CATALOG DRAWING (FOR REFERENCE ONLY)



NOTE1:  
0.71 DIA PLATED  
.028 THRU HOLE TYP  
0.838 DIA DRILLED HOLE  
.0330

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                                |                                          |                                         |                                         | Termination | Dimension     |               |             |
|----------|------------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-------------|---------------|---------------|-------------|
|          | Location B = Pin<br>Location A = No Code | Location B = No Code<br>Location A = Pin | Location B = Pin<br>Location A = Code A | Location B = Code A<br>Location A = Pin |             | A             | B             | M           |
| 72       | 73802-0016                               | 73802-0017                               | 73802-0000                              | 73802-0001                              | Press-Fit   | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) |
|          | 73802-0216                               | 73802-0217                               | 73802-0200                              | 73802-0201                              | Press-Fit   | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) |
| 144      | 73802-1016                               | 73802-1017                               | 73802-1000                              | 73802-1001                              | Press-Fit   | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) |
|          | 73802-1216                               | 73802-1217                               | 73802-1200                              | 73802-1201                              | Press-Fit   | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) |
| Custom   | 73650-XXXX                               | 73650-XXXX                               | 73650-XXXX                              | 73650-XXXX                              | Press-Fit   | Custom        | Custom        | Custom      |

| Circuits | Optional Rear Shrouds |            |            |
|----------|-----------------------|------------|------------|
|          | Open End              | Closed End | Guide Pin  |
| 72       | 73809-0000            | 73809-0100 | 73809-02XX |
| 144      | 73810-1000            | 73810-1100 | 73810-12XX |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

Note: Additional key combinations and locations are available, please contact Molex

Note: PCB thickness between 2.2 and 3.4mm will permit optimum rear side mating length using shrouds. Thicker backplanes will require using duckpin headers, Series No. 73799.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Duckpin compliant zone is only 2.5mm long to permit installation of headers from front and rear of midplanes into the same holes
- Enables orthogonal packaging (North-South on front, East-West on rear)
- Requires midplanes 5mm thick
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C

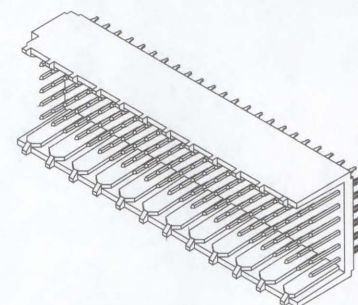


**2.00mm (.079") Pitch  
HDM\***

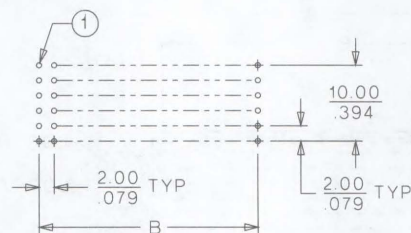
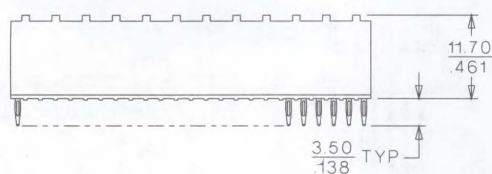
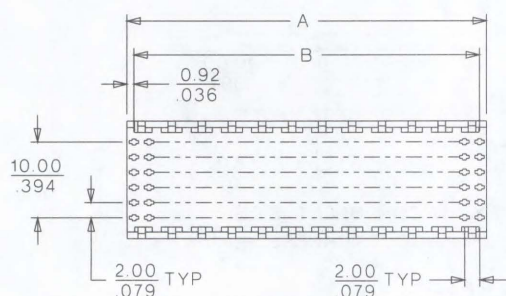
**Board-to-Board  
Duckpin Midplane Header**

**73797**

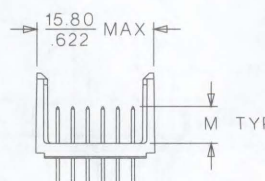
**Vertical  
Open End Option, Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 2.50 / .098 MIN



- ① 0.71 / .028 DIA plated thru hole TYP
- 0.838 / 0.0330 DIA drilled hole

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | M           |
| 72       | 73797-0000 | Press-Fit   | 23.84 (.939)  | 22.00 (.866)  | 5.00 (.197) |
|          | 73797-0200 | Press-Fit   | 23.84 (.939)  | 22.00 (.866)  | 6.00 (.236) |
| 144      | 73797-1000 | Press-Fit   | 47.84 (1.883) | 46.00 (1.811) | 5.00 (.197) |
|          | 73797-1200 | Press-Fit   | 47.84 (1.883) | 46.00 (1.811) | 6.00 (.236) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Duckpin compliant zone is only 2.5mm long to permit installation of headers from front and rear of midplanes into the same holes
- Enables orthogonal packaging (North-South on front, East-West on rear)
- Requires midplanes 5mm thick
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
 Packaging: Tube  
 UL File No.: E29179  
 Mates With: 73632 and 73780  
 Designed In: Millimeters

### Electrical

Current: 1.0A  
 Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V  
 Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin  
 Retention Force: 22.5N min. per press-fit pin  
 Mating Force: 0.35N typical per contact  
 Unmating Force: 0.15N min.  
 Signal Normal Force: 0.75N nom./0.60N min.  
 Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer  
 Contact: Phosphor Bronze  
 Plating: 30μ" Gold  
 Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM\*

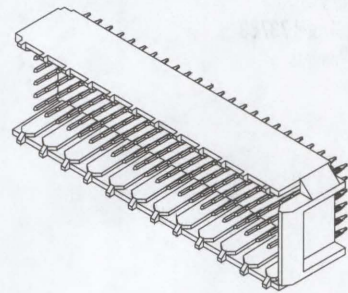
Board-to-Board

Duckpin Midplane Header

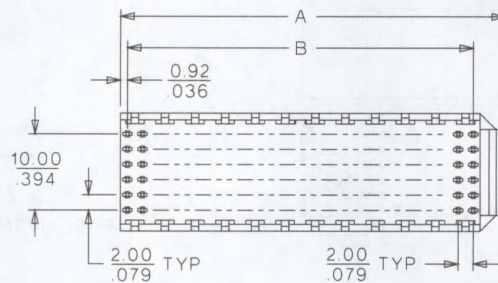
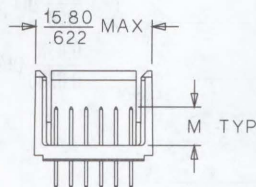
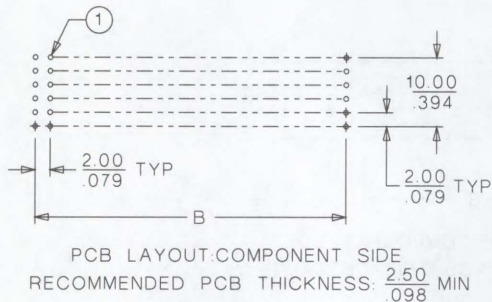
73798

Vertical

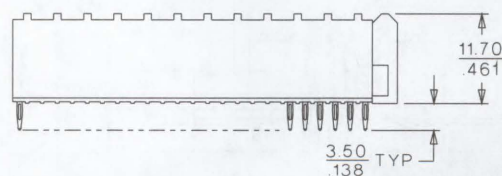
Closed End Option, Press-Fit



## CATALOG DRAWING (FOR REFERENCE ONLY)



① 0.71  
 .028 DIA plated thru hole TYP  
 0.838  
 0.0330 DIA drilled hole



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Termination | Dimension     |               |             |
|----------|------------|-------------|---------------|---------------|-------------|
|          |            |             | A             | B             | M           |
| 72       | 73798-0000 | Press-Fit   | 27.60 (1.087) | 22.00 (.866)  | 5.00 (.197) |
|          | 73798-0200 | Press-Fit   | 27.60 (1.087) | 22.00 (.866)  | 6.00 (.236) |
| 144      | 73798-1000 | Press-Fit   | 51.60 (2.031) | 46.00 (1.811) | 5.00 (.197) |
|          | 73798-1200 | Press-Fit   | 51.60 (2.031) | 46.00 (1.811) | 6.00 (.236) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Duckpin compliant zone is only 2.5mm long to permit installation of headers from front and rear of midplanes into the same holes
- Enables orthogonal packaging (North-South on front, East-West on rear)
- Requires midplanes 5mm thick
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
 Packaging: Tube  
 UL File No.: E29179  
 Mates With: 73632 and 73780  
 Designed In: Millimeters

### Electrical

Current: 1.0A  
 Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V  
 Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin  
 Retention Force: 22.5N min. per press-fit pin  
 Mating Force: 0.35N typical per contact  
 Unmating Force: 0.15N min.  
 Signal Normal Force: 0.75N nom./0.60N min.  
 Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer  
 Contact: Phosphor Bronze  
 Plating: 30μ" Gold  
 Operating Temperature: -55 to +105°C

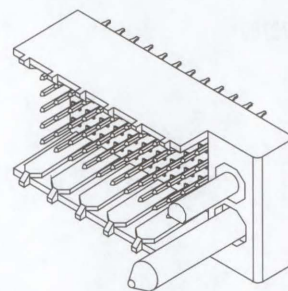


**2.00mm (.079") Pitch  
 HDM\***

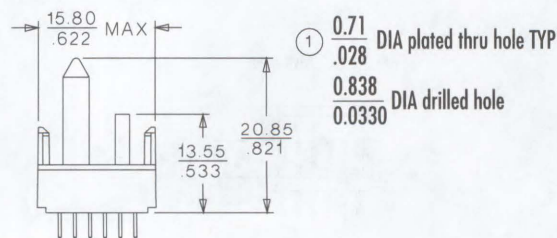
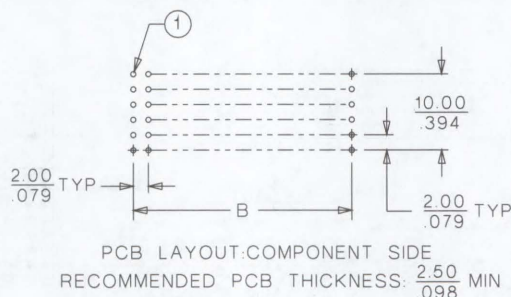
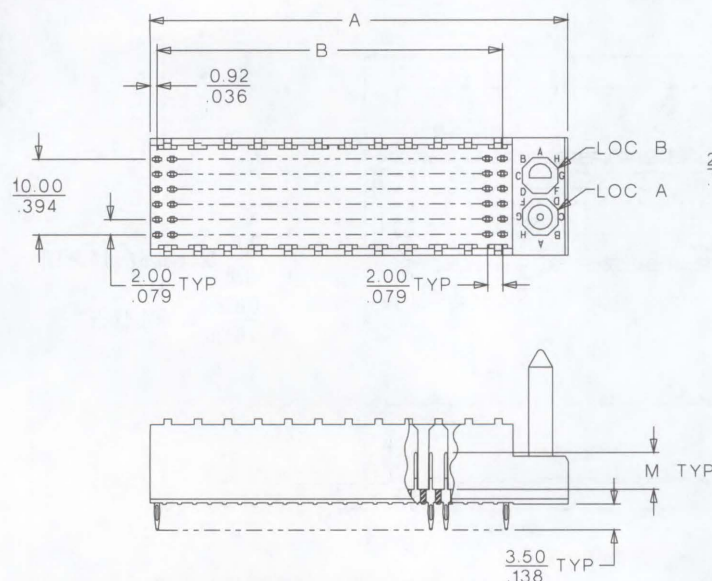
**Board-to-Board  
 Duckpin Midplane Header**

**73799**

**Vertical  
 Guide Pin Option, Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                                |                                          |                                         |                                         | Termination | Dimension     |               |             |
|----------|------------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-------------|---------------|---------------|-------------|
|          | Location B = Pin<br>Location A = No Code | Location B = No Code<br>Location A = Pin | Location B = Pin<br>Location A = Code A | Location B = Code A<br>Location A = Pin |             | A             | B             | M           |
| 72       | 73799-0016                               | 73799-0017                               | 73799-0000                              | 73799-0001                              | Press-Fit   | 31.60 (1.244) | 22.00 (.866)  | 5.00 (.197) |
|          | 73799-0216                               | 73799-0217                               | 73799-0200                              | 73799-0201                              | Press-Fit   | 31.60 (1.244) | 22.00 (.866)  | 6.00 (.236) |
| 144      | 73799-1016                               | 73799-1017                               | 73799-1000                              | 73799-1001                              | Press-Fit   | 55.60 (2.189) | 46.00 (1.811) | 5.00 (.197) |
|          | 73799-1216                               | 73799-1217                               | 73799-1200                              | 73799-1201                              | Press-Fit   | 55.60 (2.189) | 46.00 (1.811) | 6.00 (.236) |
| Custom   | 73799-XXXX                               | 73799-XXXX                               | 73799-XXXX                              | 73799-XXXX                              | Press-Fit   | Custom        | Custom        | Custom      |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.

Note: Additional key combinations and locations are available, please contact Molex



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Two tails per contact permits back-to-back mounting of power connectors on midplane
- 11.0A per contact
- For backplanes thicker than 3.5mm
- Requires only 12 holes in backplane
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73651-1998

Packaging: Tube

UL File No.: E29179

Mates With: 73651

Designed In: Millimeters

### Electrical

Current: 11.0A

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 2.5N max. per contact

Unmating Force: 0.15N min.

Normal Force: 1.0N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: 0.4mm Beryllium Copper

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

HDM\*

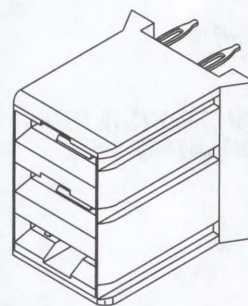
Board-to-Board

Midplane Power Module

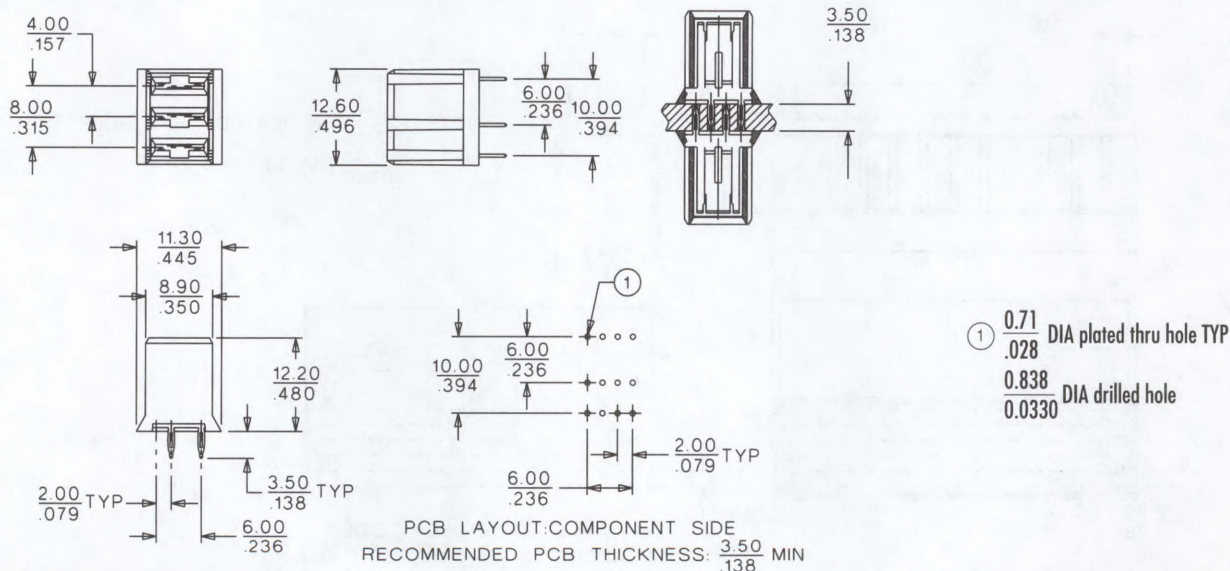
73656

Vertical

Power Receptacle, Press-Fit



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Module                | Order No.  | Termination | Finish |
|-----------------------|------------|-------------|--------|
| Midplane Power Module | 73656-1000 | Press-Fit   | Gold   |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- High-density 2.00mm metric connector in the same form factor as Futurebus
- 6-row 2mm connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density, high-speed applications
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Tail lengths available in 0.5mm increments to optimize PCB thickness
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73642, 73643, 73644, 73769, 73770, 73771, 73781, 73782, 73783, 74349 and 74428

Designed In: Millimeters

### Electrical

Voltage: 1000V

Current: 1.0A

Contact Resistance: 40mΩ max

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.35N typical

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Copper Alloy per C72500

Plating: 30μ" Gold with 300μ" Tin/Lead

Operating Temperature: -55 to +105°C



2.00mm (.079") Pitch

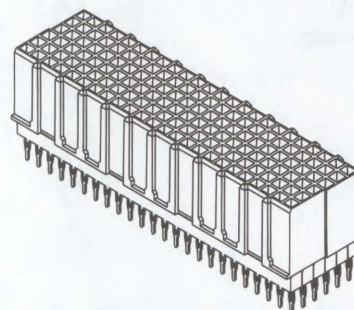
HDM\*

Board-to-Board

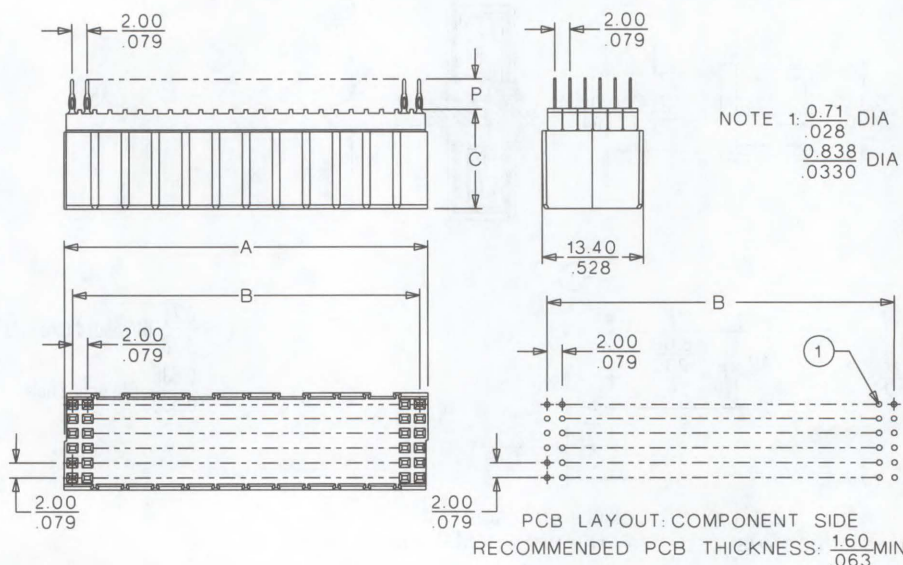
Daughterboard Receptacle

73780

Vertical  
Signal Module



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Termination | Dimension     |               |             | Order No.       |                 |                 |                 |                 |
|----------|-------------|---------------|---------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|          |             | A             | B             | P           | C = 13.0 (.512) | C = 14.0 (.551) | C = 15.0 (.591) | C = 16.0 (.630) | C = 17.0 (.669) |
| 72       | Solder Tail | 24.17 (.952)  | 22.00 (.866)  | 2.00 (.079) | 73780-0223      | 73780-0224      | 73780-0225      | 73780-0226      | 73780-0227      |
|          | Solder Tail | 24.17 (.952)  | 22.00 (.866)  | 2.50 (.098) | 73780-0233      | 73780-0234      | 73780-0235      | 73780-0236      | 73780-0237      |
|          | Solder Tail | 24.17 (.952)  | 22.00 (.866)  | 3.00 (.118) | 73780-0243      | 73780-0244      | 73780-0245      | 73780-0246      | 73780-0247      |
|          | Solder Tail | 24.17 (.952)  | 22.00 (.866)  | 3.50 (.138) | 73780-0253      | 73780-0254      | 73780-0255      | 73780-0256      | 73780-0257      |
|          | Solder Tail | 24.17 (.952)  | 22.00 (.866)  | 4.00 (.158) | 73780-0263      | 73780-0264      | 73780-0265      | 73780-0266      | 73780-0267      |
|          | Press-Fit   | 24.17 (.952)  | 22.00 (.866)  | 3.00 (.118) | 73780-2243      | 73780-2244      | 73780-2245      | 73780-2246      | 73780-2247      |
|          | Press-Fit   | 24.17 (.952)  | 22.00 (.866)  | 3.50 (.138) | 73780-2253      | 73780-2254      | 73780-2255      | 73780-2256      | 73780-2257      |
| 144      | Solder Tail | 48.17 (1.896) | 46.00 (1.811) | 2.00 (.079) | 73780-1223      | 73780-1224      | 73780-1225      | 73780-1226      | 73780-1227      |
|          | Solder Tail | 48.17 (1.896) | 46.00 (1.811) | 2.50 (.098) | 73780-1233      | 73780-1234      | 73780-1235      | 73780-1236      | 73780-1237      |
|          | Solder Tail | 48.17 (1.896) | 46.00 (1.811) | 3.00 (.118) | 73780-1243      | 73780-1244      | 73780-1245      | 73780-1246      | 73780-1247      |
|          | Solder Tail | 48.17 (1.896) | 46.00 (1.811) | 3.50 (.138) | 73780-1253      | 73780-1254      | 73780-1255      | 73780-1256      | 73780-1257      |
|          | Solder Tail | 48.17 (1.896) | 46.00 (1.811) | 4.00 (.158) | 73780-1263      | 73780-1264      | 73780-1265      | 73780-1266      | 73780-1267      |
|          | Press-Fit   | 48.17 (1.896) | 46.00 (1.811) | 3.00 (.118) | 73780-3243      | 73780-3244      | 73780-3245      | 73780-3246      | 73780-3247      |
|          | Press-Fit   | 48.17 (1.896) | 46.00 (1.811) | 3.50 (.138) | 73780-3253      | 73780-3254      | 73780-3255      | 73780-3256      | 73780-3257      |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- For Mezzanine cards, parallel backplanes, and bridge board applications
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C



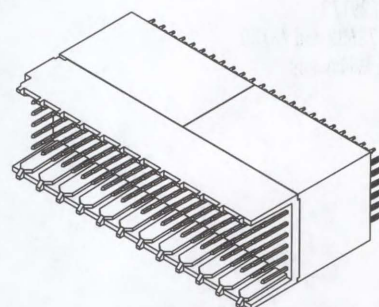
2.00mm (.079") Pitch

HDM\*

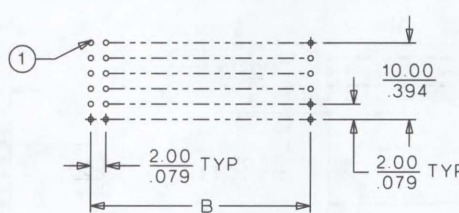
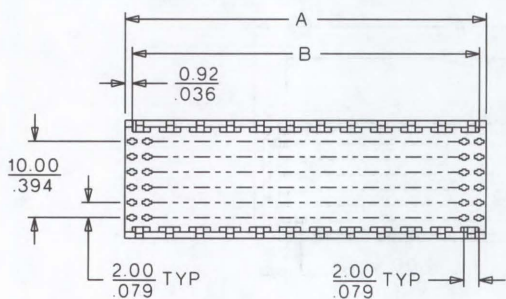
Board-to-Board  
Stacking Header

73769/73781

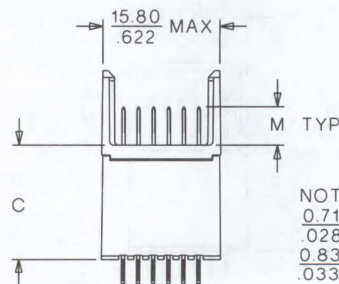
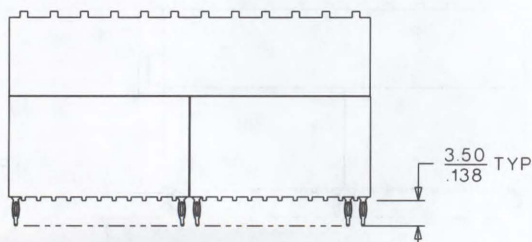
High Rise Vertical  
Open End Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 2.50 MIN  
.098



Note: Press-fit version shown

NOTE1:  
0.71 DIA PLATED THRU HOLE TYP  
.028  
0.838 DIA DRILLED HOLE  
.0330

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                       |                             |                             |                             |                             | Dimension     |               |              |             |
|----------|---------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------|---------------|--------------|-------------|
|          | Press-Fit Tail =<br>3.50 (.138) | Solder Tail =<br>2.0 (.079) | Solder Tail =<br>2.5 (.098) | Solder Tail =<br>3.0 (.118) | Solder Tail =<br>3.5 (.138) | A             | B             | C            | M           |
| 72       | 73769-0100                      | 73781-0100                  | 73781-2100                  | 73781-4100                  | 73781-6100                  | 23.84 (.939)  | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73769-0200                      | 73781-0200                  | 73781-2200                  | 73781-4200                  | 73781-6200                  | 23.84 (.939)  | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73769-0300                      | 73781-0300                  | 73781-2300                  | 73781-4300                  | 73781-6300                  | 23.84 (.939)  | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
| 144      | 73769-1100                      | 73781-1100                  | 73781-3100                  | 73781-5100                  | 73781-7100                  | 47.84 (1.883) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73769-1200                      | 73781-1200                  | 73781-3200                  | 73781-5200                  | 73781-7200                  | 47.84 (1.883) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73769-1300                      | 73781-1300                  | 73781-3300                  | 73781-5300                  | 73781-7300                  | 47.84 (1.883) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- For Mezzanine cards, parallel backplanes and bridge board applications
- End walls facilitate blind mating
- Surface Mount Compatible

## Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

## Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

## Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

## Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C

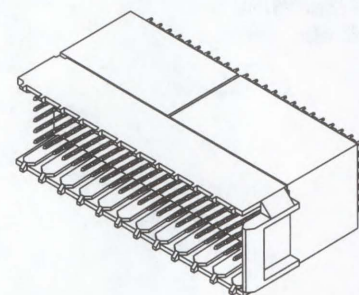


2.00mm (.079") Pitch

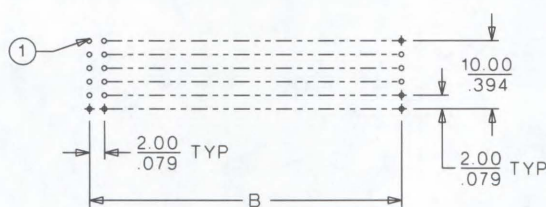
HDM\*

Board-to-Board  
Stacking Header

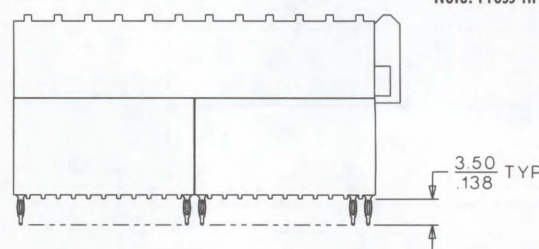
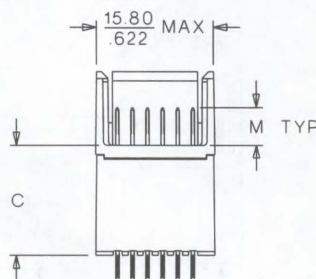
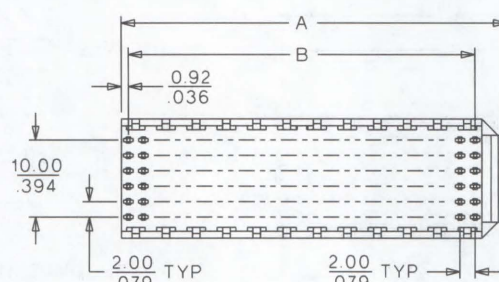
73770/73782

High Rise Vertical  
Closed End Option

## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 2.50 MIN  
.098



Note: Press-fit version shown

NOTE1:

0.71 DIA PLATED

.028 THRU HOLE TYP

0.838 DIA DRILLED HOLE

.0330

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.                       |                             |                             |                             |                             | Dimension     |               |              |             |
|----------|---------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------|---------------|--------------|-------------|
|          | Press-Fit Tail =<br>3.50 (.138) | Solder Tail =<br>2.0 (.079) | Solder Tail =<br>2.5 (.098) | Solder Tail =<br>3.0 (.118) | Solder Tail =<br>3.5 (.138) | A             | B             | C            | M           |
| 72       | 73770-0100                      | 73782-0100                  | 73782-2100                  | 73782-4100                  | 73782-6100                  | 27.60 (1.087) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73770-0200                      | 73782-0200                  | 73782-2200                  | 73782-4200                  | 73782-6200                  | 27.60 (1.087) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73770-0300                      | 73782-0300                  | 73782-2300                  | 73782-4300                  | 73782-6300                  | 27.60 (1.087) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
| 144      | 73770-1100                      | 73782-1100                  | 73782-3100                  | 73782-5100                  | 73782-7100                  | 51.60 (2.031) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73770-1200                      | 73782-1200                  | 73782-3200                  | 73782-5200                  | 73782-7200                  | 51.60 (2.031) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73770-1300                      | 73782-1300                  | 73782-3300                  | 73782-5300                  | 73782-7300                  | 51.60 (2.031) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- For Mezzanine cards, parallel backplanes, and bridge board applications
- End walls facilitate blind mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

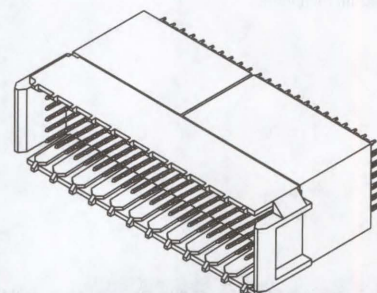
Operating Temperature: -55 to +105°C



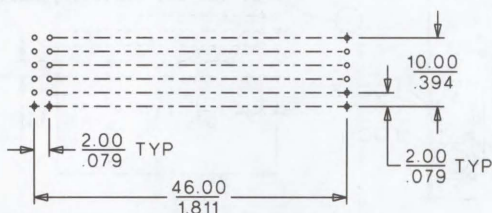
## 2.00mm (.079") Pitch HDM\* Board-to-Board Stacking Header

**74428**

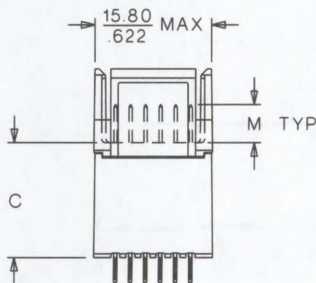
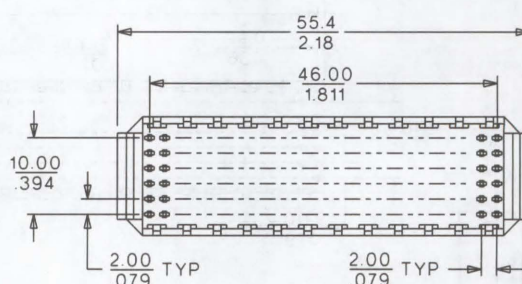
## Vertical Double End Option



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE  
RECOMMENDED PCB THICKNESS: 2.50 (.098) MIN



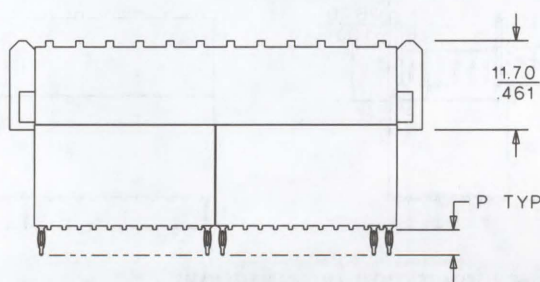
NOTE1:

0.71 DIA PLATED

.028 THRU HOLE TYP

0.838 DIA DRILLED HOLE

.0330



## ORDERING INFORMATION AND DIMENSIONS

| Order No.       |                 |                 |                 |                 | Dimension    |             |
|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|-------------|
| Press-Fit Tail  | Solder Tail     |                 |                 |                 | C            | M           |
| P = 3.50 (.138) | P = 2.00 (.079) | P = 2.50 (.098) | P = 3.00 (.118) | P = 3.50 (.138) |              |             |
| 74428-4000      | 74428-0000      | 74428-1000      | 74428-2000      | 74428-3000      | 6.05 (.238)  | 5.00 (.197) |
| 74428-4100      | 74428-0100      | 74428-1100      | 74428-2100      | 74428-3100      | 10.05 (.396) | 5.00 (.197) |
| 74428-4200      | 74428-0200      | 74428-1200      | 74428-2200      | 74428-3200      | 15.05 (.593) | 5.00 (.197) |

\* High Density Metric and HDM<sup>®</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- Mezzanine card to facilitate blind mate
- Surface Mount Compatible

## Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632/73780

Designed In: Millimeters

## Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

## Mechanical

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

## Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C

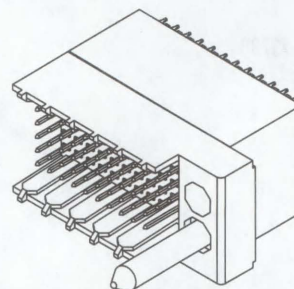


2.00mm (.079") Pitch

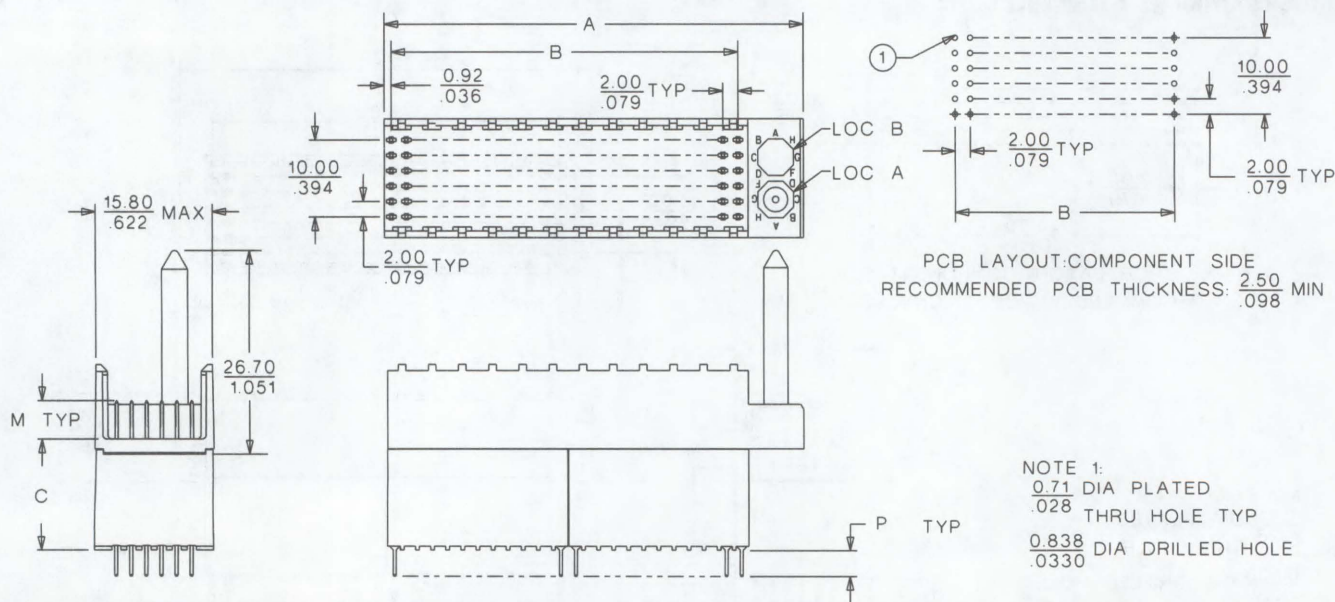
HDM\*

Board-to-Board  
Stacking Header

73783

High Rise Vertical  
Solder Tail Guide Pin Option

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.       |                 |                 |                 | Guide Post Location | Dimension     |               |              |             |
|----------|-----------------|-----------------|-----------------|-----------------|---------------------|---------------|---------------|--------------|-------------|
|          | P = 2.00 (.079) | P = 2.50 (.098) | P = 3.00 (.118) | P = 3.50 (.138) |                     | A             | B             | C            | M           |
| 72       | 73783-0100      | 73783-2100      | 73783-4100      | 73783-6100      | A                   | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73783-0101      | 73783-2101      | 73783-4101      | 73783-6101      | B                   | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73783-0102      | 73783-2102      | 73783-4102      | 73783-6102      | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73783-0200      | 73783-2200      | 73783-4200      | 73783-6200      | A                   | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-0201      | 73783-2201      | 73783-4201      | 73783-6201      | B                   | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-0202      | 73783-2202      | 73783-4202      | 73783-6202      | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-0300      | 73783-2300      | 73783-4300      | 73783-6300      | A                   | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
|          | 73783-0301      | 73783-2301      | 73783-4301      | 73783-6301      | B                   | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
|          | 73783-0302      | 73783-2302      | 73783-4302      | 73783-6302      | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
|          | 73783-1100      | 73783-3100      | 73783-5100      | 73783-7100      | A                   | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73783-1101      | 73783-3101      | 73783-5101      | 73783-7101      | B                   | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73783-1102      | 73783-3102      | 73783-5102      | 73783-7102      | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
| 144      | 73783-1200      | 73783-3200      | 73783-5200      | 73783-7200      | A                   | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-1201      | 73783-3201      | 73783-5201      | 73783-7201      | B                   | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-1202      | 73783-3202      | 73783-5202      | 73783-7202      | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73783-1300      | 73783-3300      | 73783-5300      | 73783-7300      | A                   | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |
|          | 73783-1301      | 73783-3301      | 73783-5301      | 73783-7301      | B                   | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |
|          | 73783-1302      | 73783-3302      | 73783-5302      | 73783-7302      | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.

Note: Additional key combinations and locations are available, please contact Molex

Note: The guide pin must mate with the top position on the mating receptacle to clear the board edge. Therefore, if guidepin headers are used on each end of a header array, you should select one with the pin in location B and the second with the guidepin in location A.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- Mezzanine card to facilitate blind mate
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999

Packaging: Tube

UL File No.: E29179

Mates With: 73632 and 73780

Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

| Row     | A  | B  | C  | D  | E  | F  |
|---------|----|----|----|----|----|----|
| mΩ max. | 13 | 18 | 20 | 25 | 30 | 32 |

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 MΩ min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30μ" Gold

Operating Temperature: -55 to +105°C

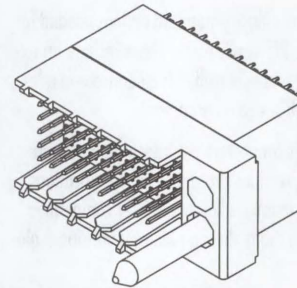


**2.00mm (.079") Pitch  
HDM\***

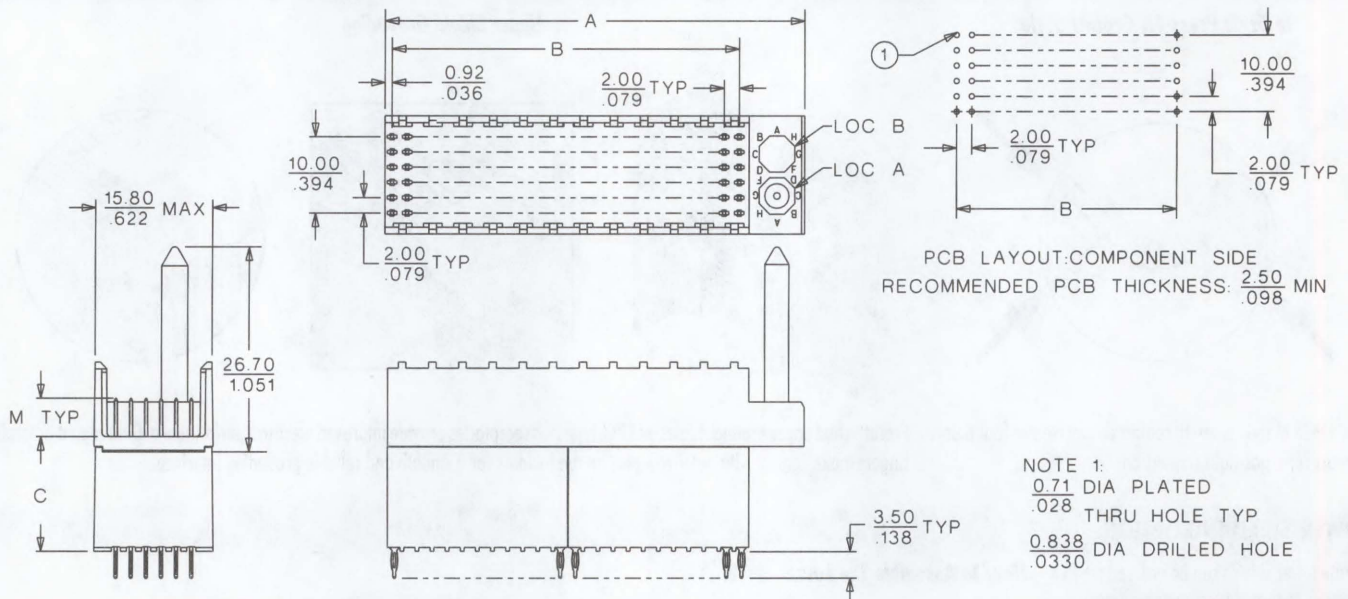
**Board-to-Board  
Stacking Header**

**73771**

**High Rise Vertical  
Press-Fit Guide Pin Option**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Guide Post Location | Dimension     |               |              |             |
|----------|------------|---------------------|---------------|---------------|--------------|-------------|
|          |            |                     | A             | B             | C            | M           |
| 72       | 73771-0100 | A                   | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73771-0101 | B                   | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73771-0102 | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 15.05 (.593) | 5.00 (.197) |
|          | 73771-0200 | A                   | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-0201 | B                   | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-0202 | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-0300 | A                   | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
|          | 73771-0301 | B                   | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
|          | 73771-0302 | N/A                 | 31.60 (1.244) | 22.00 (.866)  | 10.05 (.396) | 5.00 (.197) |
| 144      | 73771-1100 | A                   | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73771-1101 | B                   | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73771-1102 | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 15.05 (.593) | 5.00 (.197) |
|          | 73771-1200 | A                   | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-1201 | B                   | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-1202 | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 6.05 (.238)  | 5.00 (.197) |
|          | 73771-1300 | A                   | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |
|          | 73771-1301 | B                   | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |
|          | 73771-1302 | N/A                 | 55.60 (2.189) | 46.00 (1.811) | 10.05 (.396) | 5.00 (.197) |

\* High Density Metric and HDM<sup>®</sup> are trademarks of Teradyne, Inc.

Note: Additional key combinations and locations are available, please contact Molex

Note: The guide pin must mate with the top position on the mating receptacle to clear the board edge. Therefore, if guidepin headers are used on each end of a header array, you should select one with the pin in location B and the second with the guidepin in location A.



## MZP INTRODUCTION

Molex's new line of MZP hard metric connectors meet the high speed and high density needs of today's rugged backplane applications. The 2.00mm (.079") pitch system is IEC 61076-4-101 compliant and includes versions specified for various CompactPCI\*, VMEbus and proprietary applications.

MZP is a modular connector system using increments of 25.00mm (.984"). The system includes gas tight press-fit headers and receptacles using five rows of signal contacts and one or two rows of outer shield or ground contacts. A total of 15 different contact lengths are offered for sequential mating, mid-plane configurations and hot-swapping capabilities.

The MZP system offers the industry standard options needed for today's popular CompactPCI applications. These include an external metal shield to provide controlled impedance and adequate grounding for high speed environments.

Molex's MZP hard metric connectors are interchangeable with other industry standard versions that meet IEC specifications. MZP also offers various unique advantages over competitive versions, and is available today through Molex's various global locations.

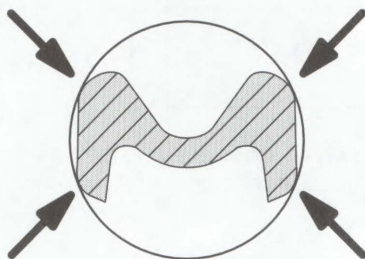
# molex® 2.00mm (.079") Pitch MZP™ Hard Metric Backplane Connectors

### System Features and Benefits

- IEC 61076-4-101 compliant to meet industry standards
- Interchangeable with other IEC compliant versions for sourcing flexibility
- Compact PCI compliant versions meet high-speed requirements
- The M style Molex press-fit contact design creates four points of contact for a gas-tight connection
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- Upper and lower shielding options provide high-speed and low cross-talk
- Multiple pin lengths for sequential mating that allows hot swapping
- Special options for non-standard pin loading
- Code keys with color and numerical ID insure correct mating
- Selective loading for receptacles

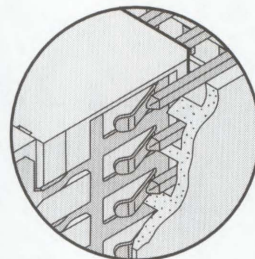
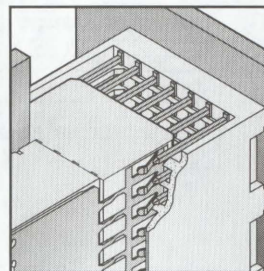
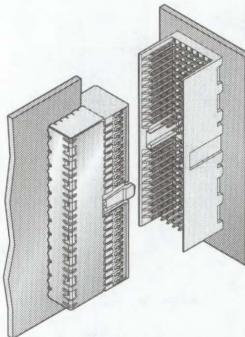
## FEATURES AND BENEFITS

### M Style Press-Fit Contact Style



Molex's MZP M style press-fit contact design creates four points of contact for a gas-tight connection.

### Upper Shield Grounding

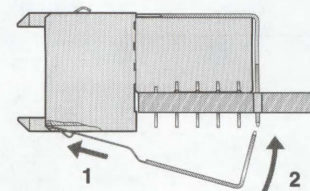
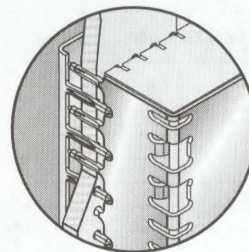
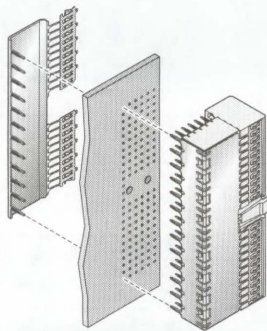


Pre-attached upper ground shields on CPCI-type PCB receptacles provide improved electrical performance. Gold-plated grounding fingers make contact with outer row pins on the headers for a smooth and reliable grounding interface.

## LOWER SHIELDING OPTION

Separate lower shields can be ordered for PCB receptacles to provide frame grounding. Shields can be ordered in different sizes for Type A/ B/ C/ CR/ M receptacles, and offer easy snap-in assembly.

### How To Assemble The Lower Shield



1.) PCB receptacle is press-fit into top side of daughtercard. Lower shield is then press-fit into bottom side. Both upper and lower shields include Molex's M style press-fit contact technology.

2.) Lower shields are used with shielded PCB receptacles to provide frame grounding. A staggered contact arrangement allows leads to be inserted into alternate holes in row f.

3.) Pre-formed metal guides snap easily into the receptacle. Grounding fingers on upper and lower shields make contact with header pins in rows z and f for full frame grounding.

CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group.



## CompactPCI INTRODUCTION

CompactPCI is a specification for PCI-based industrial computers that combines the power of low cost PCI silicon with rugged Eurocard VME bus packaging. Defined for both 3U (100.00 by 160.00mm (3.937 by 6.299")) and 6U (160.00 by 233.00mm (6.299 by 9.173")) card sizes.

CompactPCI has the following features:

- High density 2.00mm (.079") hard metric connectors (IEC approved and Bellcore qualified)
- Hot swappability (live insertion)
- Vertical card orientation for good cooling
- Excellent shock and vibration characteristics
- Eight slots in basic configuration
- Easily expandable with use of bridge chips
- Standard chassis available from many suppliers

## The Molex CPCI Advantage

As a world leader in high density and high speed connectors, Molex provides the proven reliability needed for today's rugged CPCI applications. We offer a full range of standard CPCI versions with custom support for various pin-out, shielding and cabling requirements. Our global engineering and Sales facilities enable us to provide nearby design and delivery service.

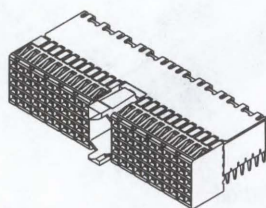
## CPCI Applications:

- ATM and Central Office Switches
- Industrial PCs
- Embedded systems
- Routers
- Network servers



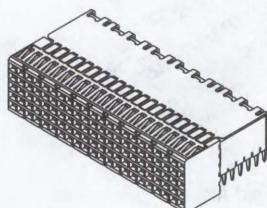
## 2.00mm (.079") Pitch MZP™ Hard Metric Backplane Connectors (For CompactPCI™)

## MZP™ CompactPCI TYPE



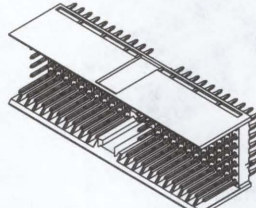
Type A Right Angle Female With Upper Shield

CompactPCI Type:  
J1/J4 (110 circuits)  
54457



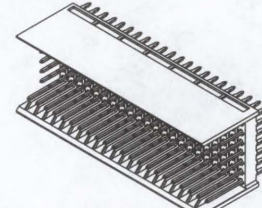
Type B Right Angle Female With Upper Shield

CompactPCI Type:  
J2/J5 (110 circuits)  
J3 (95 circuits)  
54603



Type A Vertical Male

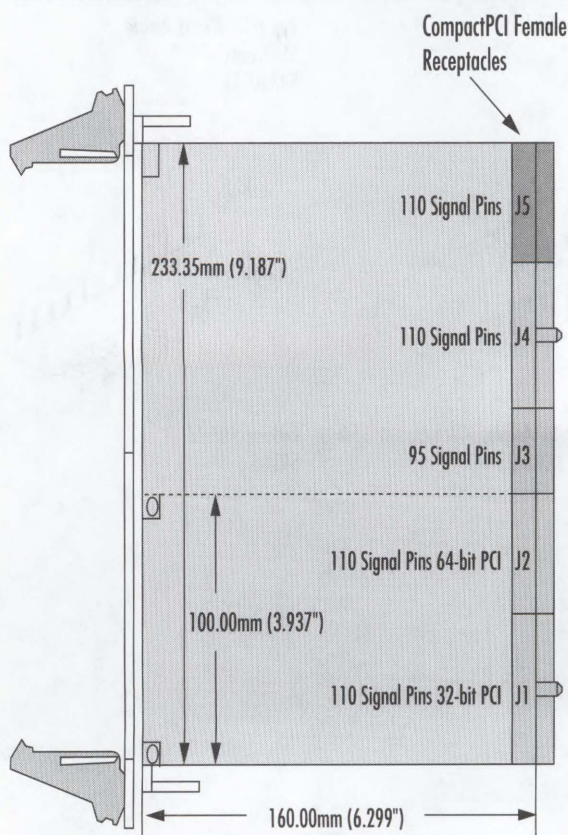
CompactPCI Type:  
P1/ Feed-to/ Hot Swap (154 circuits)  
55502  
P1/ Feed-through/ Hot Swap (154 circuits)  
55541  
P1/P4 (154 circuits)  
55502  
P4/ Computer-Telephony  
55541



Type B Vertical Male

CompactPCI Type:  
P2/P5/ Feed-to (154 circuits)  
55501  
P2/P5/ Feed-through (154 circuits)  
55540  
P3/ Feed-to (133 circuits)  
55501  
P3/ Feed-through (133 circuits)  
55540

## CompactPCI BACKPLANE DESIGNATIONS



## Molex CompactPCI Connectors

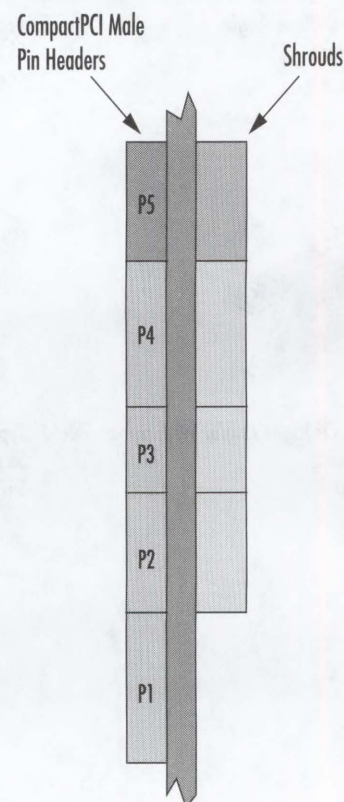
J5: 54603-1102  
P5/ Feed-to: 55501-1541  
P5/ Feed-through: 55540-1541

J4: 54457-1106  
P4: 55502-1542  
P4/ Computer-Telephony: 55541-1321

J3: 54603-0952  
P3/ Feed-to: 55501-1331  
P3/ Feed-through: 55540-1331

J2: 54603-1102  
P2/ Feed-to: 55501-1541  
P2/ Feed-through: 55540-1541

J1: 54457-1106  
P1: 55502-1542  
P1/ Hot-Swap/ Feed-to: 55502-1541  
P1/ Hot-Swap/ Feed-through: 55541-1542



\* CompactPCI and PICMG are registered trademarks of the PCI Industrial Computer Manufacturers Group.



## PCB RECEPTACLES

PCB receptacles for MZP can mate with Molex's vertical and right angle MZP plugs, or shrouds for feed-through applications. These industry standard versions can be used with lower shielding for grounding.

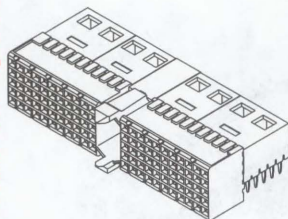
### Features and Benefits

- End-to-end stacking for various configurations
- Right angle and vertical types
- Selective terminal loading
- Center guide and keying feature
- Lower shielding option
- Right angle receptacles with or without upper shielding

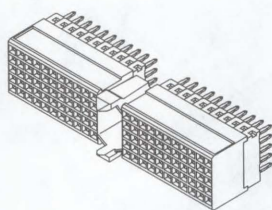


**2.00mm (.079") Pitch**  
**MZP™ Hard Metric Series**  
**IEC 61076-4-101 Compliant**  
**Standard Series**

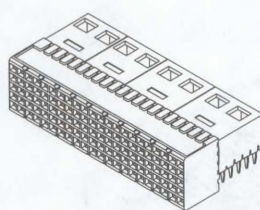
Backplane Connector Systems



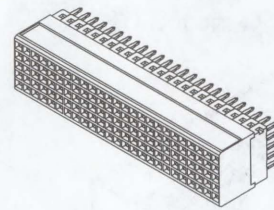
**Type A Right Angle**  
 110 circuits  
 (CPCI shielding version available)  
 54457



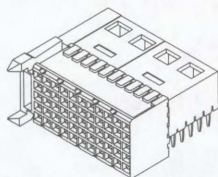
**Type A Vertical**  
 110 circuits  
 54491



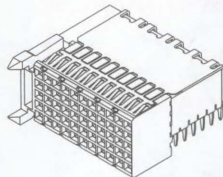
**Type B Right Angle**  
 125 circuits  
 (CPCI shielding versions available)  
 54457/54603



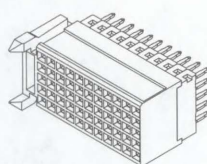
**Type B Vertical**  
 125 circuits  
 54491



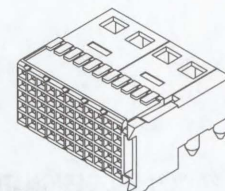
**Type C Right Angle**  
 55 circuits  
 54457



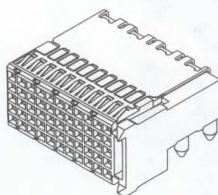
**Type C Right Angle, With Upper Shield**  
 55 circuits  
 54457



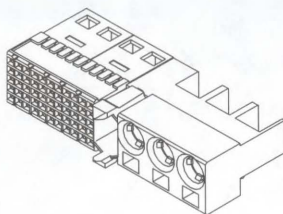
**Type C Vertical**  
 55 circuits  
 54491



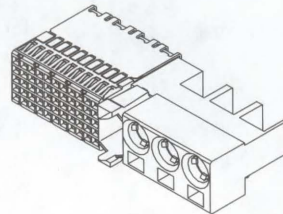
**Type CR Right Angle**  
 55 circuits  
 54750



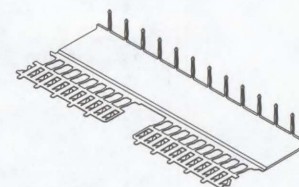
**Type CR Right Angle, With Upper Shield**  
 55 circuits  
 54750



**Type M Right Angle**  
 55 circuits/ 3 DIN cavities  
 54780



**Type M Right Angle, With Upper Shield**  
 55 circuits/ 3 DIN cavities  
 54780



**Lower Shield**  
 59105



## PLUG HEADERS

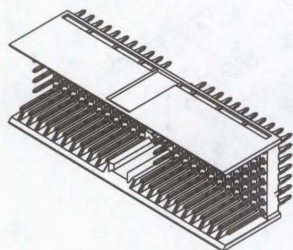
Molex's MZP press-fit plugs mate with five and seven-row MZP PCB receptacles. Vertical and right angle versions are offered for standard backplane and extender card options.

### Features and Benefits

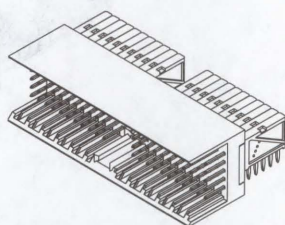
- Various pin layouts and lengths for feed-to, feed-through and hot swap options
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- End-to-end stacking for various configurations
- Integral guide ribs to accommodate shield grounding points



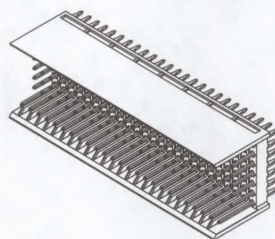
## 2.00mm (.079") Pitch MZP™ Hard Metric Series IEC 61076-4-101 Compliant Standard Series



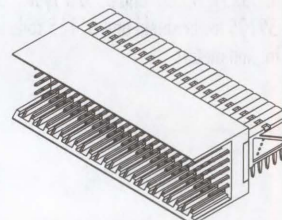
**Type A Vertical**  
110 and 154 circuits  
55376/55357



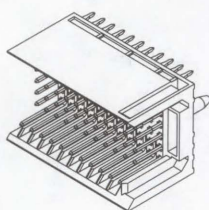
**Type A Right Angle**  
110 circuits  
55351



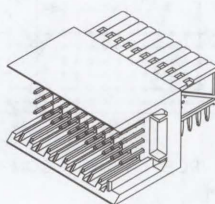
**Type B Vertical**  
125, 175 circuits  
55357/55376



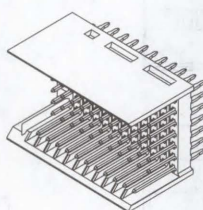
**Type B Right Angle**  
125 circuits  
55351



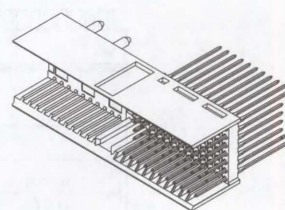
**Type C Vertical**  
55 and 77 circuits  
55357/55376



**Type C Right Angle**  
55 circuits  
55351

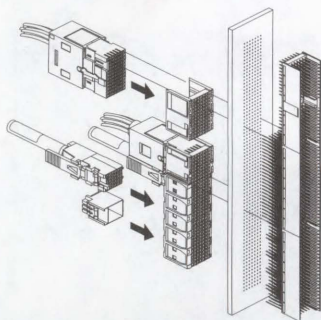


**Type CR Vertical**  
55 and 77 circuits  
55616/55617

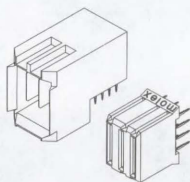


**Type M Vertical**  
55 and 77/3 circuits  
55614/55615

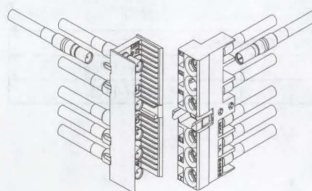
## OTHER MZP™ SERIES



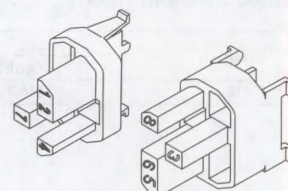
**I/O Cables + Shrouds**  
IDT Type: 25 circuit Single Lock  
Crimp Type: 40 and 60 circuit Dual Lock  
Contact Molex for ordering details



**Power Modules**  
Right Angle Plug—55573  
Vertical Receptacle—54745



**Type L**  
Contact Molex for ordering details



**Code Keys**  
51165/51166



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 110 Circuits—5 rows by 22 columns
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Center guide and keying feature
- Press-fit PCB retention peg option
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type A 5-row plugs

Use With: 59105 lower shield and 51165 code key

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating: Contact Area—0.8μm (31μ") min. Gold over Nickel

Press-Fit Area—0.5μm (20μ") min. Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

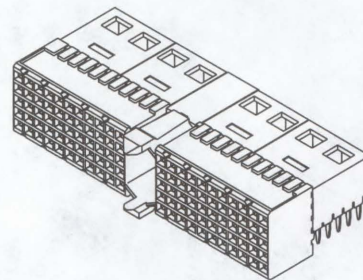
Operating Temperature: -55 to +125°C



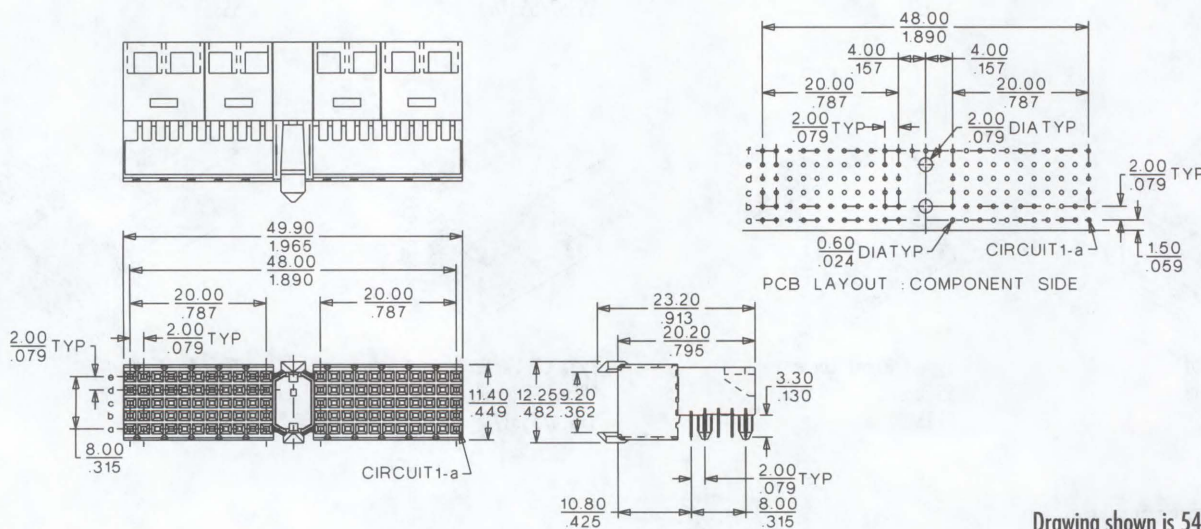
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54457**

**Type A, Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54457-1101

## ORDERING INFORMATION

| Circuits | Order No.  |             |
|----------|------------|-------------|
|          | With Peg   | Without Peg |
| 110      | 54457-1101 | 54457-1105  |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 110 Circuits—5 rows by 22 columns
- Upper shield for grounding
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Center guide and keying feature
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55357, 55376, 55502 and 55541 Type A

5+2-row plugs

Use With: 59105 lower shield and 51165 code key

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Terminal: Contact Area—0.8 $\mu$ m (31 $\mu$ ) min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ ) min. Tin/Lead over Nickel

Shield: Contact Area—Gold over Nickel

Press-Fit Area—Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

Upper Shield: Phosphor Bronze

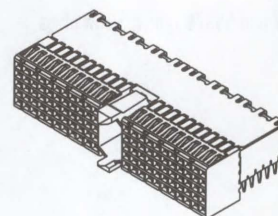
Operating Temperature: -55 to +125°C



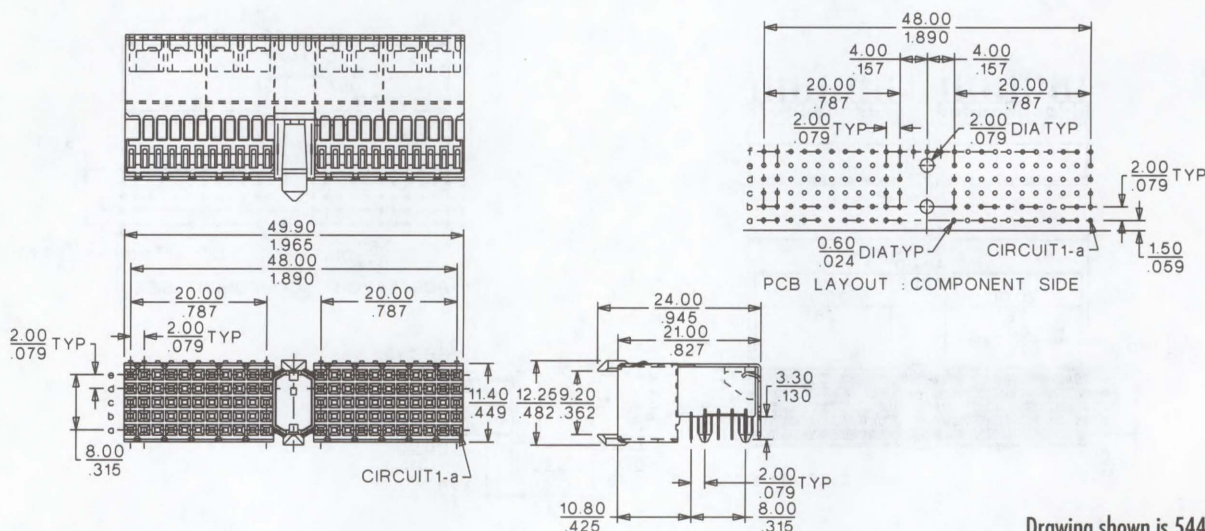
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

### 54457

## Type A, Right Angle With Upper Shield CompactPCI\* Type



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54457-1102

## ORDERING INFORMATION

| Circuits | Order No.  |             | CompactPCI Type |
|----------|------------|-------------|-----------------|
|          | With Peg   | Without Peg |                 |
| 110      | 54457-1102 | 54457-1106  | J1/J4           |

\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group







## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 95 Circuits—5 rows by 19 columns
- 110 Circuits—5 rows by 22 columns
- 125 Circuits—5 rows by 25 columns
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type B 5-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Contact Area—0.8 $\mu$ m (31 $\mu$ " min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ " min. Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

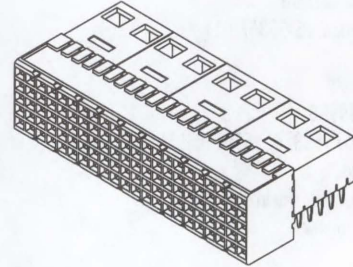
Operating Temperature: -55 to +125°C



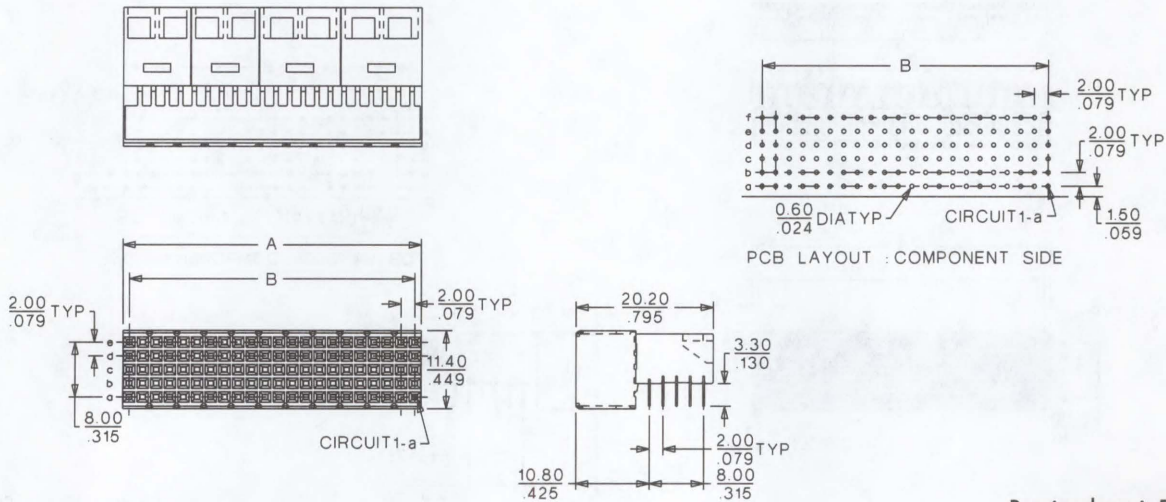
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54457/54603**

**Type B, Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54603-1101

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 125      | 54457-1251 | 49.90 (1.965) | 48.00 (1.890) |
| 110      | 54603-1101 | 43.90 (1.728) | 42.00 (1.654) |
| 95       | 54603-0951 | 37.90 (1.492) | 36.00 (1.417) |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 95 Circuits—5 rows by 19 columns
- 110 Circuits—5 rows by 22 columns
- 125 Circuits—5 rows by 25 columns
- Upper shield for grounding
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55357, 55376, 55501 and 55540 Type B

5+2-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Terminal: Contact Area—0.8 $\mu$ m (31 $\mu$ ) min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ ) min. Tin/Lead over Nickel

Shield: Contact Area—Gold over Nickel

Press-Fit Area—Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

Upper Shield: Phosphor Bronze

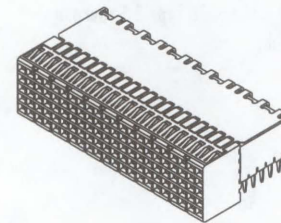
Operating Temperature: -55 to +125°C



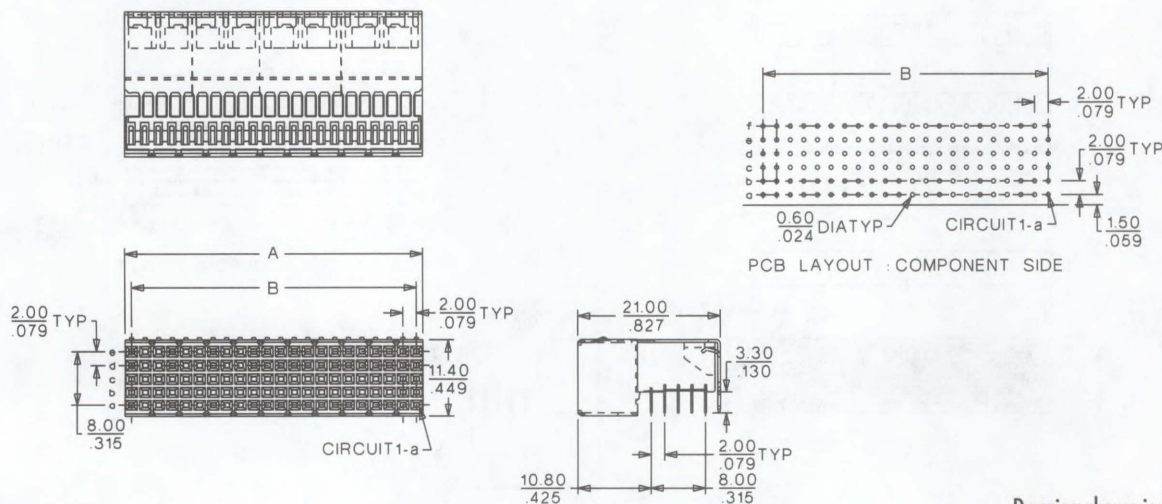
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54457/54603**

**Type B, Right Angle  
With Upper Shield and  
CompactPCI\* Type**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54603-1102

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | CompactPCI Type | Dimension     |               |
|----------|------------|-----------------|---------------|---------------|
|          |            |                 | A             | B             |
| 125      | 54457-1252 | No              | 49.90 (1.965) | 48.00 (1.890) |
| 110      | 54603-1102 | J2/J5           | 43.90 (1.728) | 42.00 (1.654) |
| 95       | 54603-0952 | J3              | 37.90 (1.492) | 36.00 (1.417) |

\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 125 Circuits—5 rows by 25 columns
- For use on horizontal backplanes or mezzanine-style connections on daughtercards
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection

### Reference Information

Product Specification: PS-54491-016

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type B 5-row plugs

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 35 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: 0.8 $\mu$ m (31 $\mu$ "") min. Gold over Nickel

Module: Gray glass-filled PBT, UL 94V-0

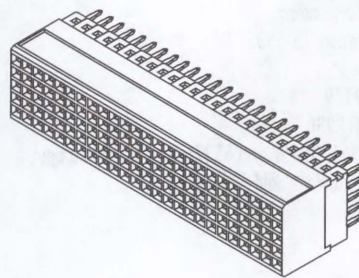
Operating Temperature: -55 to +125°C



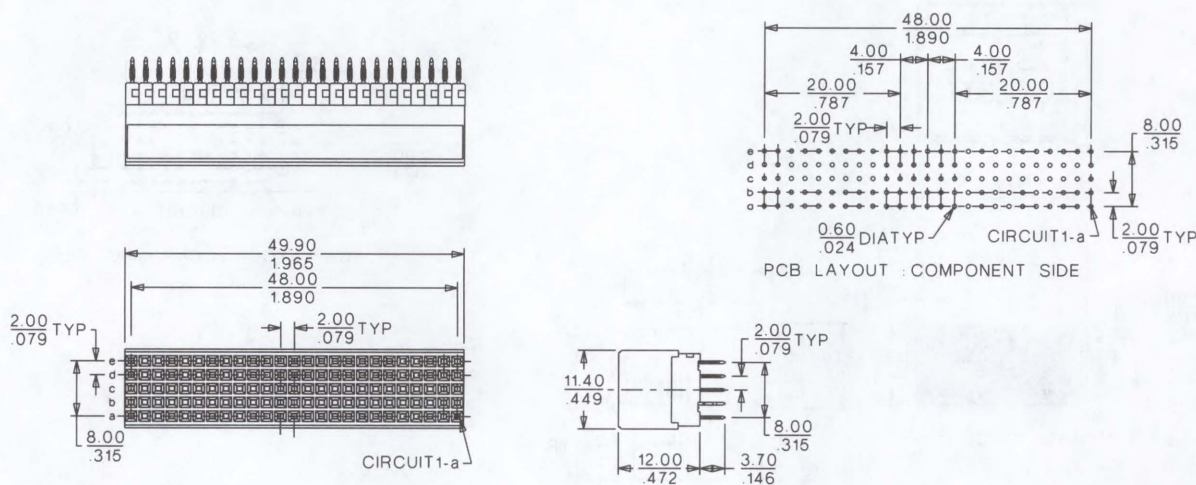
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

### 54491

### Type B, Vertical



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 125      | 54491-1259 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- Used at end of daughterboard, with guide/polarization feature in middle
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Press-fit PCB retention pegs optional
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type C 5-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Contact Area— $0.8\mu\text{m}$  ( $31\mu$ ) min. Gold over Nickel

Press-Fit Area— $0.5\mu\text{m}$  ( $20\mu$ ) min. Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

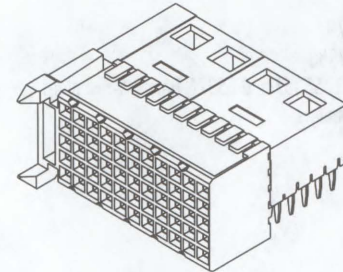
Operating Temperature: -55 to +125°C



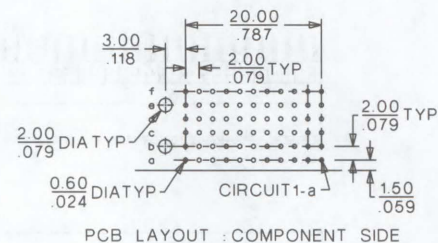
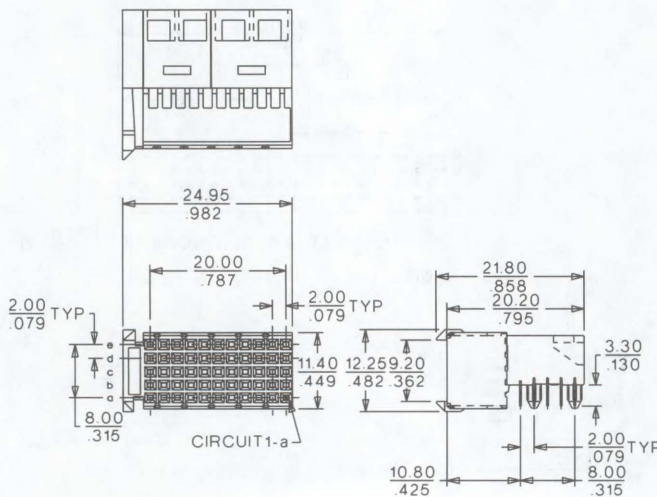
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54457**

**Type C, Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54457-0551

## ORDERING INFORMATION

| Circuits | Order No.  |             |
|----------|------------|-------------|
|          | With Peg   | Without Peg |
| 55       | 54457-0551 | 54457-0555  |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- Upper shield for grounding
- Used at end of daughterboard, with guide/polarization feature in middle
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Press-fit PCB retention pegs optional

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type C 5+2-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Terminal: Contact Area—0.8 $\mu$ m (31 $\mu$ ) min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ ) min. Tin/Lead over Nickel

Shield: Contact Area—Gold over Nickel

Press-Fit Area—Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

Upper Shield: Phosphor Bronze

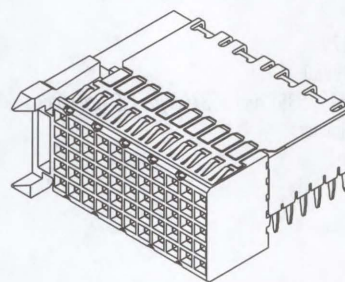
Operating Temperature: -55 to +125°C



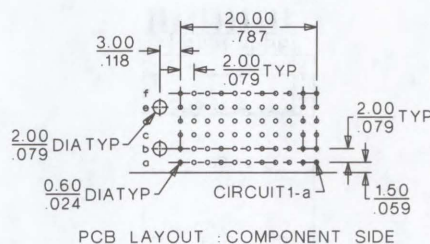
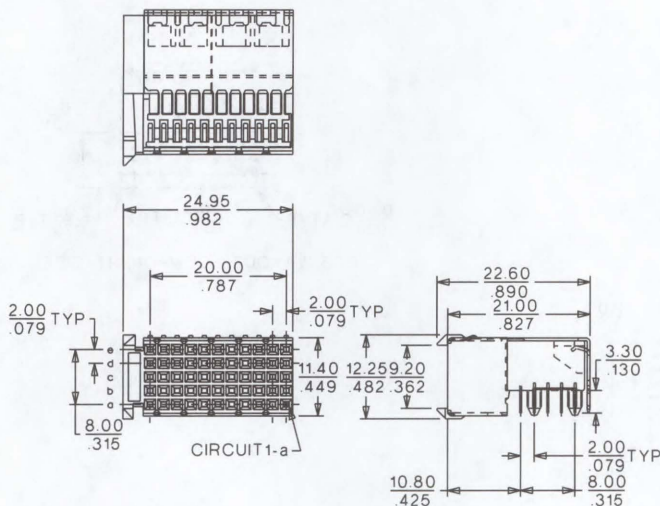
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

### 54457

### Type C, Right Angle With Upper Shield



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 54457-0552

## ORDERING INFORMATION

| Circuits | Order No.  |             |
|----------|------------|-------------|
|          | With Peg   | Without Peg |
| 55       | 54457-0552 | 54457-0556  |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- For use on horizontal backplanes or mezzanine-style connections on daughtercards
- Used at end of either backplane or daughter board, with guide/polarization feature in middle
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection

### Reference Information

Product Specification: PS-54491-016

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 55351, 55357 and 55376 Type C 5-row plugs

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 35 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: 0.8µm (31µ") min. Gold over Nickel

Module: Gray glass-filled PBT, UL 94V-0

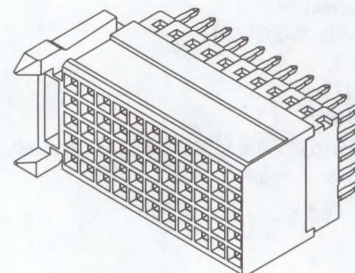
Operating Temperature: -55 to +125°C



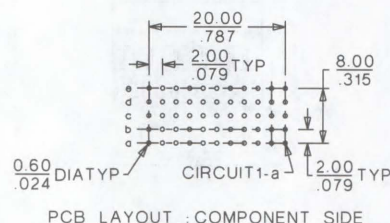
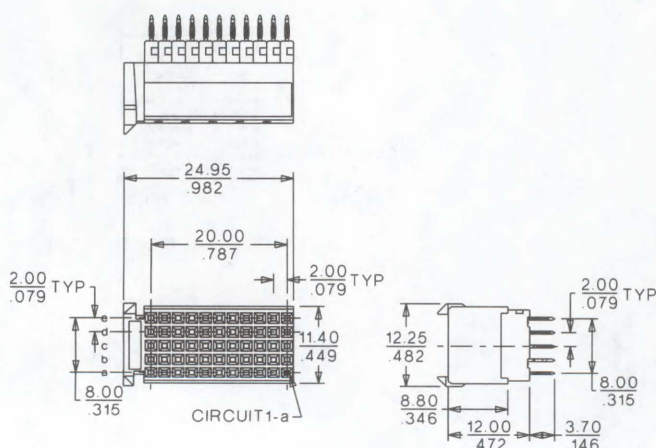
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54491**

**Type C, Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 55       | 54491-0559 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- Used at end of daughterboard, with guide/polarization feature in middle
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Press-fit pegs provide retention and polarization
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

Mates With: 55616 and 55617 Type CR 5-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Contact Area—0.8 $\mu$ m (31 $\mu$ ) min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ ) min. Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

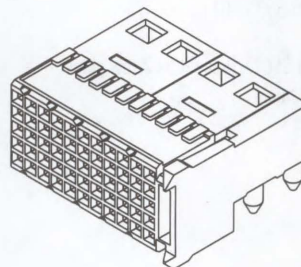
Operating Temperature: -55 to +125°C



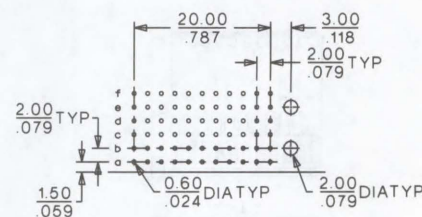
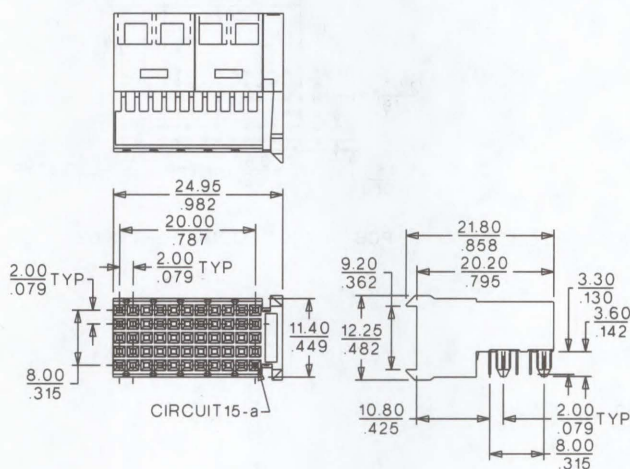
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

54750

Type CR, Right Angle



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |
|----------|------------|
| 55       | 54750-0559 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- Upper shield for grounding
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Press-fit pegs provide retention and polarization
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

Mates With: 55616 and 55617 Type CR 5+2-row plugs

Use With: 59105 lower shield

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Terminal: Contact Area— $0.8\mu\text{m}$  ( $31\mu$ ) min. Gold over Nickel

Press-Fit Area— $0.5\mu\text{m}$  ( $20\mu$ ) min. Tin/Lead over Nickel

Shield: Contact Area—Gold over Nickel

Press-Fit Area—Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

Upper Shield: Phosphor Bronze

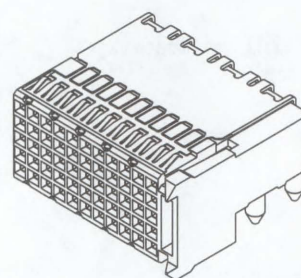
Operating Temperature: -55 to +125°C



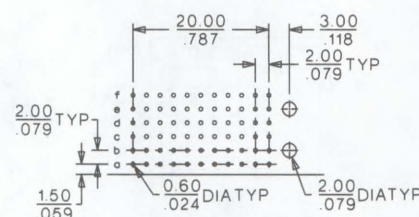
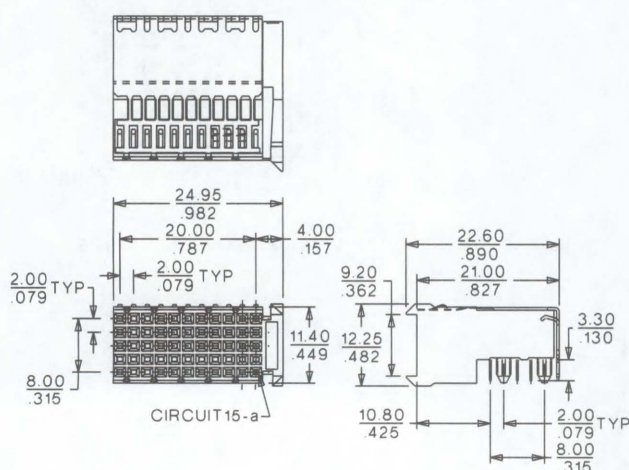
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54750**

**Type CR, Right Angle  
With Upper Shield**



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT : COMPONENT SIDE

## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 55       | 54750-0558 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Mixed layout: 5 rows by 11 columns for signal; three cavities to accept high current, coaxial or fiber optic contacts per DIN 41626 (Contacts ordered separately)
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Five-press-fit PCB pegs provide retention and polarization
- Center guide and keying feature
- Surface Mount Compatible

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

Mates With: 55614 and 55615 Type M 5-row plugs

Use With: 59105 lower shield and 51165 code key

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Contact Area—0.8 $\mu$ m (31 $\mu$ " min. Gold over Nickel

Press-Fit Area—0.5 $\mu$ m (20 $\mu$ " min. Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

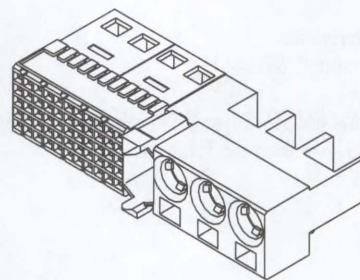
Operating Temperature: -55 to +125°C



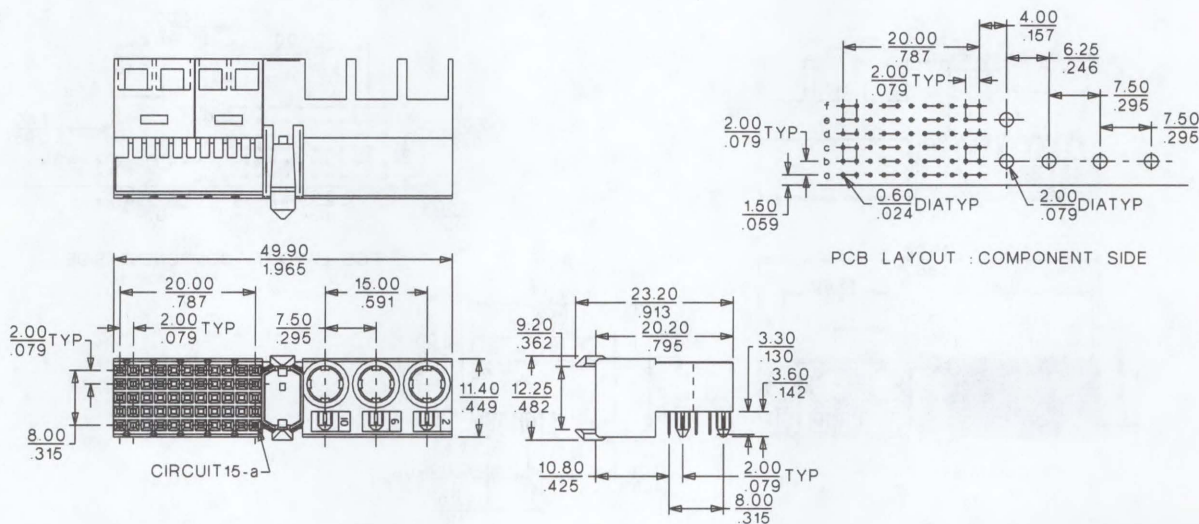
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

### 54780

### Type M, Right Angle



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 55       | 54780-0559 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Mixed layout: 5 rows by 11 columns for signal; three cavities to accept high current, coaxial or fiber optic contacts per DIN 41626 (Contacts ordered separately)
- Upper shield for grounding
- Split-beam receptacle contact design provides smooth insertion and strong contact retention
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Five-press-fit PCB pegs provide retention and polarization
- Center guide and keying feature

### Reference Information

Product Specification: PS-55357-011

Packaging: Tube

Mates With: 55614 and 55615 Type M 5+2-row plugs

Use With: 59105 lower shield and 51165 code key

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: White glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating:

Terminal: Contact Area— $0.8\mu\text{m}$  ( $31\mu$ ) min. Gold over Nickel

Press-Fit Area— $0.5\mu\text{m}$  ( $20\mu$ ) min. Tin/Lead over Nickel

Shield: Contact Area—Gold over Nickel

Press-Fit Area—Tin/Lead over Nickel

Cover: White glass-filled LCP, UL 94V-0

Upper Shield: Phosphor Bronze

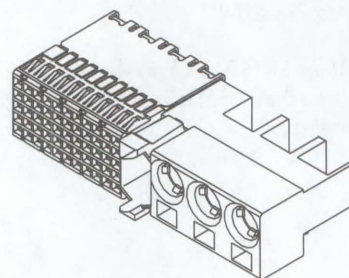
Operating Temperature: -55 to +125°C



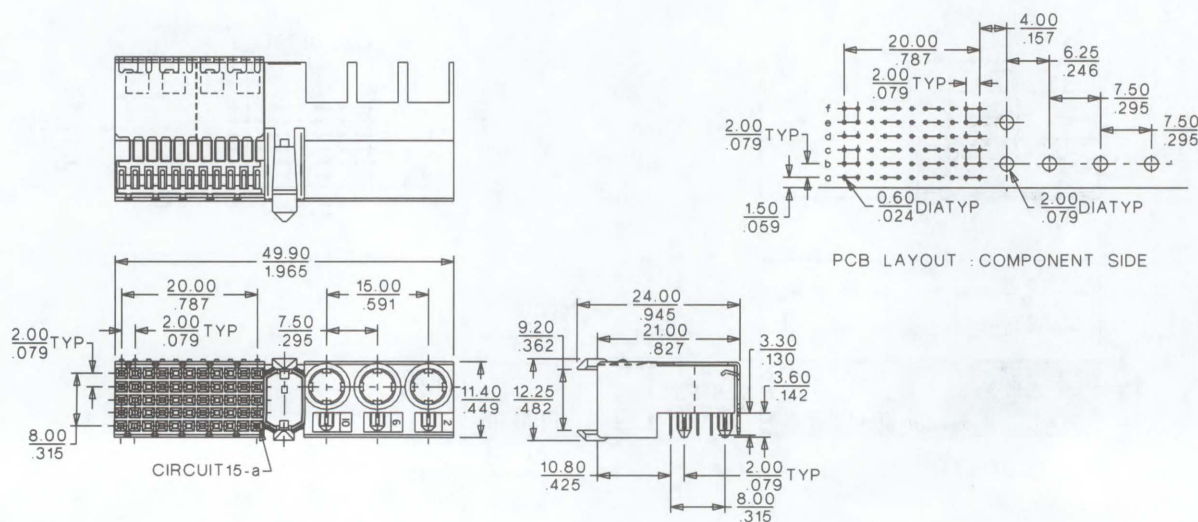
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Receptacle

**54780**

### Type M, Right Angle With Upper Shield



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 55       | 54780-0558 |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Provides full system frame grounding
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Easy snap-in assembly
- Lower shield pins terminate in alternate holes in row f

### Reference Information

Product Specification: PS-55357-011

Packaging: Tray

Use With: 54457, 54603, 54750 and 54780 PCB receptacles

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Shield: Phosphor Bronze

Plating:

Contact Area—0.8 $\mu$ m (31 $\mu$ ) min. Gold over Nickel

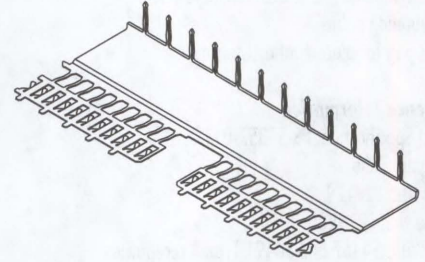
Press-Fit Area—0.5 $\mu$ m (20 $\mu$ ) min. Tin/Lead over Nickel

Operating Temperature: -55 to +125°C

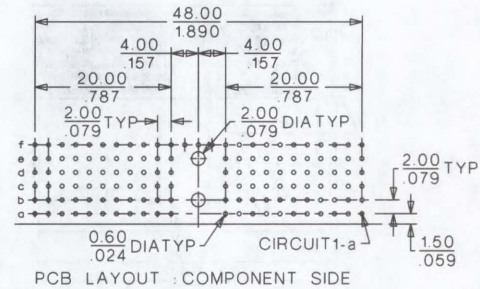
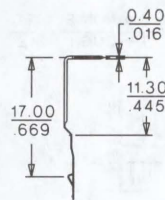
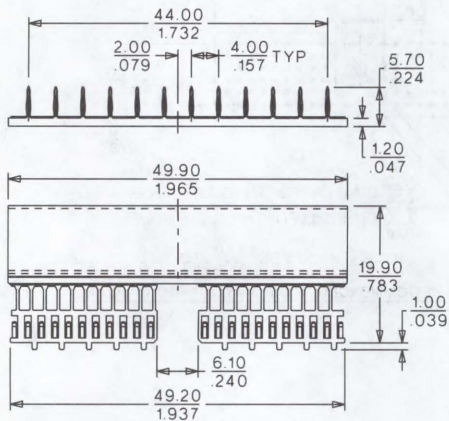


**2.00mm (.079") Pitch**  
**MZP™ Hard Metric**  
**Board-to-Board**  
**Lower Shield for Receptacle**

**59105**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 59105-0131

## ORDERING INFORMATION

| Type     | Order No.  |
|----------|------------|
| A        | 59105-0131 |
| B25      | 59105-0231 |
| B22      | 59105-0531 |
| B19      | 59105-0431 |
| C/ CR/ M | 59105-0331 |



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- 110 Circuits—5 rows by 22 columns
- 154 Circuits—7 rows by 22 columns
- Various pin layouts and lengths for feed-to, feed-through and hot swap options
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Center guide and keying feature
- Internal guide ribs to accommodate shield grounding points
- PCB peg for placement assistance

## Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 54457 and 54491 Type A receptacles

Use With: 51166 code key

Designed In: Millimeters

## Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

## Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: 0.8µm (31µ") min. Gold over Nickel

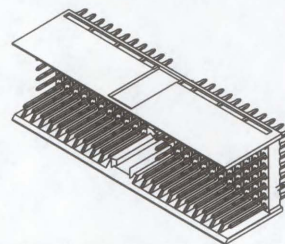
Operating Temperature: -55 to +125°C



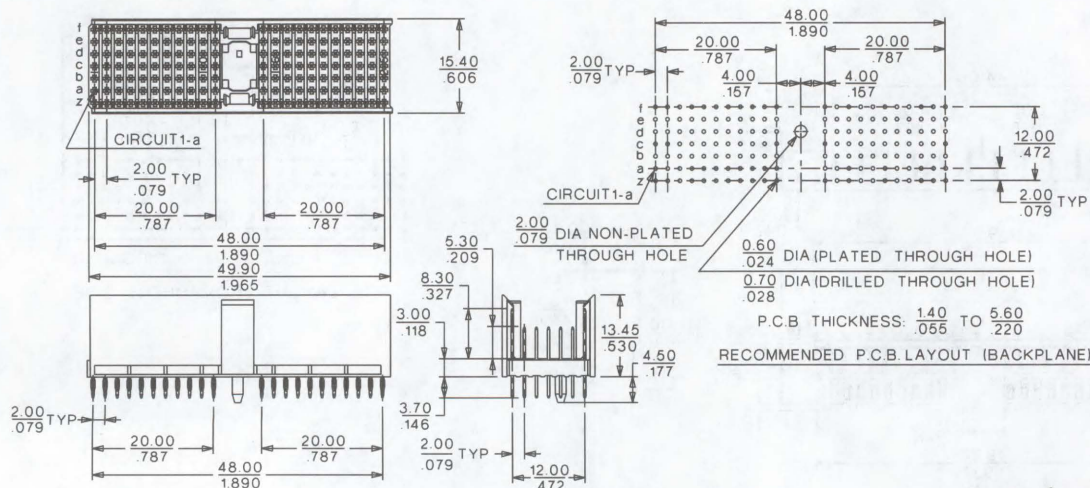
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

### 55357/55376/55502/ 55541

### Type A, Vertical and CompactPCI\* Type



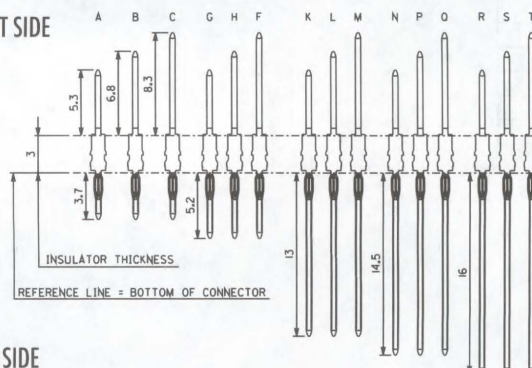
## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 55376-1549

## PIN VARIATION

## FRONT SIDE



## REAR SIDE

\*CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group

Note: See next page for additional ordering details





# 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board Sequence Chart PCB Plug, Type A

Backplane Connector Systems

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|-----|------------|-----------------------------------------------------------------------------------------------------|----------|-----------|-----|------------|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|---------------------------------|
| <table><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr></table> | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | <table><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr><tr><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td>K</td><td></td></tr></table> | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | K | K | K | K | K | K | K | K | K | K |  | z<br>a<br>b<br>c<br>d<br>e<br>f |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K             | K         | K   | K          | K                                                                                                   | K        | K         | K   | K          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 2524232221201918171615                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1110987654321 |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>110</td><td>55357-1109</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Circuits      | Order No. | 110 | 55357-1109 | <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>154</td><td>55357-1549</td></tr></table> | Circuits | Order No. | 154 | 55357-1549 |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| Circuits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Order No.     |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 55357-1109    |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| Circuits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Order No.     |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 154                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 55357-1549    |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| <table><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr></table> | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | <table><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td></td></tr></table> | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | A | A | A | A | A | A | A | A | A | A |  | z<br>a<br>b<br>c<br>d<br>e<br>f |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A             | A         | A   | A          | A                                                                                                   | A        | A         | A   | A          |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 2524232221201918171615                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1110987654321 |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>110</td><td>55376-1109</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Circuits      | Order No. | 110 | 55376-1109 | <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>154</td><td>55376-1549</td></tr></table> | Circuits | Order No. | 154 | 55376-1549 |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| Circuits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Order No.     |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 55376-1109    |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| Circuits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Order No.     |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |
| 154                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 55376-1549    |           |     |            |                                                                                                     |          |           |     |            |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |                                 |

## CompactPCI™ Type

|                                                                                                                                                                         |                         | z<br>a<br>b<br>c<br>d<br>e<br>f |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------|-----------------|-----|------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|-----------------|-----|------------|-----------------------|--|
| 25 24 23 22 21 20 19 18 17 16 15                                                                                                                                        | 11 10 9 8 7 6 5 4 3 2 1 |                                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| <table border="1"> <tr><th>Circuits</th><th>Order No.</th><th>CompactPCI Type</th></tr> <tr><td>154</td><td>55502-1541</td><td>P1/Feed-to/Hot Swap</td></tr> </table>   | Circuits                | Order No.                       | CompactPCI Type | 154 | 55502-1541 | P1/Feed-to/Hot Swap   | <table border="1"> <tr><th>Circuits</th><th>Order No.</th><th>CompactPCI Type</th></tr> <tr><td>154</td><td>55502-1542</td><td>P1/P4</td></tr> </table>                 | Circuits | Order No. | CompactPCI Type | 154 | 55502-1542 | P1/P4                 |  |
| Circuits                                                                                                                                                                | Order No.               | CompactPCI Type                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| 154                                                                                                                                                                     | 55502-1541              | P1/Feed-to/Hot Swap             |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| Circuits                                                                                                                                                                | Order No.               | CompactPCI Type                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| 154                                                                                                                                                                     | 55502-1542              | P1/P4                           |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
|                                                                                                                                                                         |                         | z<br>a<br>b<br>c<br>d<br>e<br>f |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| 25 24 23 22 21 20 19 18 17 16 15                                                                                                                                        | 11 10 9 8 7 6 5 4 3 2 1 |                                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| <table border="1"> <tr><th>Circuits</th><th>Order No.</th><th>CompactPCI Type</th></tr> <tr><td>154</td><td>55541-1542</td><td>P1/Feed-thru/Hot Swap</td></tr> </table> | Circuits                | Order No.                       | CompactPCI Type | 154 | 55541-1542 | P1/Feed-thru/Hot Swap | <table border="1"> <tr><th>Circuits</th><th>Order No.</th><th>CompactPCI Type</th></tr> <tr><td>132</td><td>55541-1321</td><td>P4/Computer-Telephony</td></tr> </table> | Circuits | Order No. | CompactPCI Type | 132 | 55541-1321 | P4/Computer-Telephony |  |
| Circuits                                                                                                                                                                | Order No.               | CompactPCI Type                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| 154                                                                                                                                                                     | 55541-1542              | P1/Feed-thru/Hot Swap           |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| Circuits                                                                                                                                                                | Order No.               | CompactPCI Type                 |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |
| 132                                                                                                                                                                     | 55541-1321              | P4/Computer-Telephony           |                 |     |            |                       |                                                                                                                                                                         |          |           |                 |     |            |                       |  |

\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 110 Circuits—5 rows by 22 columns
- Used for card extender and reverse female backplane applications
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Center guide and keying feature
- Internal guide ribs to accommodate shield grounding points

### Reference Information

Product Specification: PS-54491-016  
 Packaging: Tube  
 UL File No.: E29179  
 CSA File No.: LR19980  
 Mates With: 54457 and 54491 Type A receptacles  
 Use With: 51166 code key  
 Designed In: Millimeters

### Electrical

Voltage: 500V  
 Current: 1.0A  
 Contact Resistance: 35 milliohms max.  
 Dielectric Withstanding Voltage: 750V AC/1 min.  
 Insulation Resistance: 10,000 Megohms min.

### Physical

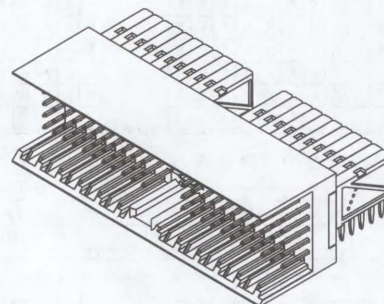
Housing: Gray glass-filled PBT, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: Contact Area— $0.8\mu\text{m}$  ( $31\mu$ ) min. Gold over Nickel  
 Press-Fit Area— $0.5\mu\text{m}$  ( $20\mu$ ) min. Tin/Lead over Nickel  
 Module: Gray glass-filled PBT, UL 94V-0  
 Operating Temperature: -55 to +125°C



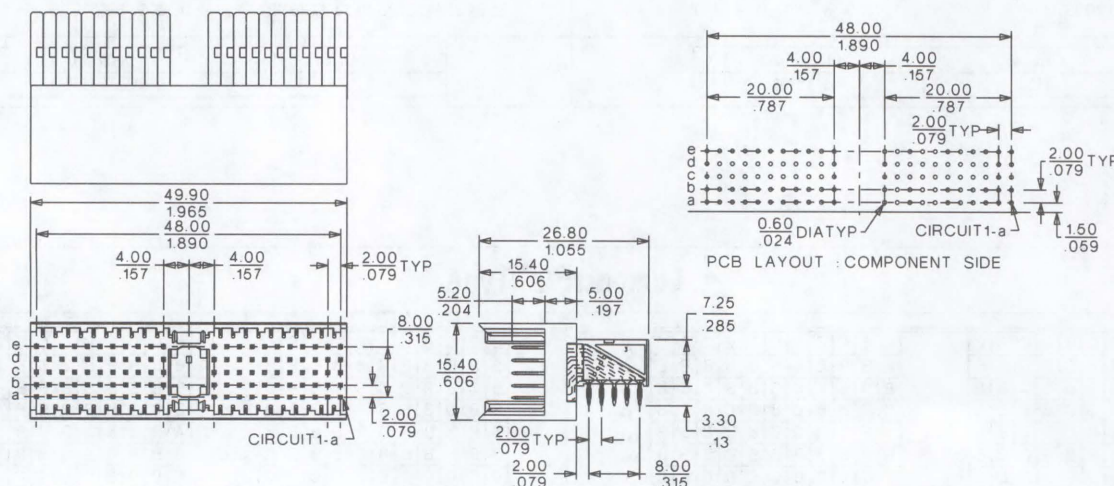
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

**55351**

**Type A, Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 110      | 55351-1109 |



**molex®** 2.00mm (.079") Pitch  
MZP™ Hard Metric  
Board-to-Board  
PCB Plug

## Features and Benefits

- 125 Circuits—5 rows by 25 columns
- 175 Circuits—7 rows by 25 columns
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points

### Reference Information

Product Specification: PS-55357-011

**Packaging:** Tube

UL File No.: E29179 (only 55376)

CSA File No.: LR19980 (only 55376)

Mates With: 54457 and 54491 Type B receptacles

Designed In: Millimeters

## Electrical

Voltage: 500V

Current: 1.0A

**Contact Resistance:** 30 milliohms max.

**Dielectric Withstanding Voltage: 750V AC/1 min.**

Insulation Resistance: 10,000 Megohms min.

## Physical

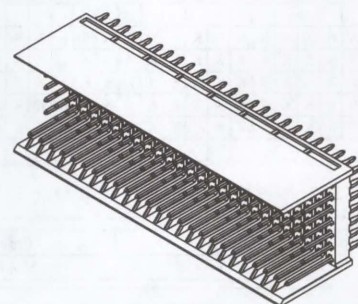
Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

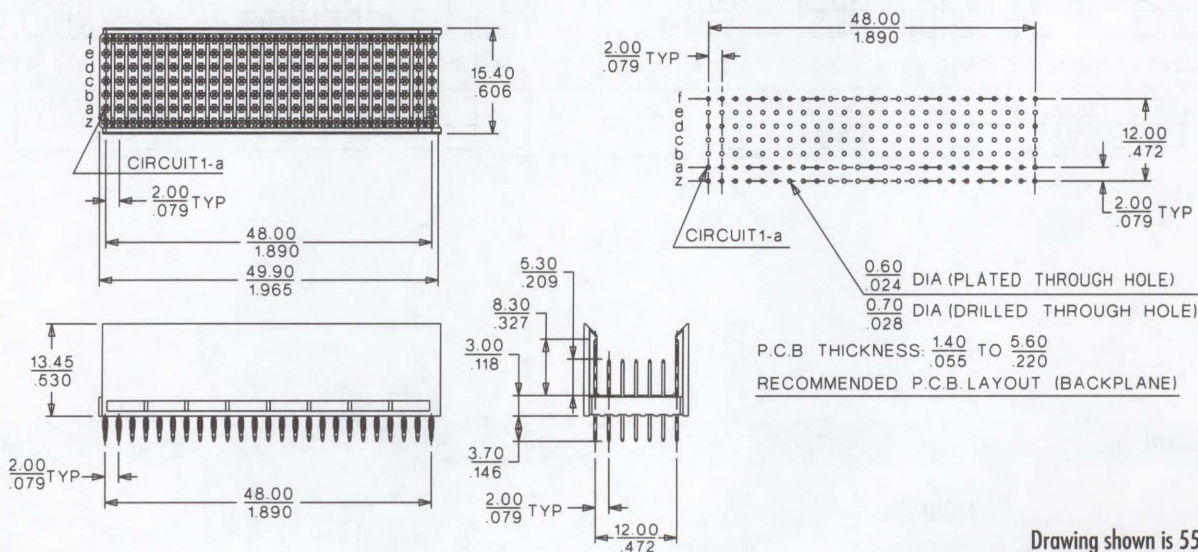
Plating: 0.8 $\mu$ m (31 $\mu$ " ) min. Gold over Nickel

Operating Temperature: -55 to +125°C

**55357/55376**  
**Type B, Vertical**



**CATALOG DRAWING (FOR REFERENCE ONLY)**



Drawing shown is 55376-1759

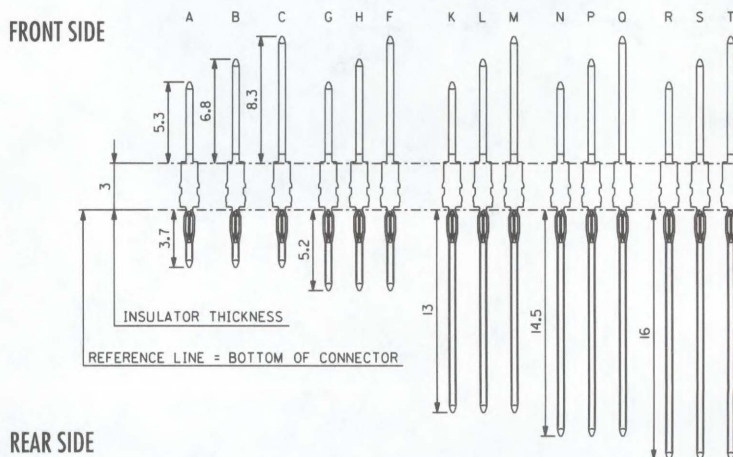
**Note:** See next page for additional ordering details.



**molex**® 2.00mm (.079") Pitch  
**MZP™ Hard Metric**  
**Board-to-Board**  
**Sequence Chart**  
**PCB Plug, Type B**

| <p>25242322212019181716151413121110987654321</p> <table border="1"> <tr> <th>Circuits</th> <th>Order No.</th> </tr> <tr> <td>125</td> <td>55357-1259</td> </tr> </table> | Circuits   | Order No. | 125 | 55357-1259 | <p>25242322212019181716151413121110987654321</p> <table border="1"> <tr> <th>Circuits</th> <th>Order No.</th> </tr> <tr> <td>175</td> <td>55357-1759</td> </tr> </table> | Circuits | Order No. | 175 | 55357-1759 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|-----|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|-----|------------|
| Circuits                                                                                                                                                                 | Order No.  |           |     |            |                                                                                                                                                                          |          |           |     |            |
| 125                                                                                                                                                                      | 55357-1259 |           |     |            |                                                                                                                                                                          |          |           |     |            |
| Circuits                                                                                                                                                                 | Order No.  |           |     |            |                                                                                                                                                                          |          |           |     |            |
| 175                                                                                                                                                                      | 55357-1759 |           |     |            |                                                                                                                                                                          |          |           |     |            |
| <p>25242322212019181716151413121110987654321</p> <table border="1"> <tr> <th>Circuits</th> <th>Order No.</th> </tr> <tr> <td>125</td> <td>55376-1259</td> </tr> </table> | Circuits   | Order No. | 125 | 55376-1259 | <p>25242322212019181716151413121110987654321</p> <table border="1"> <tr> <th>Circuits</th> <th>Order No.</th> </tr> <tr> <td>175</td> <td>55376-1759</td> </tr> </table> | Circuits | Order No. | 175 | 55376-1759 |
| Circuits                                                                                                                                                                 | Order No.  |           |     |            |                                                                                                                                                                          |          |           |     |            |
| 125                                                                                                                                                                      | 55376-1259 |           |     |            |                                                                                                                                                                          |          |           |     |            |
| Circuits                                                                                                                                                                 | Order No.  |           |     |            |                                                                                                                                                                          |          |           |     |            |
| 175                                                                                                                                                                      | 55376-1759 |           |     |            |                                                                                                                                                                          |          |           |     |            |

**PIN VARIATION**





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 154 Circuits—7 rows by 22 columns
- 133 Circuits—7 rows by 19 columns
- Various pin layouts and lengths for feed-to, feed-through and hot swap options
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points

### Reference Information

Product Specification: PS-55357-011  
 Packaging: Tube  
 UL File No.: E29179  
 CSA File No.: LR19980  
 Mates With: 54603 Type B receptacles  
 Designed In: Millimeters

### Electrical

Voltage: 500V  
 Current: 1.0A  
 Contact Resistance: 30 milliohms max.  
 Dielectric Withstanding Voltage: 750V AC/1 min.  
 Insulation Resistance: 10,000 Megohms min.

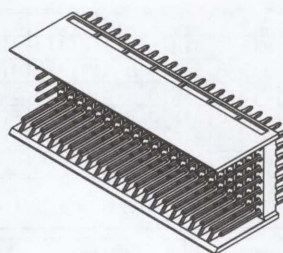
### Physical

Housing: Gray glass-filled PBT, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: 0.8µm (31µ") min. Gold over Nickel  
 Operating Temperature: -55 to +125°C

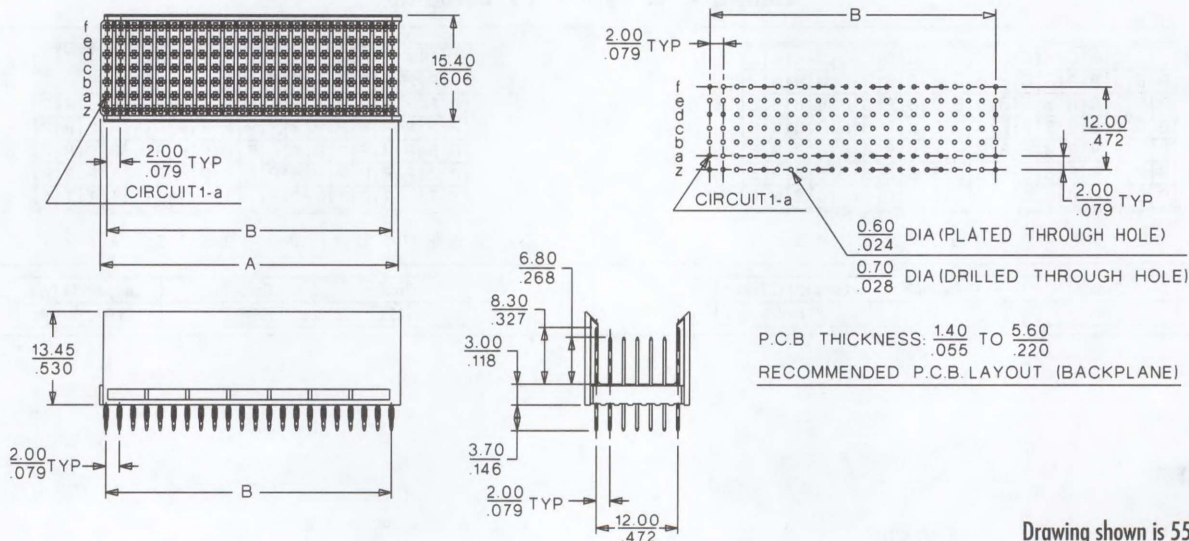


## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

### 55501/55540 Type B, Vertical CompactPCI\* Type



## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 55501-1541

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Columns | Order No.  |            | Dimension     |               |
|----------|---------|------------|------------|---------------|---------------|
|          |         | Short Tail | Long Tail  | A             | B             |
| 154      | 22      | 55501-1541 | 55540-1541 | 43.90 (1.728) | 42.00 (1.654) |
| 133      | 19      | 55501-1331 | 55540-1331 | 37.90 (1.492) | 36.00 (1.417) |

\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group

Note: See next page for additional ordering details.





## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board Sequence Chart PCB Plug, Type B

## CompactPCI\* Type/ 22 Columns

[illegible]

22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

| Circuits | Order No.  | CompactPCI Type |
|----------|------------|-----------------|
| 154      | 55501-1541 | P2/P5 Feed-to   |

[illegible]

22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

| Circuits | Order No.  | CompactPCI Type    |
|----------|------------|--------------------|
| 154      | 55540-1541 | P2/P5 Feed-through |

## CompactPCI Type/ 19 Columns

[illegible]

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

| Circuits | Order No.  | CompactPCI Type |
|----------|------------|-----------------|
| 133      | 55501-1331 | P3 Feed-to      |

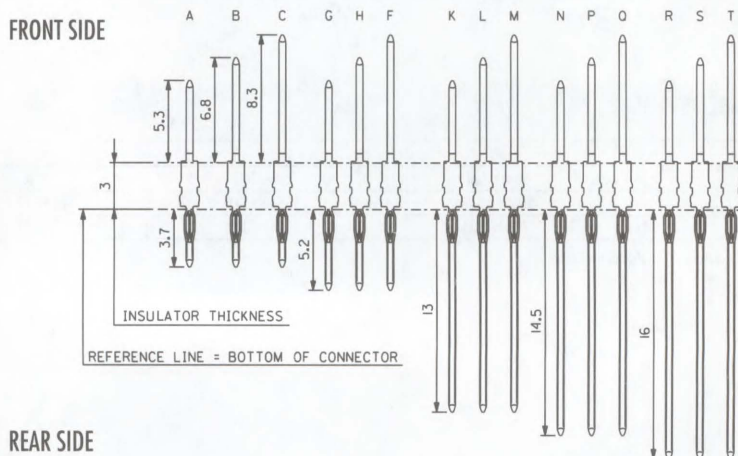
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |

Z  
a  
b  
c  
d  
e

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

| Circuits | Order No.  | CompactPCI Type |
|----------|------------|-----------------|
| 133      | 55540-1331 | P3 Feed-through |

## PIN VARIATION



\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group.



**molex®** 2.00mm (.079") Pitch  
MZP™ Hard Metric  
Board-to-Board  
PCB Plug

### Features and Benefits

- 125 Circuits—5 rows by 25 columns
- Used for card extender and reverse female backplane applications
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points

### Reference Information

Product Specification: PS-54491-016

**Packaging:** Tube

UL File No.: E29179

CSA File No.: LR19980

**Mates With: 54457 and 54491 Type B receptacles**

Designed In: Millimeters

## Electrical

Voltage: 500V

Current: 1.0A

**Contact Resistance:** 35 milliohms max.

**Dielectric Withstanding Voltage:** 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: Contact Area—0.8 $\mu$ m (31 $\mu$ " ) min. Gold

over Nickel

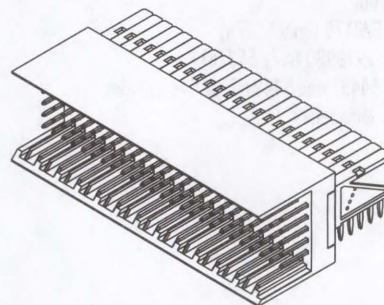
Press-Fit Area—0.5μm (20μ") min. Tin/Lead

over Nickel

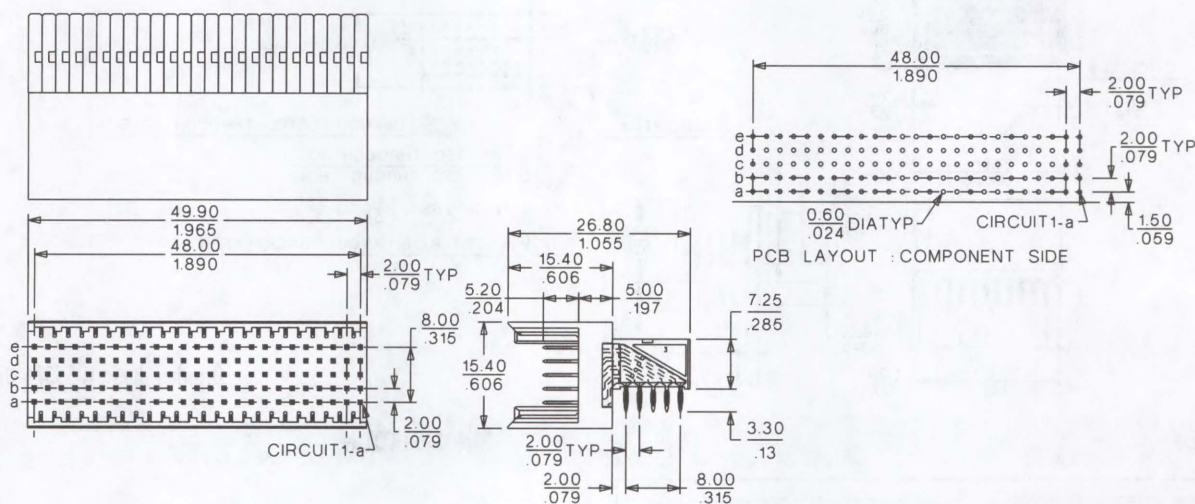
Module: Gray glass-filled PBT, UL 94V-0

Operating Temperature: -55 to +125°C

**55351**  
**Type B, Right Angle**



**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION

|                 |                  |
|-----------------|------------------|
| <b>Circuits</b> | <b>Order No.</b> |
| 125             | 55351-1259       |



## FEATURES AND BENEFITS

## Features and Benefits

- 55 Circuits—5 rows by 11 columns  
77 Circuits—7 rows by 11 columns
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points
- PCB peg for placement assistance

## Reference Information

Product Specification: PS-55357-011

Packaging: Tube

UL File No.: E29179 (only 55376)

CSA File No.: LR19980 (only 55376)

Mates With: 54457 and 54491 Type C receptacles

Designed In: Millimeters

## Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 30 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

## Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: 0.8µm (31µ") min. Gold over Nickel

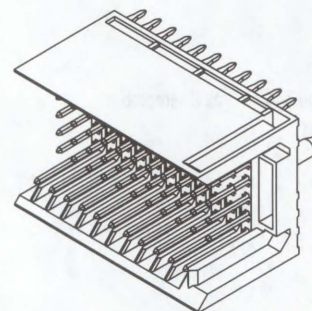
Operating Temperature: -55 to +125°C



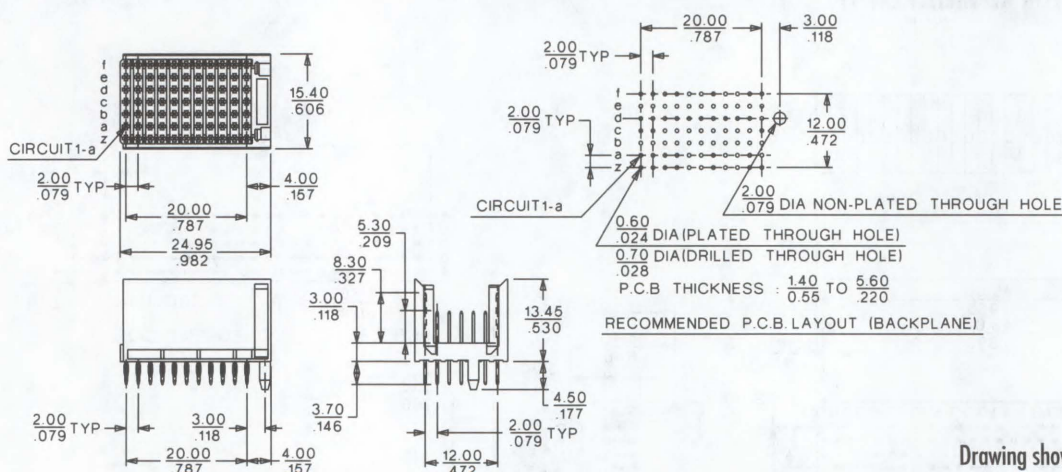
# 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

55357/55376

Type C, Vertical



## CATALOG DRAWING (FOR REFERENCE ONLY)



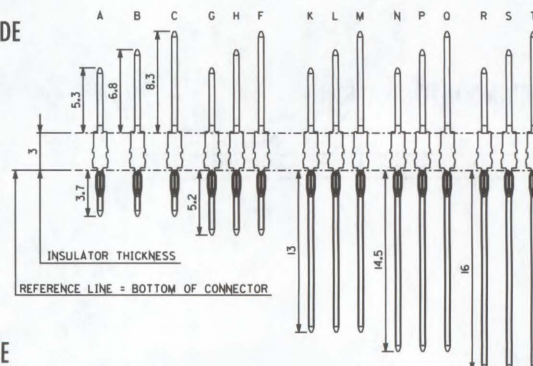
Drawing shown is 55376-0779

## SEQUENCE

| <table border="1"> <thead> <tr> <th>Circuits</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>55</td> <td>55357-0559</td> </tr> </tbody> </table> | Circuits   | Order No. | 55 | 55357-0559 | <table border="1"> <thead> <tr> <th>Circuits</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>77</td> <td>55376-0779</td> </tr> </tbody> </table> | Circuits | Order No. | 77 | 55376-0779 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|----|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|----|------------|
| Circuits                                                                                                                                                 | Order No.  |           |    |            |                                                                                                                                                          |          |           |    |            |
| 55                                                                                                                                                       | 55357-0559 |           |    |            |                                                                                                                                                          |          |           |    |            |
| Circuits                                                                                                                                                 | Order No.  |           |    |            |                                                                                                                                                          |          |           |    |            |
| 77                                                                                                                                                       | 55376-0779 |           |    |            |                                                                                                                                                          |          |           |    |            |
|                                                                                                                                                          |            |           |    |            |                                                                                                                                                          |          |           |    |            |
| <table border="1"> <thead> <tr> <th>Circuits</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>55</td> <td>55376-0559</td> </tr> </tbody> </table> | Circuits   | Order No. | 55 | 55376-0559 | <table border="1"> <thead> <tr> <th>Circuits</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>77</td> <td>55376-0779</td> </tr> </tbody> </table> | Circuits | Order No. | 77 | 55376-0779 |
| Circuits                                                                                                                                                 | Order No.  |           |    |            |                                                                                                                                                          |          |           |    |            |
| 55                                                                                                                                                       | 55376-0559 |           |    |            |                                                                                                                                                          |          |           |    |            |
| Circuits                                                                                                                                                 | Order No.  |           |    |            |                                                                                                                                                          |          |           |    |            |
| 77                                                                                                                                                       | 55376-0779 |           |    |            |                                                                                                                                                          |          |           |    |            |

## PIN VARIATION

## FRONT SIDE



## REAR SIDE



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 55 Circuits—5 rows by 11 columns
- Used for card extender and reverse female backplane applications
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points

### Reference Information

Product Specification: PS-54491-016

Packaging: Tube

UL File No.: E29179

CSA File No.: LR19980

Mates With: 54457 and 54491 Type C receptacles

Designed In: Millimeters

### Electrical

Voltage: 500V

Current: 1.0A

Contact Resistance: 35 milliohms max.

Dielectric Withstanding Voltage: 750V AC/1 min.

Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: Gray glass-filled PBT, UL 94V-0

Contact: Phosphor Bronze

Plating: Contact Area— $0.8\mu\text{m}$  ( $31\mu$ ) min. Gold over Nickel

Press-Fit Area— $0.5\mu\text{m}$  ( $20\mu$ ) min. Tin/Lead over Nickel

Module: Gray glass-filled PBT, UL 94V-0

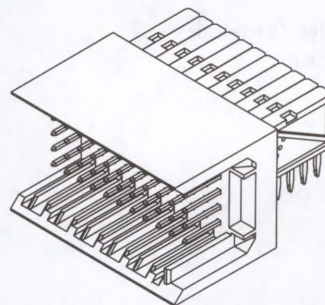
Operating Temperature: -55 to +125°C



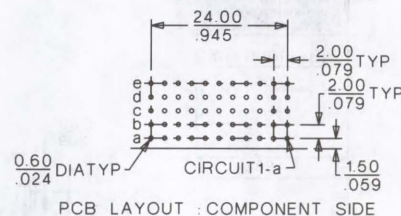
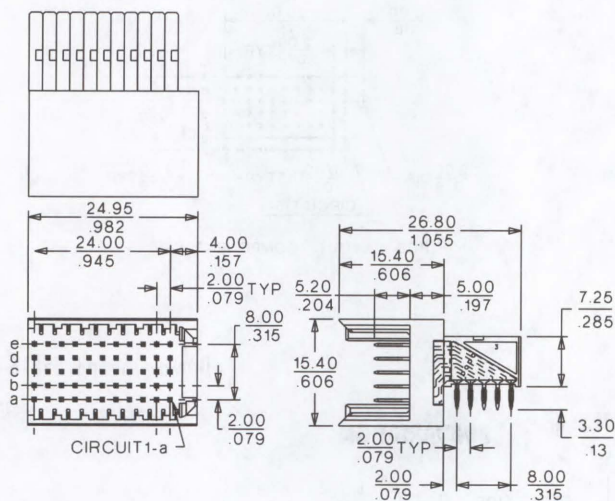
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

### 55351

### Type C, Right Angle



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 55       | 55351-0559 |



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- 55 Circuits—5 rows by 11 columns
- 77 Circuits—7 rows by 11 columns
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points
- PCB peg for placement assistance

## Reference Information

Product Specification: PS-55357-011  
 Packaging: Tube  
 Mates With: 54750 Type CR receptacle  
 Designed In: Millimeters

## Electrical

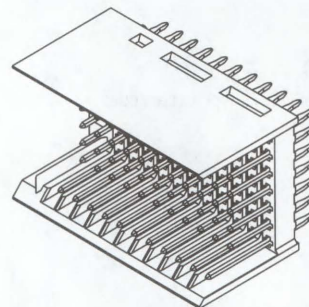
Voltage: 500V  
 Current: 1.0A  
 Contact Resistance: 30 milliohms max.  
 Dielectric Withstanding Voltage: 750V AC/1 min.  
 Insulation Resistance: 10,000 Megohms min.

## Physical

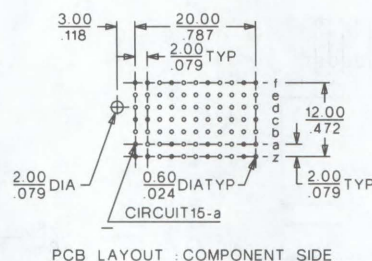
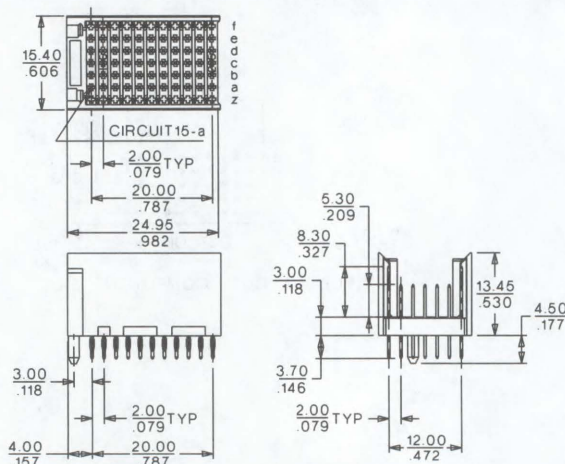
Housing: Gray glass-filled PBT, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: 0.8 $\mu$ m (31 $\mu$ in) min. Gold over Nickel  
 Operating Temperature: -55 to +125°C

**molex®** 2.00mm (.079") Pitch  
**MZP™ Hard Metric**  
**Board-to-Board**  
**PCB Plug**

**55616/55617**  
**Type CR, Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT : COMPONENT SIDE

Drawing shown is 55616-0779

## SEQUENCE

|                                                                                                                                                                                         |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|--|--|--|--|--|--|--|---------------------------------|-----------|----|------------|--|
| <div><div></div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div></div></div> |            |  |  |  |  |  |  |  |  |  | Z<br>a<br>b<br>c<br>d<br>e<br>f |           |    |            |  |
| 2524232221201918171615                                                                                                                                                                  |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>55</td><td>55616-0559</td></tr></table>                                                                                      |            |  |  |  |  |  |  |  |  |  | Circuits                        | Order No. | 55 | 55616-0559 |  |
| Circuits                                                                                                                                                                                | Order No.  |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| 55                                                                                                                                                                                      | 55616-0559 |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |

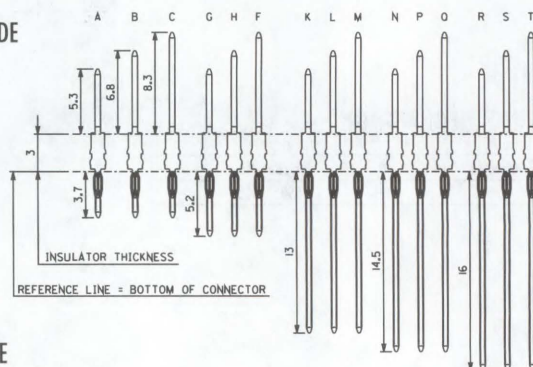
|                                                                                                                                                                                                                                          |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|--|--|--|--|--|--|--|---------------------------------|-----------|----|------------|--|
| <div><div></div><div>C C C C C C C C C C</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>A A A A A A A A A A</div><div>C C C C C C C C C C</div></div> |            |  |  |  |  |  |  |  |  |  | Z<br>a<br>b<br>c<br>d<br>e<br>f |           |    |            |  |
| 2524232221201918171615                                                                                                                                                                                                                   |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>77</td><td>55616-0779</td></tr></table>                                                                                                                                       |            |  |  |  |  |  |  |  |  |  | Circuits                        | Order No. | 77 | 55616-0779 |  |
| Circuits                                                                                                                                                                                                                                 | Order No.  |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| 77                                                                                                                                                                                                                                       | 55616-0779 |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |

|                                                                                                                                                                                         |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|--|--|--|--|--|--|--|---------------------------------|-----------|----|------------|--|
| <div><div></div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div></div></div> |            |  |  |  |  |  |  |  |  |  | Z<br>a<br>b<br>c<br>d<br>e<br>f |           |    |            |  |
| 2524232221201918171615                                                                                                                                                                  |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>55</td><td>55617-0559</td></tr></table>                                                                                      |            |  |  |  |  |  |  |  |  |  | Circuits                        | Order No. | 55 | 55617-0559 |  |
| Circuits                                                                                                                                                                                | Order No.  |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| 55                                                                                                                                                                                      | 55617-0559 |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |

|                                                                                                                                                                                                                                          |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|--|--|--|--|--|--|--|---------------------------------|-----------|----|------------|--|
| <div><div></div><div>T T T T T T T T T T</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>K K K K K K K K K K</div><div>T T T T T T T T T T</div></div> |            |  |  |  |  |  |  |  |  |  | Z<br>a<br>b<br>c<br>d<br>e<br>f |           |    |            |  |
| 2524232221201918171615                                                                                                                                                                                                                   |            |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| <table><tr><td>Circuits</td><td>Order No.</td></tr><tr><td>77</td><td>55617-0779</td></tr></table>                                                                                                                                       |            |  |  |  |  |  |  |  |  |  | Circuits                        | Order No. | 77 | 55617-0779 |  |
| Circuits                                                                                                                                                                                                                                 | Order No.  |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |
| 77                                                                                                                                                                                                                                       | 55617-0779 |  |  |  |  |  |  |  |  |  |                                 |           |    |            |  |

## PIN VARIATION

## FRONT SIDE



## REAR SIDE



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Mixed layout: 5 or 7 rows by 11 columns for signal; three cavities to accept high current, coaxial or fiber optic contacts per DIN 41626 (Contacts ordered separately)
- M style press-fit pin contact design creates four points of contact for a gas-tight connection
- Internal guide ribs to accommodate shield grounding points
- Five press-fit PCB pegs provide retention and polarization
- Center guide and keying feature

### Reference Information

Product Specification: PS-55357-011  
 Packaging: Tube  
 Mates With: 54780 Type M receptacle  
 Use With: 51166 code key  
 Designed In: Millimeters

### Electrical

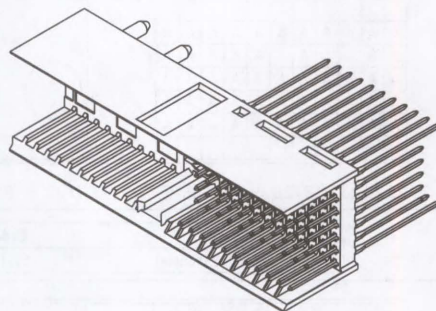
Voltage: 500V  
 Current: 1.0A  
 Contact Resistance: 30 milliohms max.  
 Dielectric Withstanding Voltage: 750V AC/1 min.  
 Insulation Resistance: 10,000 Megohms min.

### Physical

Housing: Gray glass-filled PBT, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: 0.8µm (31µ") min. Gold over Nickel  
 Operating Temperature: -55 to +125°C

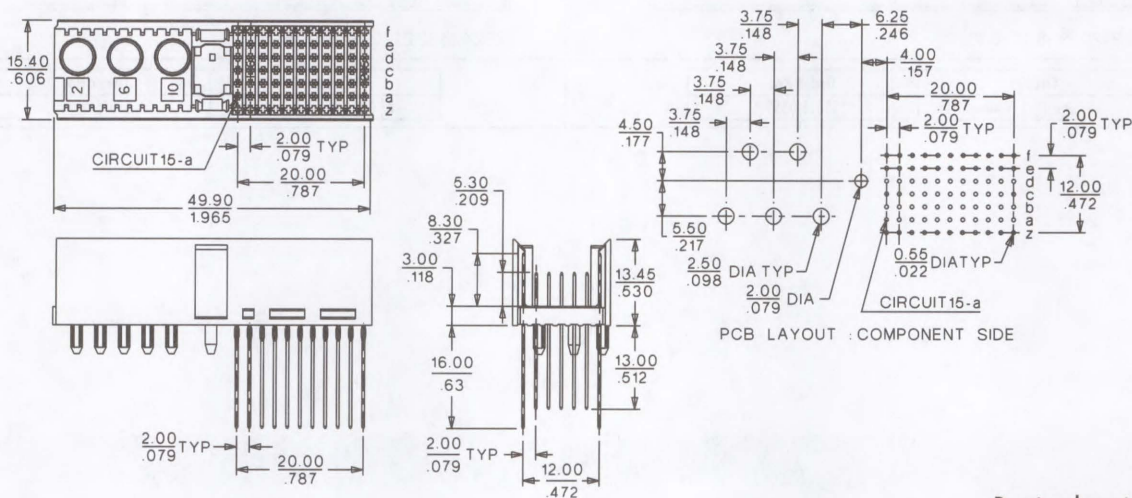
# molex® 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board PCB Plug

**55614/55615**  
**Type M, Vertical**



Backplane Connector Systems

## CATALOG DRAWING (FOR REFERENCE ONLY)



Drawing shown is 55615-0779

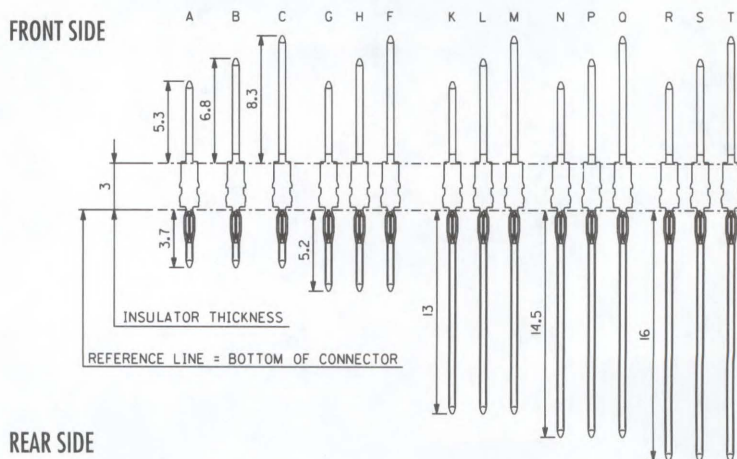
Note: See next page for additional ordering details.



**molex® 2.00mm (.079") Pitch**  
**MZP™ Hard Metric**  
**Board-to-Board**  
**Sequence Chart**  
**PCB Plug, Type M**

|                                                                                                                                           |                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <p>25 24 23 22 21 20 19 18 17 16 15      11 10 9 8 7 6 5 4 3 2 1</p> <p>Circuits: 55 (Signal); 3 (Various)<br/> Order No.: 55614-0559</p> | <p>25 24 23 22 21 20 19 18 17 16 15      11 10 9 8 7 6 5 4 3 2 1</p> <p>Circuits: 77 (Signal); 3 (Various)<br/> Order No.: 55614-0779</p> |
| <p>25 24 23 22 21 20 19 18 17 16 15</p> <p>Circuits: 55 (Signal); 3 (Various)<br/> Order No.: 55615-0559</p>                              | <p>25 24 23 22 21 20 19 18 17 16 15</p> <p>Circuits: 77 (Signal); 3 (Various)<br/> Order No.: 55615-0779</p>                              |

**PIN VARIATION**





**MALE PIN SEQUENCE REQUEST FORM**

Please use the below charts to design the pin sequencing that meets your needs. Choose your desired connector style and then fill in each position with the required pin type (A, B, ..., S, T).



## 2.00mm (.079") Pitch MZP™ Hard Metric Series Custom Pin Sequence Chart

## Type A Row

[illegible]

25 24 23 22 21 20 19 18 17 16 15      11 10 9 8 7 6 5 4 3 2 1

Column

## Type C Row

[illegible]

11 10 9 8 7 6 5 4 3 2 1  
Column

## Type CR

[illegible]

25 24 23 22 21 20 19 18 17 16 15  
Column

## Type B

[illegible]

25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1  
Column

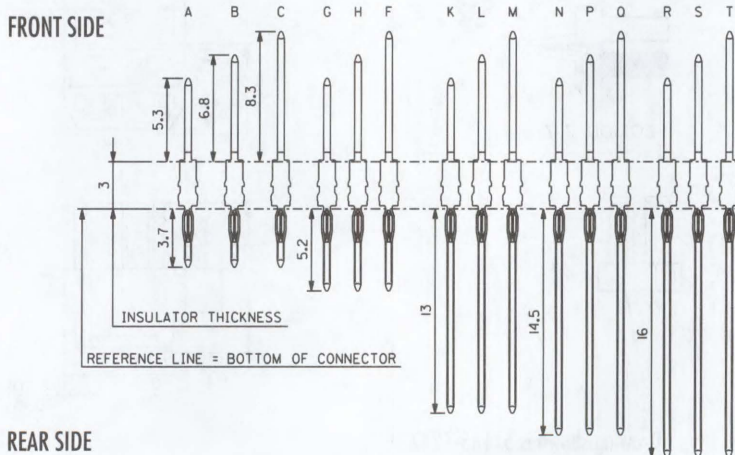
## Type M

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

25 24 23 22 21 20 19 18 17 16 15  
Column

Circle desired cavity position on right, and fill in signal portion on left.

### Pin Variation



REAR SIDE

Date: \_\_\_\_\_

E-mail: \_\_\_\_\_

Name: \_\_\_\_\_

Samples: ☐ No ☐ Yes, Quantity

Company: \_\_\_\_\_

**Special Requirements:**

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Provides polarization and mating protection
- Easy snap-fit assembly and frontal removal
- Various color and numerical coding options
- Industry standard style

### Reference Information

Product Specification: PS-55357-011

Packaging: Tray

Use With: 51165—54457, 54780 and 54491 PCB receptacles

Type A, M

51166—55351, 55357, 55376, 55502, 55541, 55614

and 55615 PCB plugs Type A, M

Designed In: Millimeters

### Physical

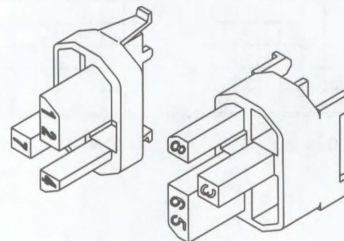
Housing: Glass-filled PA, UL 94V-0

Operating Temperature: -55 to +125°C



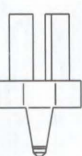
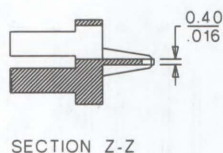
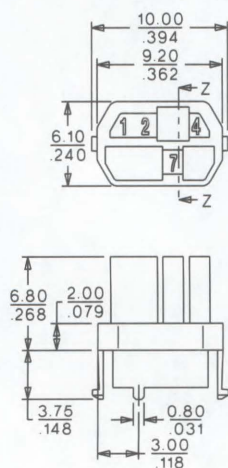
## 2.00mm (.079") Pitch MZP™ Hard Metric Board-to-Board Code Keys

51165/51166



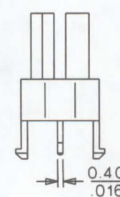
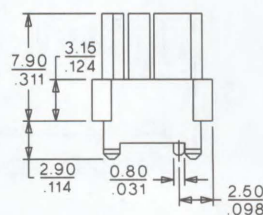
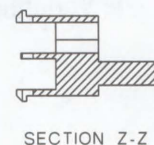
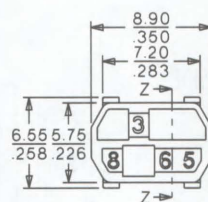
## CATALOG DRAWING (FOR REFERENCE ONLY)

Receptacle



Drawing shown is 51165-1247

Plug



Drawing shown is 51166-3568

Note: See next 2 pages for additional ordering details

## CODE KEYING OVERVIEW

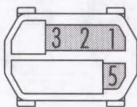
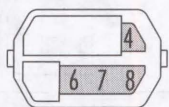
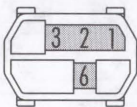
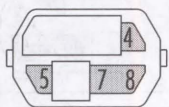
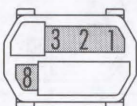
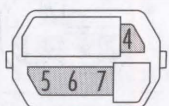
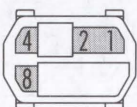
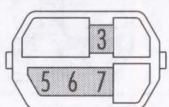
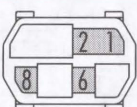
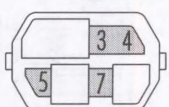
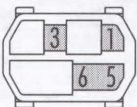
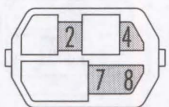
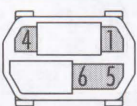
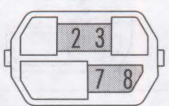
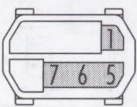
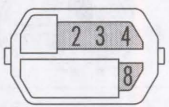
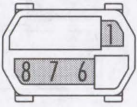
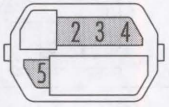
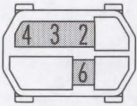
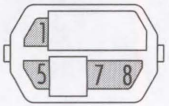
Code keys are used to provide polarization and mating protection. Male and female code keys are located in the multifunctional area of male and female housings (for Type A and M). Molex offers 21 keying combinations. Code keys are distinguished by both bright colors (RAL\* standard coloring) and numerical coding on the various size inserts. All colors and code numbers are in accordance with IEC 61076-4-101 standards. Keys are easily snap-fit in from the front, and also offer frontal removal.

Part numbers shown in bold are preferred types that will be used for the following applications:

- Cadmium yellow for CompactPCI† to identify 3.3V bus signalling
- Brilliant blue for CompactPCI to identify 5V bus signalling
- Reseda green to prevent accidental board insertion in VME64x on CompactPCI applications
- Strawberry red to prevent accidental board insertion in telephony applications

# **2.00mm (.079") Pitch** **MZP™ Hard Metric Series** **Code Keying**

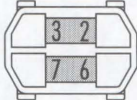
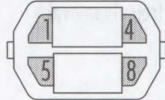
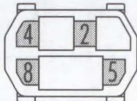
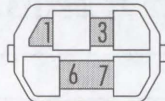
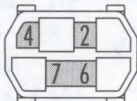
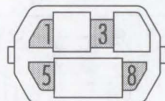
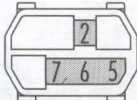
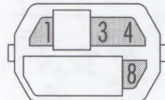
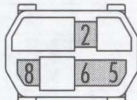
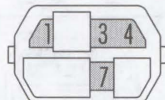
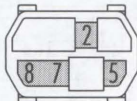
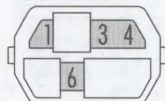
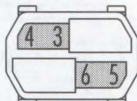
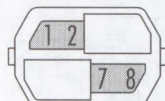
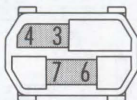
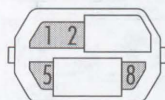
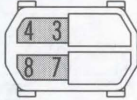
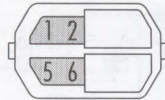
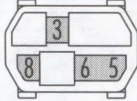
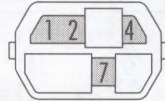
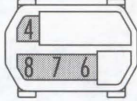
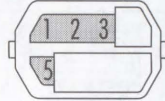
## MZP™ CODE KEYS

| Plug                                                                                |          |            | Color                                   | Receptacle |          |                                                                                       |
|-------------------------------------------------------------------------------------|----------|------------|-----------------------------------------|------------|----------|---------------------------------------------------------------------------------------|
| Coding Key                                                                          | Code No. | Order No.  |                                         | Order No.  | Code No. | Coding Key                                                                            |
|    | 1235     | 51166-1235 | Green Brown                             | 51165-4678 | 4678     |    |
|    | 1236     | 51166-1236 | Nut Brown                               | 51165-4578 | 4578     |    |
|   | 1238     | 51166-1238 | Ultramarine Blue                        | 51165-4567 | 4567     |   |
|  | 1248     | 51166-1248 | Strawberry Red<br>(CompactPCI/ Telecom) | 51165-3567 | 3567     |  |
|  | 1268     | 51166-1268 | Olive Yellow                            | 51165-3457 | 3457     |  |
|  | 1356     | 51166-1356 | Blue Lilac                              | 51165-2478 | 2478     |  |
|  | 1456     | 51166-1456 | Pastel Green                            | 51165-2378 | 2378     |  |
|  | 1567     | 51166-1567 | Brilliant Blue<br>(CompactPCI/ 5.0V)    | 51165-2348 | 2348     |  |
|  | 1678     | 51166-1678 | Salmon Pink                             | 51165-2345 | 2345     |  |
|  | 2346     | 51166-2346 | Purple Red                              | 51165-1578 | 1578     |  |

\*RAL is a trademark of the control organization for product assurance in Germany

†CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group



| Plug                                                                                |          |            | Color                                  | Receptacle |          |                                                                                       |
|-------------------------------------------------------------------------------------|----------|------------|----------------------------------------|------------|----------|---------------------------------------------------------------------------------------|
| Coding Key                                                                          | Code No. | Order No.  |                                        | Order No.  | Code No. | Coding Key                                                                            |
|    | 2367     | 51166-2367 | Stone Gray                             | 51165-1458 | 1458     |    |
|    | 2458     | 51166-2458 | Heather Violet                         | 51165-1367 | 1367     |    |
|    | 2467     | 51166-2467 | Yellow Orange                          | 51165-1358 | 1358     |    |
|    | 2567     | 51166-2567 | Emerald Green                          | 51165-1348 | 1348     |    |
|    | 2568     | 51166-2568 | Ocean Blue                             | 51165-1347 | 1347     |    |
|  | 2578     | 51166-2578 | Reseda Green<br>(CompactPCI* / VME64x) | 51165-1346 | 1346     |  |
|  | 3456     | 51166-3456 | Cadmium Yellow<br>(CompactPCI/ 3.3V)   | 51165-1278 | 1278     |  |
|  | 3467     | 51166-3467 | Slate Gray                             | 51165-1258 | 1258     |  |
|  | 3478     | 51166-3478 | Steel Blue                             | 51165-1256 | 1256     |  |
|  | 3568     | 51166-3568 | Pastel Orange                          | 51165-1247 | 1247     |  |
|  | 4678     | 51166-4678 | Ochre Yellow                           | 51165-1235 | 1235     |  |

\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group

# molex® Other MZP™ Connectors And Capabilities

Molex's MZP hard metric system offers system designers a wide variety of choices and flexibility for both industry standard and custom configurations. We are constantly expanding our range and capabilities to meet specific customer and application needs. Along with offering custom designs such as variable pin lengths and loading sequences, we also offer options such as cable assemblies for rear plug-ups, and end-to-end stackable power modules that offer greater flexibility in design.

Molex has one of the industry's most extensive interconnect offerings for backplane solutions that meet your needs. Contact the Molex office nearest you to find out more.

## MZP System Capabilities

- Full-line of industry standard PCB connectors
- Upper and lower shielding options
- CompactPCI\* standard parts
- Custom pin configurations and lengths
- Cable assemblies in various circuit sizes, terminations and locking varieties
- Separate power modules for greater design flexibility
- Mixed-layout versions such as Type L and M to accommodate high current, coaxial or fiber optic contacts conforming to DIN specifications

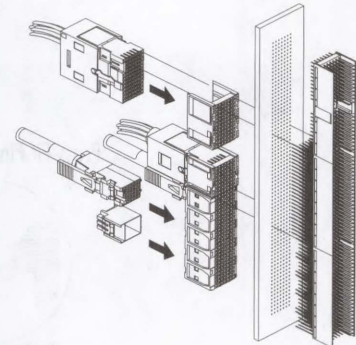
## I/O CABLE ASSEMBLIES AND SHROUDS

### Features and Benefits

- Single lock 25-circuit IDT type; and Dual-lock 40 and 60 circuit crimp type
- User-friendly latch provides secure mating retention
- Upper and lower shielding
- Five types of removable polarization keys

### Cable Assemblies and Shrouds

Note: Contact Molex for ordering details



## POWER MODULES

### Features and Benefits

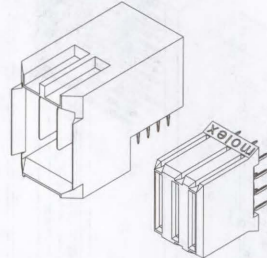
- Plug and receptacle options
- 7.8A per contact
- Options for three different blade lengths for first-make/ last-break
- Durable blade-type pin
- Guide feature facilitates mating

### Receptacle

| Circuits | Order No.  |
|----------|------------|
| 3        | 54745-0312 |

### Plug

| Circuits | Order No.  | Pin Length   |              |              |
|----------|------------|--------------|--------------|--------------|
|          |            | Circuit 1    | Circuit 2    | Circuit 3    |
| 3        | 55573-0312 | 10.90 (.429) | 10.90 (.429) | 10.90 (.429) |
| 3        | 55573-0322 | 9.30 (.366)  | 10.90 (.429) | 9.30 (.366)  |
| 3        | 55573-0332 | 9.30 (.366)  | 10.90 (.429) | 7.68 (.302)  |
| 3        | 55573-0342 | 9.30 (.366)  | 7.68 (.302)  | 9.30 (.366)  |



## TYPE L CONNECTORS

### Features and Benefits

- Plug and receptacle versions
- Six cavities to accommodate high current, coaxial or fiber optic contacts conforming to DIN specifications
- Nine press-fit pegs on female versions for secure PCB retention

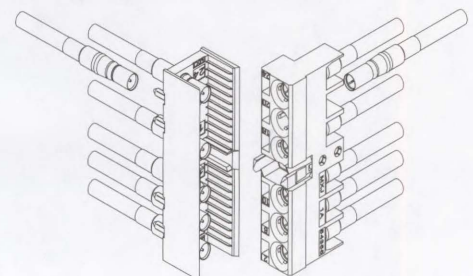
### Receptacle

Note: Contact Molex for ordering details

### Plug

Note: Contact Molex for ordering details

Note: Contact Molex for ordering details on pin and socket inserts.



\* CompactPCI is a registered trademark of the PCI Industrial Computer Manufacturers Group



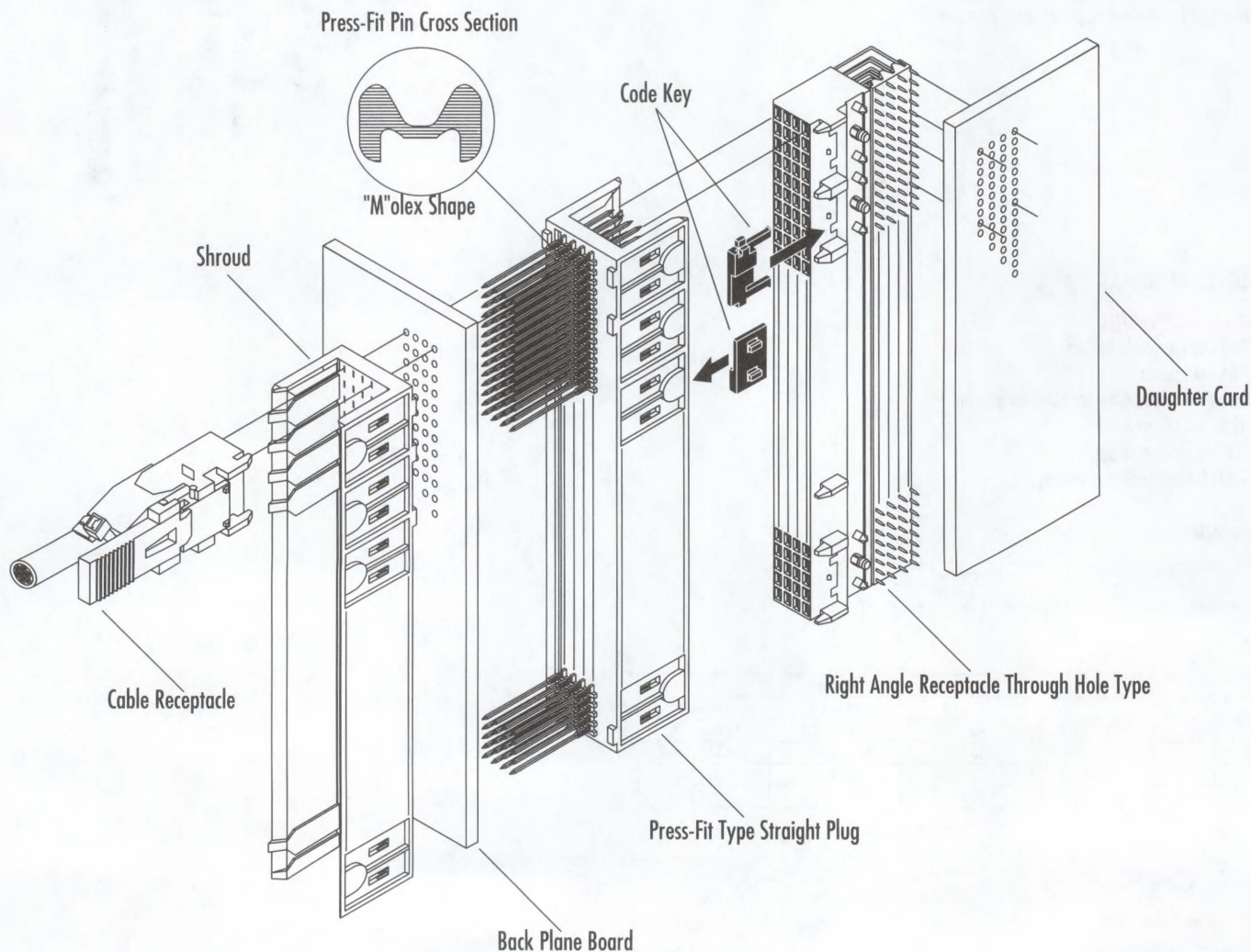
# molex® MFB™ (Futurebus+) Connector System

Molex's new MFB (Futurebus+) connector system is a modular 2.00mm grid system for high-density, board-to-board and cable-to-board applications. MFB is available in 4- and 5-row versions and complies with hard metric packaging standards used in high-density applications such as Futurebus+.

The MFB system offers design flexibility with PCB receptacles and headers that are end-to-end stackable in modular building blocks. The system includes a unique high-pressure press-fit pin design used in both headers and receptacles, along with through hole signal and power modules, an IDT cable receptacle and code keys.

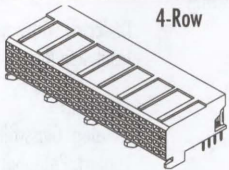
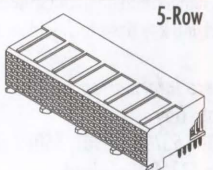
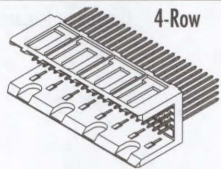
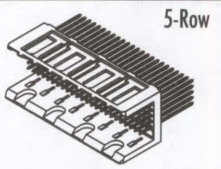
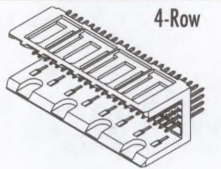
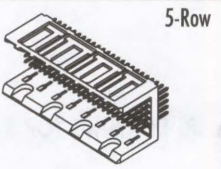
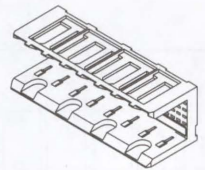
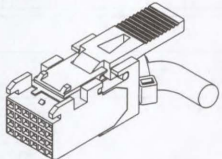
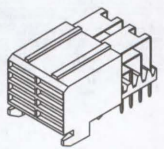
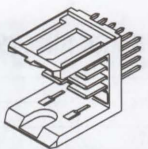
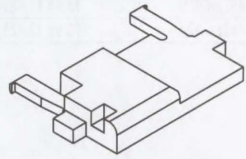
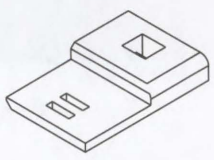
## Features and Benefits

- User-friendly IDT cable plug that provides space savings, strong latch and audible "click" when mating
- Unique press-fit pin design which offers 3kg of retention force and 4 points of contact without damaging sensitive PCB layers
- Tulip-shaped dual contact terminal design that offers high normal force and low insertion force
- Enhanced code keying system that does not interrupt pin grid and protects against undesired electrical contact





# MFB™ (Futurebus+) Connector Product Family Overview

| Order Number                                                                                               | Product Description                                                                     | Available Circuits                                  |                                                                                       |                                                                                     |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 54526-XXXX (4-Row)<br>54557-XXXX (5-Row)<br>54884-XXXX (5-Row)                                             | Right Angle Solder-Type PCB Receptacle<br><br>Right Angle Press-Fit Type PCB Receptacle | 24, 48, 96, 192 (4-Row)<br>30, 60, 120, 240 (5-Row) |     |  |
| 55222-XXXX (4-Row)<br>53901-XXXX (4-Row)<br>53798-XXXX (4-Row)<br>55060-XXXX (5-Row)<br>55332-XXXX (5-Row) | Straight Press-Fit Pin Header                                                           | 24, 48, 96, 192 (4-Row)<br>30, 60, 120, 240 (5-Row) |     |  |
| 55089-XXXX (4-Row)<br>55333-XXXX (5-Row)                                                                   | Straight Solder-Type Header                                                             | 24, 48, 96, 192 (4-Row)<br>30, 60, 120, 240 (5-Row) |     |  |
| 53956-XXXX                                                                                                 | Shroud Housing                                                                          | 24, 48, 96, 192                                     |   |                                                                                     |
| 59232-XXXX                                                                                                 | IDT Cable Receptacle                                                                    | 24                                                  |  |                                                                                     |
| 54071-0800                                                                                                 | Right Angle Solder-Type PCB Power Receptacle                                            | 8                                                   |  |                                                                                     |
| 53822-0820                                                                                                 | Straight Solder-Type Power Header                                                       | 8                                                   |  |                                                                                     |
| 51152-0000                                                                                                 | Code Key for 54047, 54484, 54071, 54246 and 54473                                       | N/A                                                 |  |                                                                                     |
| 51153-0000                                                                                                 | Code Key for 55222, 53901, 53798, 55089, 55060, 55332, 55333 and 53822                  | N/A                                                 |  |                                                                                     |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Tulip-shaped dual-beam contact provides high normal force and low insertion force
- Selective gold plating in terminal contact area
- Integral terminal guide plate for true PCB positioning
- Press-fit PCB retention pegs
- High temperature material withstands wave soldering
- Polarizing key posts and guide walls

### Reference Information

Packaging: Tray  
 Mates With: 53798, 53901, 55089 and 55222  
 Use With: 51152 (Code key)  
 Designed In: Millimeters

### Electrical

Voltage: 100V  
 Current: 1.0A  
 Contact Resistance: A Row: 25mΩ max.  
 (Mated) B Row: 35mΩ max.  
 C Row: 40mΩ max.  
 D Row: 45mΩ max.  
 Dielectric Withstanding Voltage: 750V AC  
 Insulation Resistance: 1000 MΩ min.

### Physical

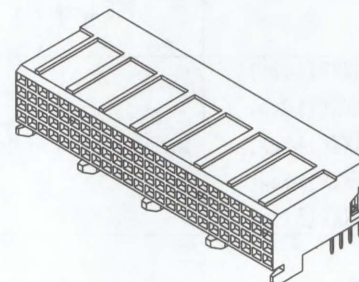
Housing: Glass-filled LCP, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: 0.38μm min. Gold over Nickel  
 Operating Temperature: -55 to +125°C



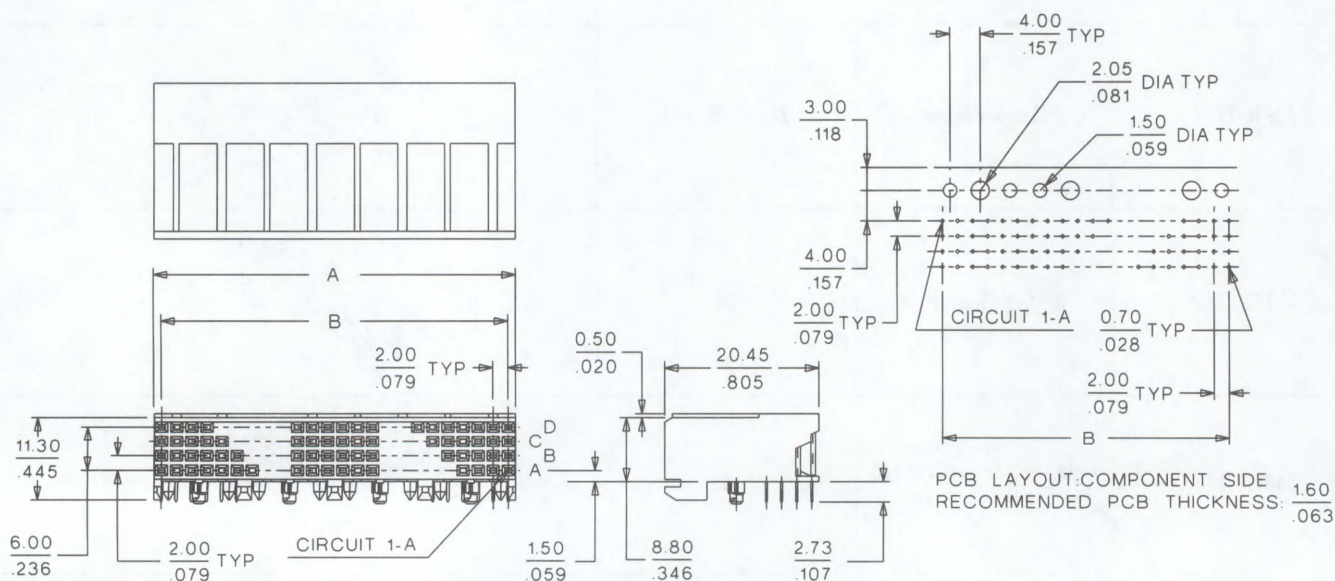
## 2.00mm (.079") Pitch MFB™ (Futurebus+) PCB Receptacle

**54526**

### Right Angle, 4-Row Solder Type



## CATALOG DRAWING FOR REFERENCE ONLY



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 24       | 54526-0240 | 11.98 (.472)  | 10.00 (.394)  |
| 48       | 54526-0480 | 23.98 (.944)  | 22.00 (.866)  |
| 96       | 54526-0960 | 47.98 (1.889) | 46.00 (1.811) |
| 192      | 54526-1920 | 95.98 (3.779) | 94.00 (3.701) |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Tulip-shaped dual-beam contact provides high normal force and low insertion force
- Selective Gold plating in terminal contact area
- Terminal press block for true PCB positioning
- Press-fit PCB retention pegs
- High-temperature material withstands wave soldering
- Polarizing key posts and guide walls

### Reference Information

Packaging: Tray  
 Mates With: 55060, 55332 and 55333  
 Use With: 51152 (code key)  
 Designed In: Millimeters

### Electrical

Voltage: 100V  
 Current: 1.0A  
 Contact Resistance: A Row: 25mΩ max.  
 (Mated) B Row: 35mΩ max.  
 C Row: 40mΩ max.  
 D Row: 45mΩ max.  
 E Row: 50mΩ max.

Dielectric Withstanding Voltage: 750V AC  
 Insulation Resistance: 1000 MΩ min.

### Physical

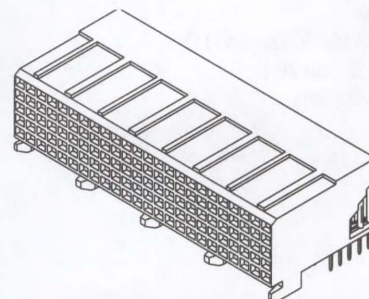
Housing: Glass-filled LCP, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating:  
 Contact Area—Gold 0.38μm min. over Nickel  
 Solder Tail—Tin/Lead 1.0μm min. over Nickel  
 Operating Temperature: -55 to +125°C



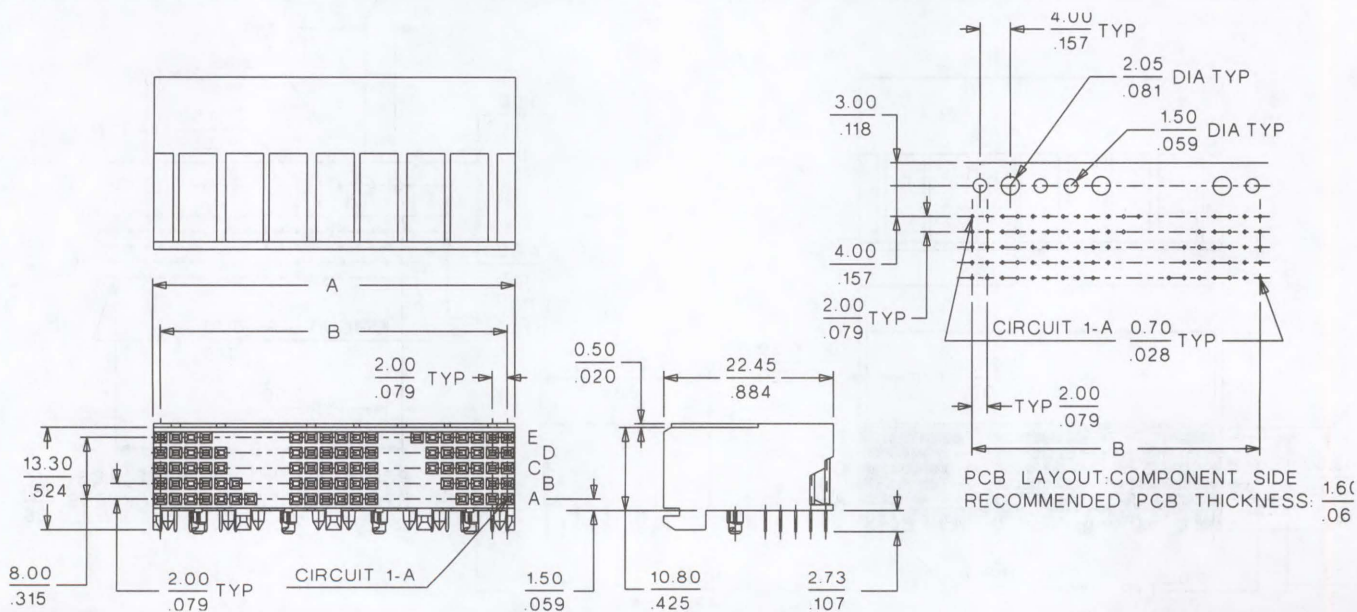
## 2.00mm (.079") Pitch MFB™ (Futurebus+) PCB Receptacle

**54557**

## Right Angle, 5-Row Solder Type



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 30       | 54557-0300 | 11.98 (.472)  | 10.00 (.394)  |
| 60       | 54557-0600 | 23.98 (.944)  | 22.00 (.866)  |
| 120      | 54557-1200 | 47.98 (1.889) | 46.00 (1.811) |
| 240      | 54557-2400 | 95.98 (3.779) | 94.00 (3.701) |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Tulip-shaped dual-beam contact provides high normal force and low insertion force
- Utilizes industry-proven, eye-of-the-needle press-fit pin for reliable PCB retention
- Terminal press block for true PCB positioning
- Press-fit PCB retention pegs
- High-temperature material withstands wave soldering
- Polarizing key posts and guide walls

### Reference Information

Packaging: Tray  
Mates With: 55060, 55332 and 55333  
Use With: 51152 (code key)  
Designed In: Millimeters

### Electrical

Voltage: 100V  
Current: 1.0A  
Contact Resistance: A Row: 25mΩ max.  
(Mated) B Row: 35mΩ max.  
C Row: 40mΩ max.  
D Row: 45mΩ max.  
E Row: 50mΩ max.

Press-Fit Area: 1mΩ max.  
Dielectric Withstanding Voltage: 750V AC  
Insulation Resistance: 1000 MΩ min.

### Physical

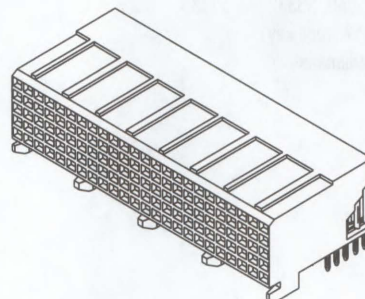
Housing: Glass-filled LCP, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Gold 0.38μm min. over Nickel  
Operating Temperature: -55 to +125°C



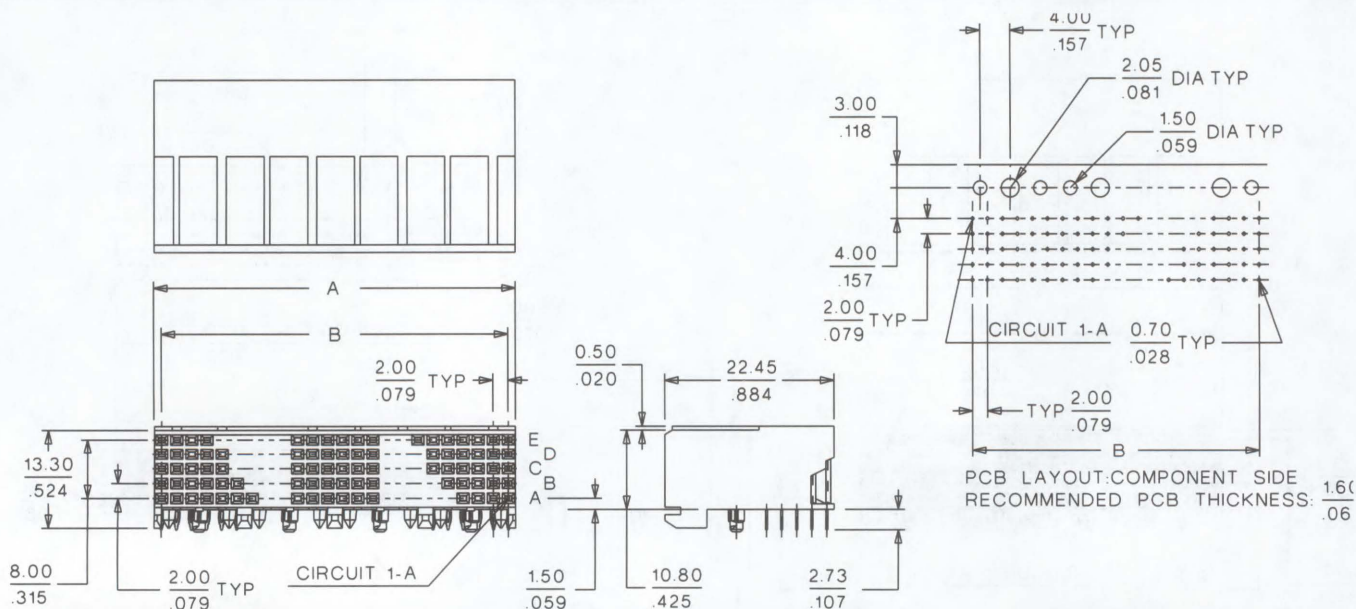
## 2.00mm (.079") Pitch MFB™ (Futurebus+) PCB Receptacle

**54884**

### Right Angle, 5-Row Press-Fit Type



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 30       | 54884-0300 | 11.98 (.472)  | 10.00 (.394)  |
| 60       | 54884-0600 | 23.98 (.944)  | 22.00 (.866)  |
| 120      | 54884-1200 | 47.98 (1.889) | 46.00 (1.811) |
| 240      | 54884-2400 | 95.98 (3.779) | 94.00 (3.701) |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Various pin lengths for sequential mating
- Code key insertion holes secure code keys and ensure proper mating alignment
- Selective Gold-plated contacts for high reliability
- High-temperature material withstands wave soldering
- PCB polarization pegs ensure proper positioning and provide additional hold-down

### Reference Information

Packaging: Tray

Mates With: 54526

Designed In: Millimeters

### Electrical

Voltage: 100V

Current: 1.0A

Contact Resistance: A Row: 25mΩ max.

(Mated) B Row: 35mΩ max.

C Row: 40mΩ max.

D Row: 45mΩ max.

Dielectric Withstanding Voltage: 750V AC

Insulation Resistance: 1000 MΩ min.

### Physical

Housing: Glass-filled LCP, UL 94V-0

Contact: Brass

Plating: Gold 0.38μm min. over Nickel

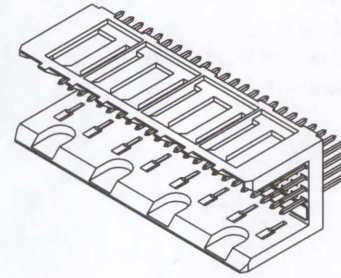
Operating Temperature: -55 to +125°C



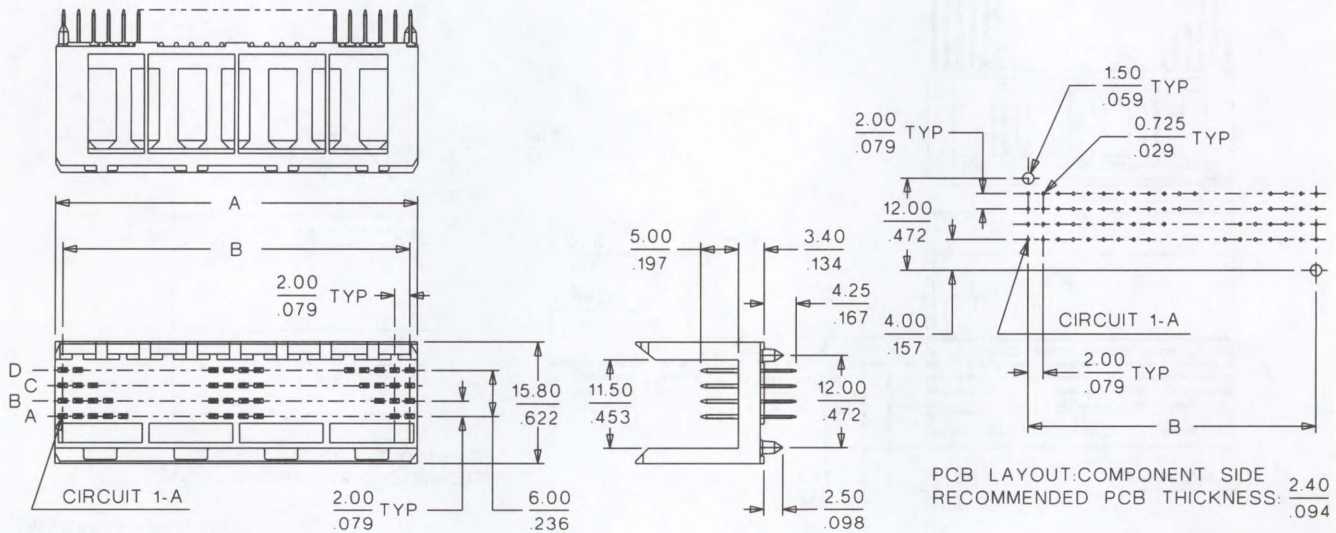
**2.00mm (.079") Pitch**  
**MFB™ (Futurebus+)**  
**Header**

**55089**

**Vertical, 4-Row**  
**Solder Type**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 24       | 55089-0244 | 11.98 (.472)  | 10.00 (.394)  |
| 48       | 55089-0484 | 23.98 (.944)  | 22.00 (.866)  |
| 96       | 55089-0964 | 47.98 (1.889) | 46.00 (1.811) |
| 192      | 55089-1924 | 95.98 (3.779) | 94.00 (3.701) |

Note: For other mating lengths, contact Molex



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Molex style press-fit contact design provides 3kg of retention force and 4 points of contact for a gas-tight connection
- Selective Gold-plated pins offer high reliability
- Various pin lengths for sequential mating; various tail lengths to meet PCB layout needs
- Code key insertion holes secure code keys
- High-temperature material withstands wave soldering

## Reference Information

Packaging: Tray

Mates With: 54526 and 59232

Use With: 53956 shroud and 51153 code key

Designed In: Millimeters

## Electrical

Voltage: 100V

Current: 1.0A

Contact Resistance: A Row: 25mΩ max.  
(Mated) B Row: 35mΩ max.

C Row: 40mΩ max.

D Row: 45mΩ max.

Press-Fit Area: 1mΩ max.

Dielectric Withstanding Voltage: 750V AC

Insulation Resistance: 1000 MΩ min.

## Physical

Housing: Glass-filled LCP, UL 94V-0

Contact: Phosphor Bronze

Plating: Gold 0.38μm min. over Nickel

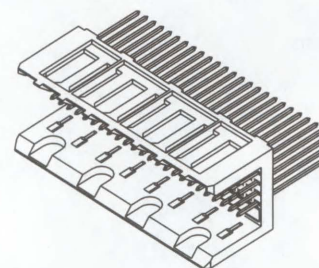
Operating Temperature: -55 to +125°C



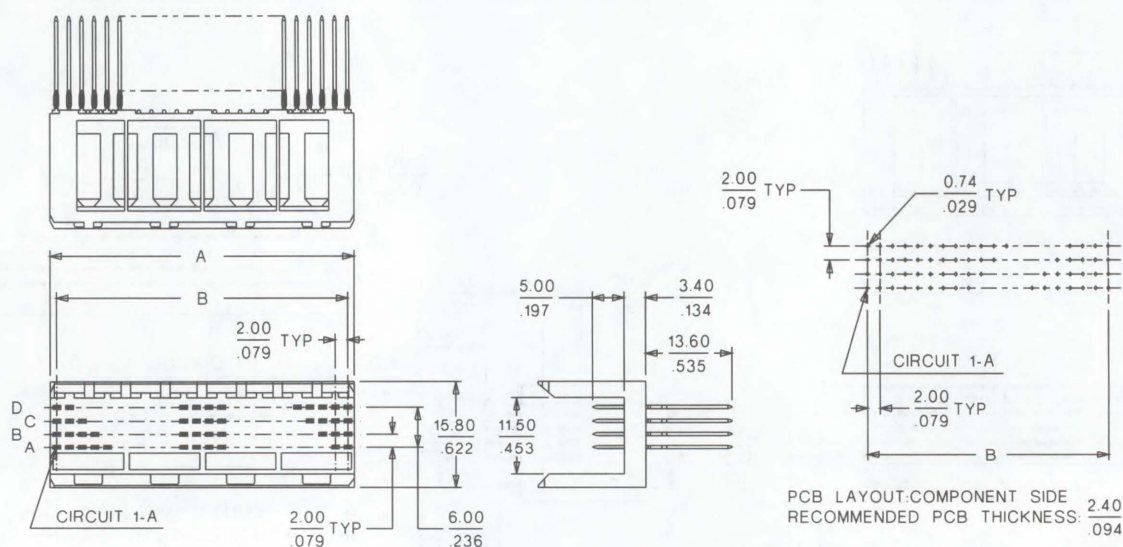
# 2.00mm (.079") Pitch MFB™ (Futurebus+) Header

55222/53901/53798

## Vertical, 4-Row Press-Fit Pin



## CATALOG DRAWING (FOR REFERENCE ONLY)



Note: Drawing shown is 53901

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.           |                      |                      | Dimension     |               |
|----------|---------------------|----------------------|----------------------|---------------|---------------|
|          | Tail length: 4.30mm | Tail length: 13.60mm | Tail length: 17.00mm | A             | B             |
| 24       | 55222-0244          | 53901-0244           | 53798-0244           | 11.98 (.472)  | 10.00 (.394)  |
| 48       | 55222-0484          | 53901-0484           | 53798-0484           | 23.98 (.944)  | 22.00 (.866)  |
| 96       | 55222-0964          | 53901-0964           | 53798-0964           | 47.98 (1.889) | 46.00 (1.811) |
| 192      | 55222-1924          | 53901-1924           | 53798-1924           | 95.98 (3.779) | 94.00 (3.701) |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Various pin lengths for sequential mating
- Code key insertion holes secure code keys and ensure proper mating alignment
- Selective Gold-plated contacts for high reliability
- High-temperature material withstands wave soldering

### Reference Information

Packaging: Tray  
Mates With: 54557 and 54884  
Use With: 51153 (code key)  
Designed In: Millimeters

### Electrical

Voltage: 100V  
Current: 1.0A  
Contact Resistance: A Row: 25mΩ max.  
(Mated) B Row: 35mΩ max.  
C Row: 40mΩ max.  
D Row: 45mΩ max.  
E Row: 50mΩ max.  
Dielectric Withstanding Voltage: 750V AC  
Insulation Resistance: 1000 MΩ min.

### Physical

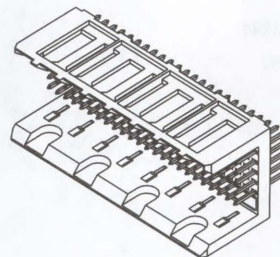
Housing: Glass-filled LCP, UL 94V-0  
Contact: Brass  
Plating: Gold 0.38μm min. over Nickel  
Operating Temperature: -55 to +125°C



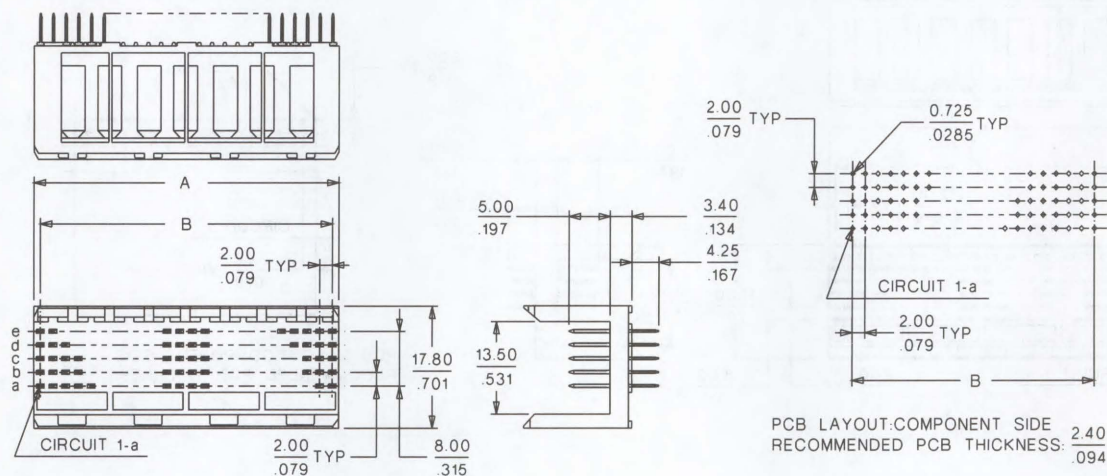
**2.00mm (.079") Pitch**  
**MFB™ (Futurebus+)**  
**Header**

**55333**

**Vertical, 5-Row**  
**Solder Type**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 30       | 55333-0304 | 11.98 (.472)  | 10.00 (.394)  |
| 60       | 55333-0604 | 23.98 (.944)  | 22.00 (.866)  |
| 120      | 55333-1204 | 47.98 (1.889) | 46.00 (1.811) |
| 240      | 55333-2404 | 95.98 (3.779) | 94.00 (3.701) |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- "Molex style press-fit contact design provides 3kg of retention force and 4 points of contact for a gas-tight connection
- Selective Gold-plated pins offer high reliability
- Various pin lengths for sequential mating; various tail lengths to meet PCB layout needs
- Code key insertion holes secure code keys
- High-temperature material withstands wave soldering

### Reference Information

Packaging: Tray  
 Mates With: 54557 and 54884  
 Use With: 51153 (code key)  
 Designed In: Millimeters

### Electrical

Voltage: 1000V  
 Current: 1.0A  
 Contact Resistance: A Row: 25mΩ max.  
 (Mated) B Row: 35mΩ max.  
 C Row: 40mΩ max.  
 D Row: 45mΩ max.  
 E Row: 50mΩ max.

Press-Fit Area: 1mΩ max.  
 Dielectric Withstanding Voltage: 750V AC  
 Insulation Resistance: 1000 MΩ min.

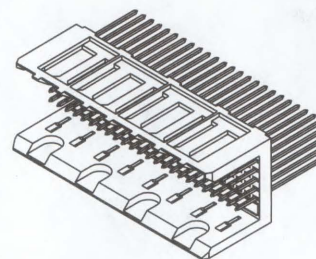
### Physical

Housing: Glass-filled LCP, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: Gold 0.38μm min. over Nickel  
 Operating Temperature: -55 to +125°C

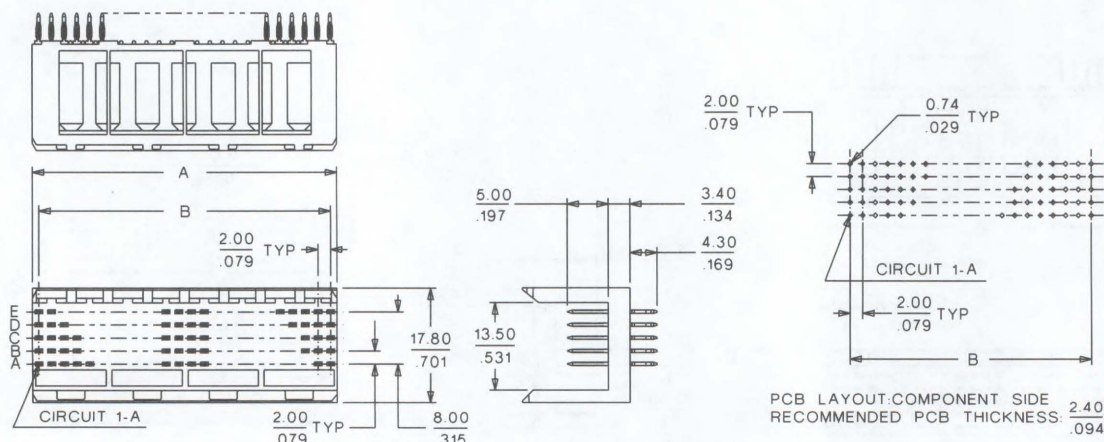
## molex® 2.00mm (.079") Pitch MFB™ (Futurebus+) Header

**55060/55332**

**Vertical, 5-Row  
 Press-Fit Pin**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Note: Drawing shown is 55060

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.              |                         | Dimension     |               |
|----------|------------------------|-------------------------|---------------|---------------|
|          | Tail Length:<br>4.30mm | Tail Length:<br>13.60mm | A             | B             |
| 30       | 55060-0304             | 55332-0304              | 11.98 (.472)  | 10.00 (.394)  |
| 60       | 55060-0604             | 55332-0604              | 23.98 (.944)  | 22.00 (.866)  |
| 120      | 55060-1204             | 55332-1204              | 47.98 (1.889) | 46.00 (1.811) |
| 240      | 55060-2404             | 55332-2404              | 95.98 (3.779) | 94.00 (3.701) |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Used on backplane connector for rear cable plug-up
- Unit indications ensure proper mating alignment
- High-temperature material withstands wave soldering
- Polarizing key posts secure code keys
- Polarizing guide walls ensure proper mating alignment

### Reference Information

Packaging: Tray

Use With: 53901, 53798 headers and 51153 code key

Designed In: Millimeters

### Physical

Housing: LCP, UL 94V-0

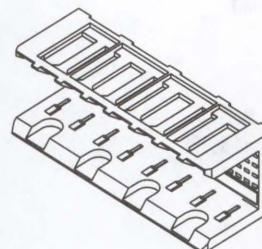
Operating Temperature: -55 to +125°C



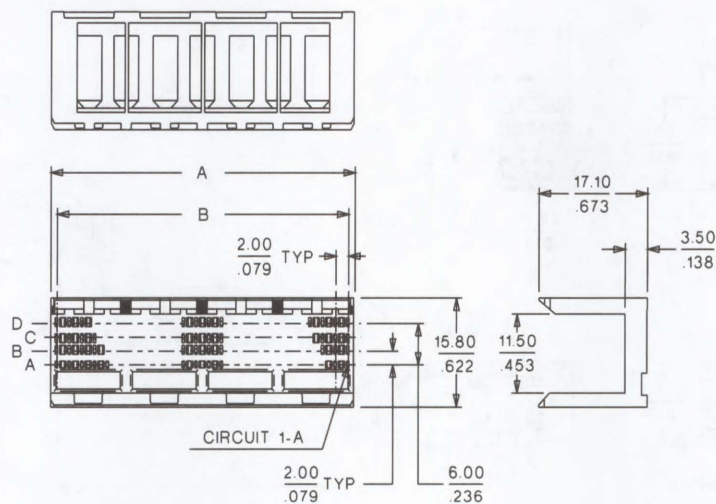
**2.00mm (.079") Pitch**  
**MFB™ (Futurebus+)**  
**Shroud Housing**

**53956**

**Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension     |               |
|----------|------------|---------------|---------------|
|          |            | A             | B             |
| 24       | 53956-0241 | 11.80 (.465)  | 10.00 (.394)  |
| 48       | 53956-0481 | 23.80 (.937)  | 22.00 (.866)  |
| 96       | 53956-0961 | 47.80 (1.882) | 46.00 (1.811) |
| 192      | 53956-1921 | 95.80 (3.772) | 94.00 (3.701) |



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Available in both fully-terminated harness style or component kit (Contact Molex for details)
- User-friendly latch provides secure mating
- Short body and slanted cable attachment provide space savings
- Audible "click" confirms mating
- Tulip-shaped dual-beam contact offers high normal force and low insertion force
- Selective Gold-plated contacts

## Reference Information

Packaging: Bag  
 Tooling Information: Contact Molex  
 Mates With: 55222, 53901 and 53798  
 Use With: 53956 (shroud)  
 Designed In: Millimeters

## Electrical

## Specification 1 (Cable 5.25mm dia.)

Voltage: 30V  
 Current: 0.5A  
 Contact Resistance: 35mΩ max. (Terminal Mating Area)  
 Dielectric Withstanding Voltage: 500V AC  
 Insulation Resistance: 100 MΩ min.

## Specification 2 (Cable 6.5mm dia.)

Voltage: 90V  
 Current: 0.5A  
 Contact Resistance: 35mΩ max. (Terminal Mating Area)  
 Dielectric Withstanding Voltage: 500V AC  
 Insulation Resistance: 100 MΩ min.

## Physical

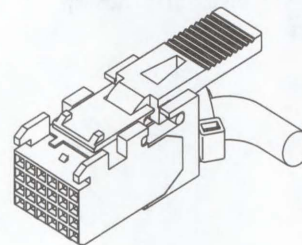
Housing: LCP, UL 94V-0  
 IDT Terminal: Phosphor Bronze  
 Latch: PBT, UL 94V-0  
 Plating: Gold 0.3μm min. over Nickel  
 Operating Temperature: 0 to +60°C



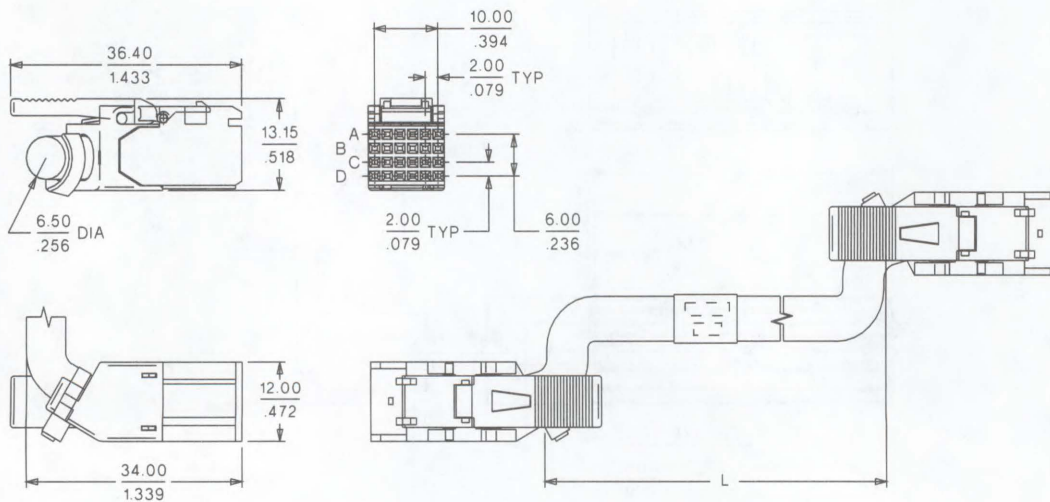
## 2.00mm (.079") Pitch MFB™ (Futurebus+) Receptacle Assembly

59232

IDT Type, 4-Row



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Order No.  | Dimension L   |
|------------|---------------|
| 59232-X025 | 250 (9.843)   |
| 59232-X030 | 300 (11.811)  |
| 59232-X035 | 350 (13.780)  |
| 59232-X040 | 400 (15.748)  |
| 59232-X045 | 450 (17.717)  |
| 59232-X050 | 500 (19.685)  |
| 59232-X055 | 550 (21.654)  |
| 59232-X060 | 600 (23.622)  |
| 59232-X065 | 650 (25.591)  |
| 59232-X070 | 700 (27.559)  |
| 59232-X075 | 750 (29.528)  |
| 59232-X080 | 800 (31.496)  |
| 59232-X085 | 850 (33.465)  |
| 59232-X090 | 900 (35.433)  |
| 59232-X095 | 950 (37.402)  |
| 59232-X100 | 1000 (39.370) |

| Order No.  | Dimension L   |
|------------|---------------|
| 59232-X105 | 1050 (41.339) |
| 59232-X110 | 1100 (43.307) |
| 59232-X115 | 1150 (45.276) |
| 59232-X120 | 1200 (47.244) |
| 59232-X125 | 1250 (49.213) |
| 59232-X130 | 1300 (51.181) |
| 59232-X135 | 1350 (53.150) |
| 59232-X140 | 1400 (55.118) |
| 59232-X145 | 1450 (57.087) |
| 59232-X150 | 1500 (59.055) |
| 59232-X155 | 1550 (61.024) |
| 59232-X160 | 1600 (62.992) |
| 59232-X165 | 1650 (64.961) |
| 59232-X170 | 1700 (66.929) |
| 59232-X175 | 1750 (68.898) |
| 59232-X180 | 1800 (70.866) |

| Order No.  | Dimension L   |
|------------|---------------|
| 59232-X185 | 1850 (72.835) |
| 59232-X190 | 1900 (74.803) |
| 59232-X195 | 1950 (76.772) |
| 59232-X200 | 2000 (78.740) |
| 59232-X205 | 2050 (80.709) |
| 59232-X210 | 2100 (82.677) |
| 59232-X215 | 2150 (84.646) |
| 59232-X220 | 2200 (86.614) |
| 59232-X225 | 2250 (88.583) |
| 59232-X230 | 2300 (90.551) |
| 59232-X235 | 2350 (92.520) |
| 59232-X240 | 2400 (94.488) |
| 59232-X245 | 2450 (96.457) |
| 59232-X250 | 2500 (98.425) |

Replace X with electrical specification no., 0 or 1

Electrical specification no. 0: Specification 2 (Cable 6.5mm dia.)

Electrical specification no. 1: Specification 1 (Cable 5.25mm dia.)

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 8-circuit modular unit fits into same space and PCB footprint as 24-circuit signal module
- Four point contact design
- Terminal guide plate ensures true positioning of PC tails
- Post-plated terminals for high reliability
- Polarizing key posts and guide walls secure code keys and ensure proper mating
- PCB retention pegs

### Reference Information

Packaging: Tray  
Mates With: 53822  
Designed In: Millimeters

### Electrical

Voltage: 1000V  
Current: 3.0A  
Contact Resistance: 10mΩ max.  
Dielectric Withstanding Voltage: 750V AC  
Insulation Resistance: 5000 MΩ min.

### Physical

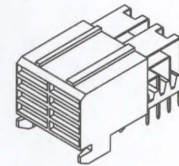
Housing: Glass-filled LCP, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Gold 0.38μm min. over Nickel  
Operating Temperature: -55 to +125°C



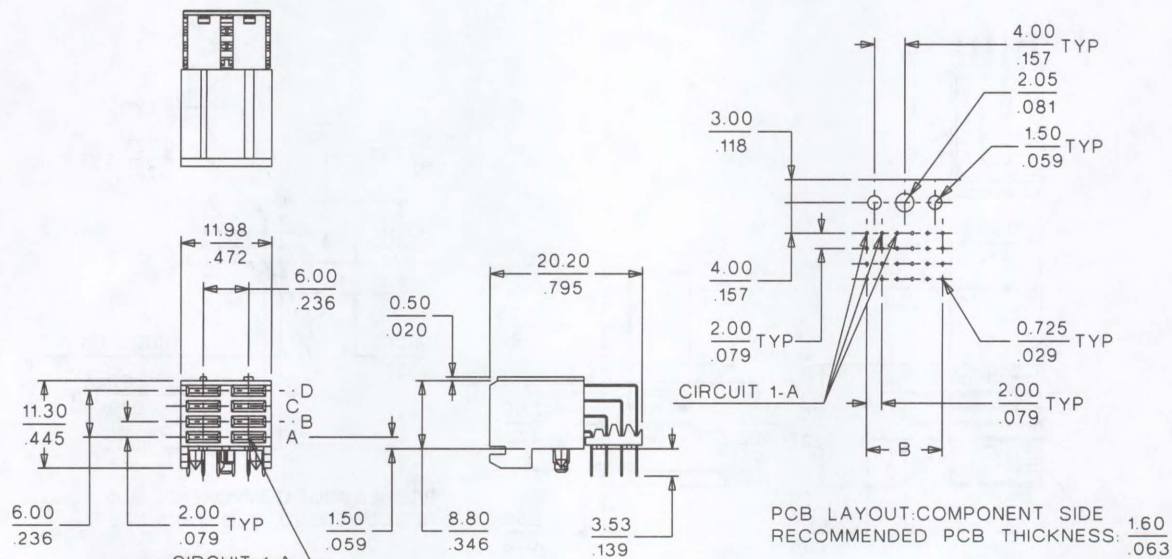
## 2.00mm (.079") Pitch MFB™ (Futurebus+) PCB Power Receptacle

**54071**

**Right Angle  
Solder Type**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 8        | 54071-0800 |



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- 8-circuit modular unit fits into same space and footprint as 24-circuit signal module
- Sturdy male blade pins avoid bending and dissipate heat
- Post-plated pins provide high reliability
- Code key insertion holes secure code keys and provide proper mating alignment
- PCB retention pegs provide additional hold-down

## Reference Information

Packaging: Tray

Mates With: 54071

Designed In: Millimeters

## Electrical

Voltage: 1000V

Current: 3.0A

Contact Resistance: 10mΩ max.

Dielectric Withstanding Voltage: 750V AC

Insulation Resistance: 5000 MΩ min.

## Physical

Housing: Glass-filled LCP, UL 94V-0

Contact: Brass

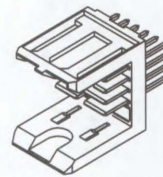
Plating: Gold 0.38μm min. over Nickel

Operating Temperature: -55 to +125°C

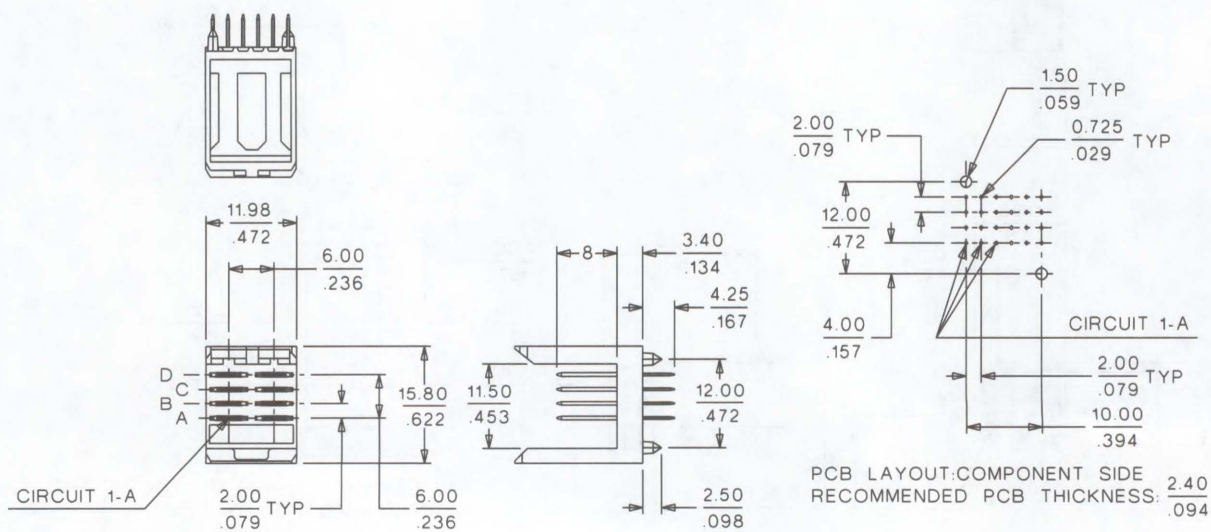
**molex®** 2.00mm (.079") Pitch  
MFB™ (Futurebus+)  
PCB Power Header

**53822**

**Vertical  
Solder Type**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  |
|----------|------------|
| 8        | 53822-0820 |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Integral keying on bottom row does not interrupt pin grid and leaves full front face of connector available for signals
- Long key lengths prevent undesired electrical contact
- Standard light blue color is easy to identify in cabinets
- Supplied in strips of 20 for easy handling

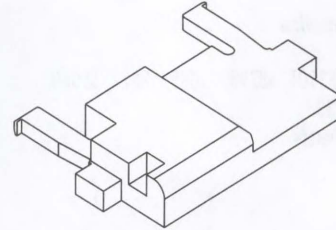
### Physical

Housing: Glass-filled PBT



**2.00mm (.079") Pitch**  
**MFB™ (Futurebus+)**  
**Receptacle Code Key**

**51152**



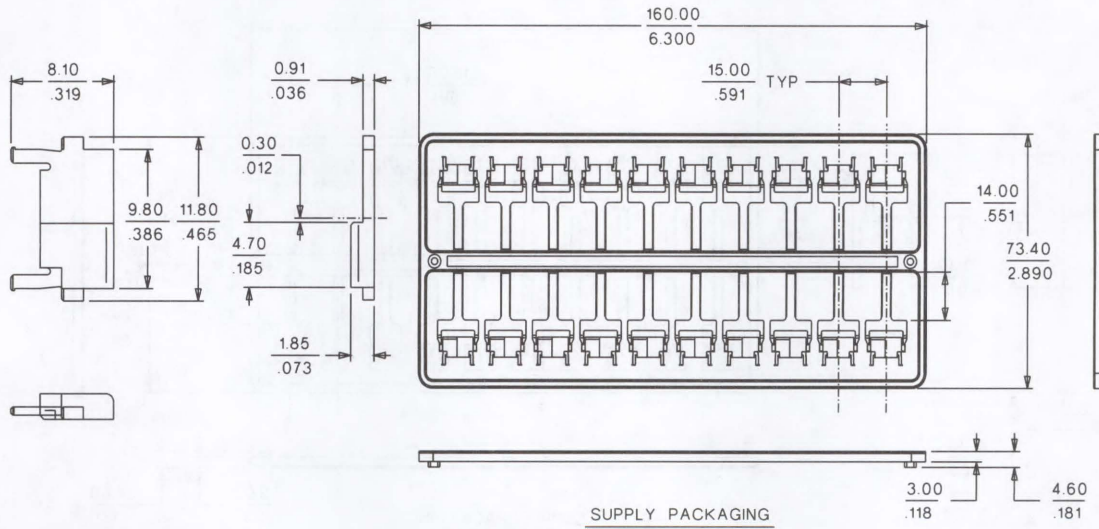
### Reference Information

Packaging: Tray

Use With: 54071, 54557, 54884 and 54526

Designed In: Millimeters

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Order No.  |
|------------|
| 51152-0000 |

Note: Code keys supplied in strips of 20 pieces



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Integral keying on bottom row does not interrupt pin grid and leaves full front face of connector available for signals
- Long key lengths prevent undesired electrical contact
- Standard light blue color is easy to identify in cabinets
- Supplied in strips of 20 for easy handling

### Reference Information

Packaging: Tray

Use With: 55222, 53901, 53798, 55089, 53822, 55060, 55332 and 55333

Designed In: Millimeters

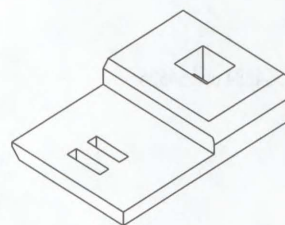
### Physical

Housing: Glass-filled PBT

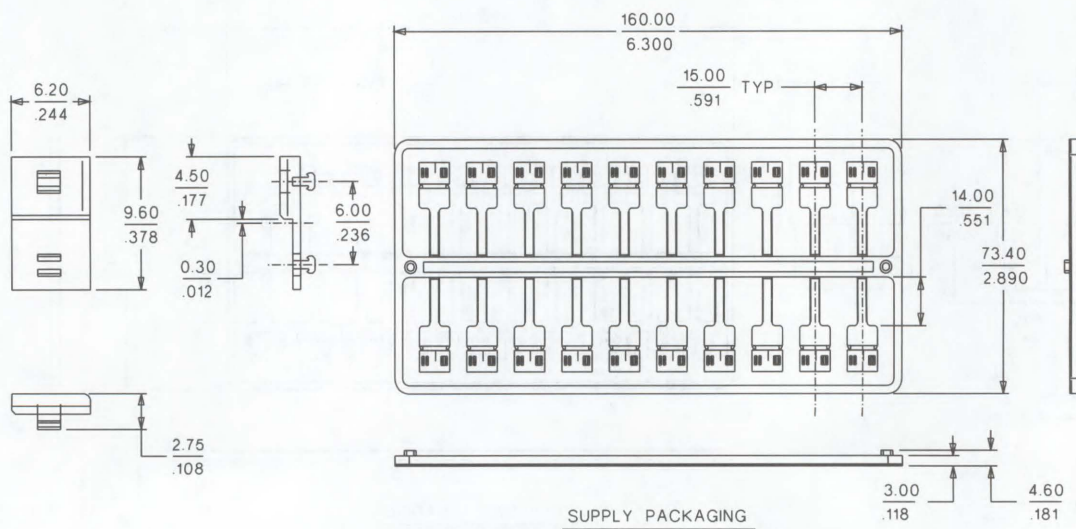


**2.00mm (.079") Pitch**  
**MFB™ (Futurebus+)**  
**Header Code Key**

**51153**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Order No.  |
|------------|
| 51153-0000 |

Note: Code keys supplied in strips of 20 pieces



The trend to standardize packaging systems for electronics into true metric was caused by the disruption of the existing systems, where metric PCBs (160.00 by 100.00mm (6.299 by 3.94")) were packed into 482.60mm (19.00") racks and composed of connectors spaced 2.54mm (.100") from each other.

In order to find a true metric system, an IEC (IEC Publ. 102-4-100) standard for packaging was proposed, which is based on the existing DIN 43356 "metric design standard multi module 2.5mm". This metric design standard defines a sub-unit (SU) of 25.00mm (.98425") which is described in all three dimensions "omnidirectional" like a cube with 25.00mm (.984") width. The sub-unit can be divided into 10 increments of 2.50mm (.098"). A multiple of these increments constitutes the board spacing with a minimum spacing of 15.00mm (.591").

The 3D grid is conceived so that it is possible to have a pin every 2.50mm (.098") in X and Y direction on the backplane. Connectors can therefore mate in the X direction or in the Y direction on the same backplane. This allows for maximum utilization of system volume and for very high pin count between the module and backplane.

One of the first connectors designed for this metric packaging standard is the Omnigrid 2.5 connector system. This standard was developed in 1986 according to the DIN 41642 standard in Germany and has now become the IEC 1076-4-100 specification titled "Detail specification for modular two-part connectors for printed boards and backplanes, grid of 2.5mm (0.098 in) according to IEC 917". This specification highlights the wide acceptance of this connector as an industry standard.

The IEC 1076-4-100 has been accepted as the COMBUS standard by a majority of the leading Telecom manufacturers, worldwide. Omnigrid 2.5 — featured in this catalog — is a true metric connector system and uses the minimum PCB spacing of 15.00mm (.591") for a rugged and reliable female-to-PCB and male-to-backplane inverted interconnection system.

Molex's Omnigrid 2.5mm connector family is a 5 row backplane connector system with female contacts on the module and pins on the backplane. Both the female and backplane pins are press-fitted into the board, not requiring solder. It is important to note that high pin counts are achieved without any compromises in technology.

The backplane is fitted with 0.60mm (.024") square C-pins utilizing the compliant press-fit technology proven in billions of pins used in previous generation DIN 41612 connectors.

The female contact is a dual beam, low insertion force contact with versions available to meet the Bellcore requirement for 100g minimum normal force after life. This capability provides the high reliability needed to achieve system level Mean Time Between Failure (MTBF) requirements.

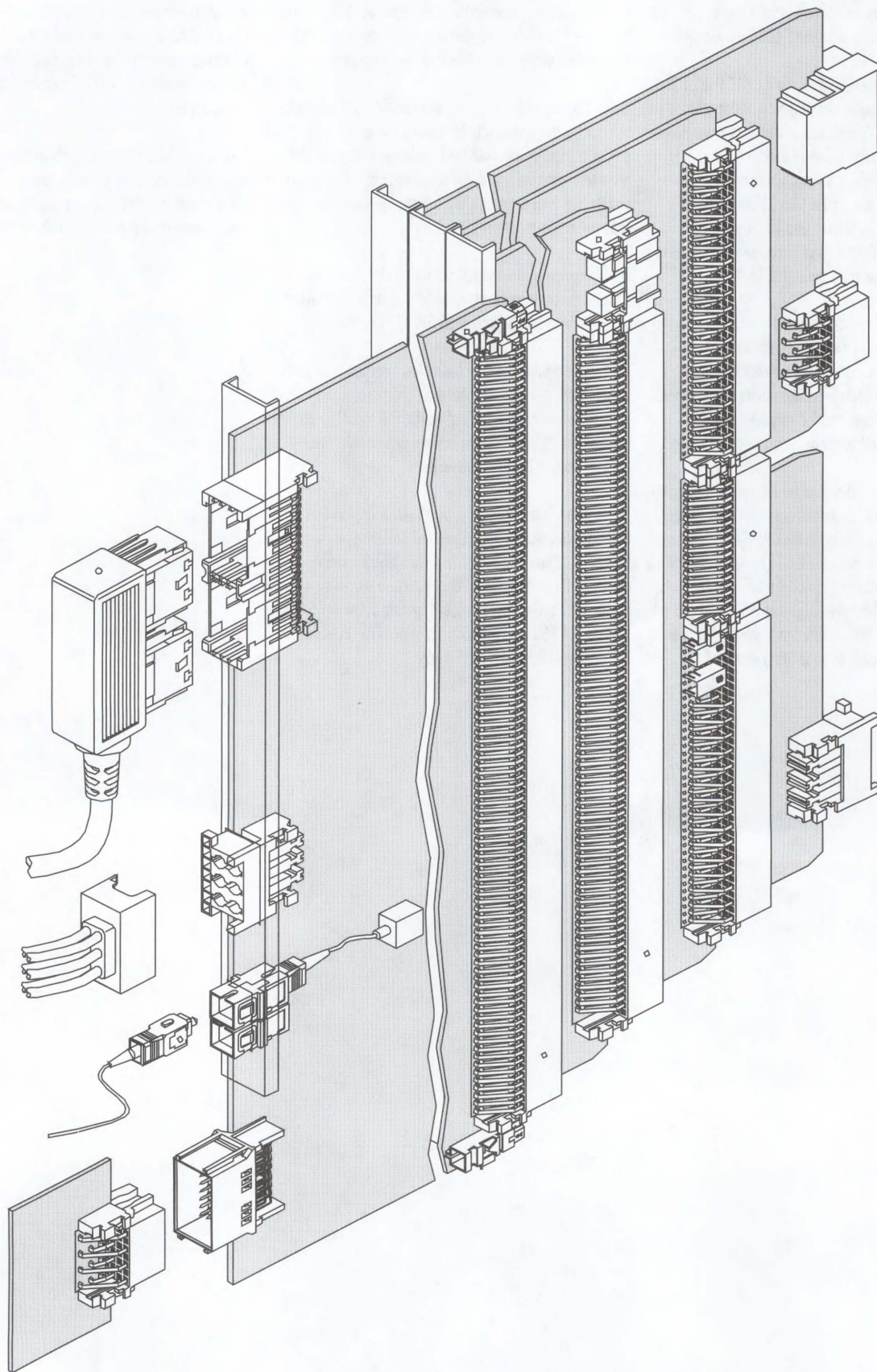
The female contact uses a V-press fit technology so that this connector can also be applied without soldering, making the Omnigrid 2.5mm connector the perfect high pin count connector for surface mount boards. It also shortens electrical length and enables board to board spacing as low as 15.00mm (.591"). A 10 SU long connector, it offers 475 circuits on a 265.00mm (10.433") high PCB edge.

The rear I/O behind backplane plugging system enables 1, 2, and 4 SU cable plugs with up to 164 signal paths and can be plugged omnidirectionally (vertically or horizontally) in order to connect one peripheral cable onto up to eight PCBs. First-make-last-break (two levels) and last-make-first-break male contacts are available as well as four different rear tail length for press fit only, rear I/O only, or wire wrap and rear I/O wiring applications.

Last, but not least, Molex's highly automated production equipment enables the customer to tailor his product to the actual needs as pseudo-coax arrangements or selectively loaded connectors depending on his application.



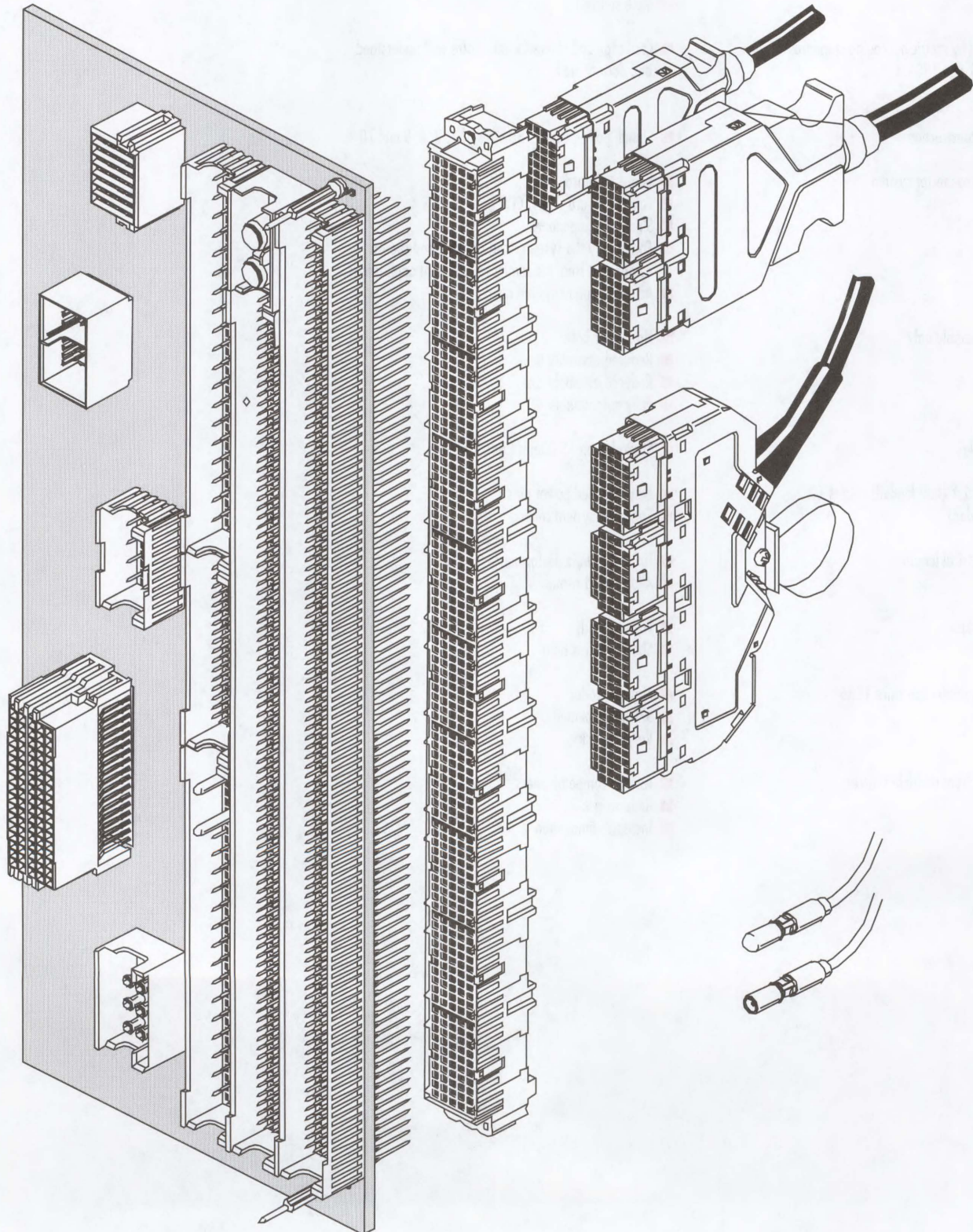
**The Unlimited  
Connecting System**





**molex®** 2.50mm (.098") Pitch  
Omnigrid®

**The Unlimited  
Connecting System**



**Backplane Connector Systems**





**Features**

- Metric connector system
- International standard  
IEC 1076-4-100
- Supported by metric packaging standards  
IEEE 1301 and 1301.3
- Modular construction
- Complete connector system
- Z axis assembly only
- Low profile
- Rated for 2.7 (half loaded) resp. 1.0A  
(fully loaded)
- Short electrical length
- Minimal skew
- System in production since 1986
- Available from multiple sources

**Benefits**

- IEC 917 compliance
- OK for Europe after 1992
- Next generation standard
- Excellent documentation
- Available around the world
- Multi-sourced
- Card cage and connector tolerances well understood  
and documented
- Signal, power, coax in SU sizes of 1, 2, 4, 9 and 10
- Board-to-board
- Cable-to-board — IDT/CTW
- Shielded components
- Can qualify the system, then can pick and choose  
component from the family for different applications
- Adapts to future system needs
- No nuts or bolts
- Reduced assembly time
- Reduced assembly cost
- Fully automatable
- Stackable on 15.00mm (.600") centers
- May not need power pins
- Enhanced system cooling
- Up to 800 MHz performance
- Allows short risetimes
- Faster speeds
- Shorter access time
- Mature product
- SPC implemented
- Very low risk
- Assures competitiveness
- Reduces risk
- Increases innovation

## BACKPLANE MALE CONNECTORS

### Features

- Continuous backplane grid
- 0.60mm (.025") square pins
- C-press pins

### Benefits

- Efficient utilization of pins
- Integral shield/ground
- Orthogonal boards
- Strong
- Wire wrapable
- Rear plug capability
- Stiff
- High conductivity
- No risk
- Well known
- Qualified at most accounts already
- Billions of pins already made



**2.50mm (.098") Pitch  
Omnigrid®**

## PCB FEMALE CONNECTORS

### Features

- 5 rows 2.50mm (.098") pitch
- Connector applied last
- Press fit Right Angle receptacle
- No heat stake pegs
- 100g normal force
- LIF contacts

### Benefits

- 50 circuit per SU, 25.40mm (1.000") card height
- Pseudo coax configurations
- 425 on double Eurocard
- 475 on 10 SU connector for 12 SU card
- Panelized line cards
- Pogo pin test
- Connector not in way (solder paste application or wave soldering)
- Easy repair/rework of board
- For SMT boards
- Easy to assemble
- Reduced cost
- Increased yield
- Not exposed to solder process — no distortion — less expensive plastic — more precision
- No heat stake step in process
- No control problem
- Board thickness not a problem
- Meets Bellcore requirements
- Reliable electrical performance
- Cuts through dust and films
- Can plug large pin count connectors

## CABLE CONNECTORS

### Features

- Cable connector has metal back shells
- Cable connector coding
- Cable connector removal tabs

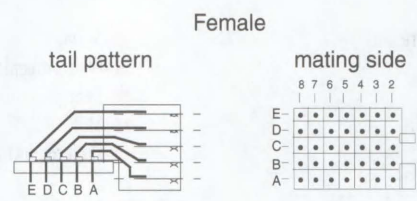
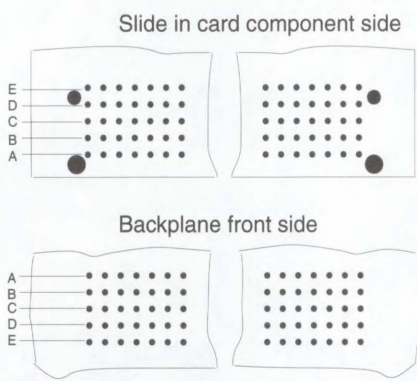
### Benefits

- Truck proof
- Can be grounded to cable
- Can assure specific cable goes into specific slot
- Encourages proper removal



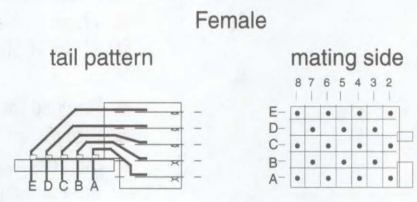
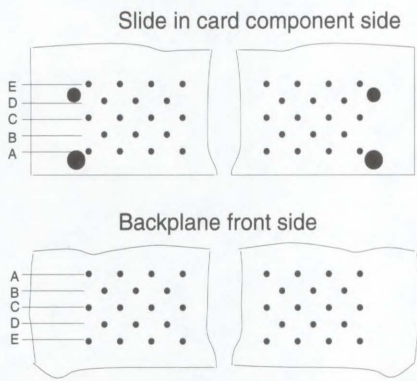
CONTACT ARRANGEMENT 1

**molex® 2.50mm (.098") Pitch**  
**Omnigrid®**  
**Contact Arrangements**



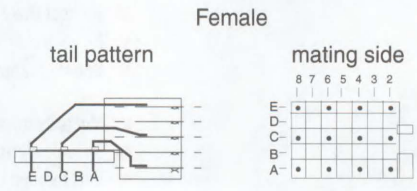
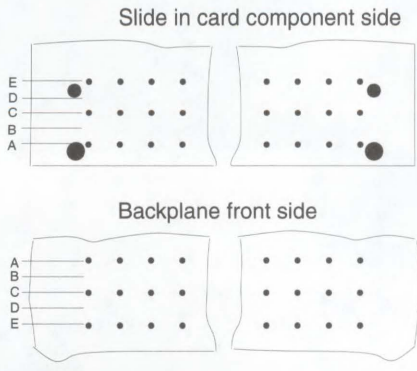
|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 35  | 85  | 185 | 425 | 475  |

CONTACT ARRANGEMENT 2



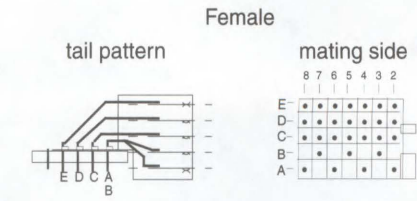
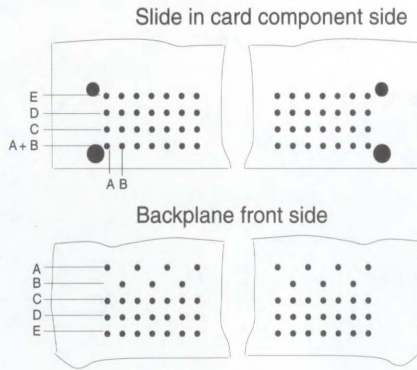
|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 18  | 43  | 93  | 214 | 239  |

CONTACT ARRANGEMENT 3



|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 12  | 27  | 57  | 132 | 147  |

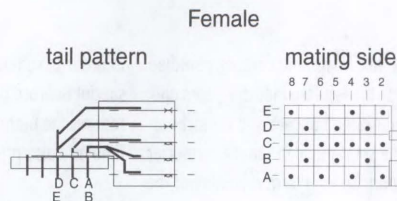
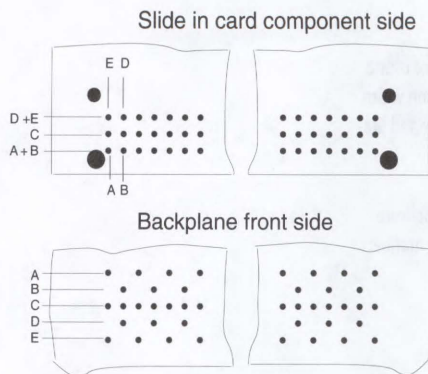
CONTACT ARRANGEMENT 4



|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 28  | 68  | 148 | 340 | 380  |

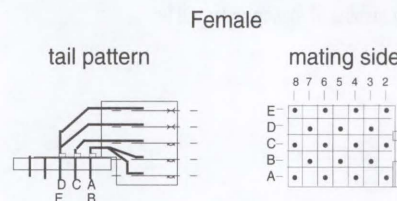
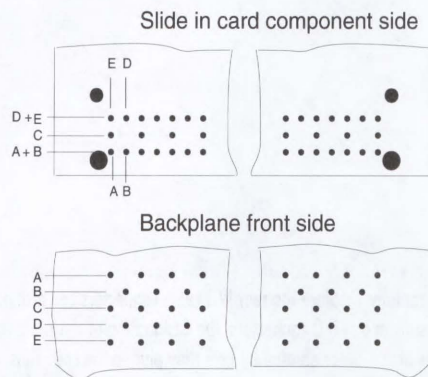
## CONTACT ARRANGEMENT 5

# molex® 2.50mm (.098") Pitch Omnigrid® Contact Arrangements



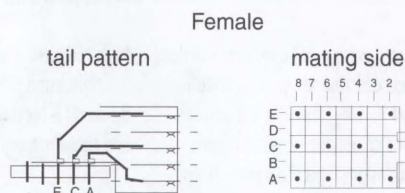
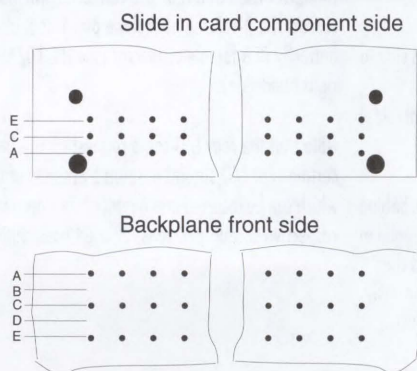
|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 21  | 51  | 111 | 255 | 285  |

## CONTACT ARRANGEMENT 6



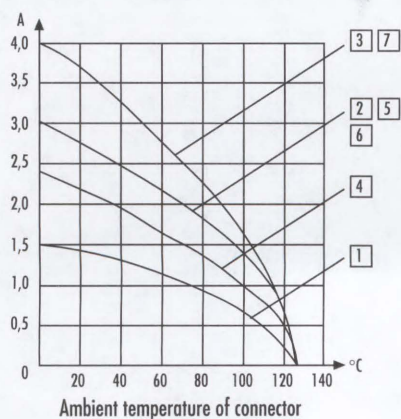
|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 18  | 43  | 93  | 214 | 239  |

## CONTACT ARRANGEMENT 7



|          | 1SU | 2SU | 4SU | 9SU | 10SU |
|----------|-----|-----|-----|-----|------|
| Circuits | 12  | 27  | 57  | 132 | 147  |

## CURRENT CAPABILITY



- Selective loading increases current capability per signal contact
- Contact arrangement



When the laboratories of the Bell Telephone Company studied the reliability of connectors for the telecom industry years ago, they found a fascinating relationship between the contact normal force (i.e., the force of the spring loaded female connector submitting on the male pin) and the long term reliability of the conducting surface.

Whenever the contact normal force exceeds 1.0N (100g), the contact system has proven to be reliable for high end telecom (HET) applications with regard to the contact resistance and to the fretting corrosion.

Unfortunately, when applying higher contact normal force to a connector system, two phenomena are recognized: the mating forces will be higher and the number of mating cycles will be reduced.

In order to compensate for these short-comings, Molex uses a special Bellcore approved and recommended lubrication which reduces the mating forces, gives the connector its expected life-time and also prevents fretting corrosion.

Molex Omnigrid 2.5 connectors are available in the Bellcore accepted version. Please contact Molex for special part numbers and for technical information.

The Omnigrid 2.5 connector system allows virtually all kinds of connector matings in different areas in and around the backplane, being the heart of the electronic packaging system. In addition, the front panel is planned to have connectors also for testing purposes, for fiber connections, and for additional power supply to the PCB.

Thus, the designation of the connector pins have to be standardized in order to enable a clear description for all applications. In general, due to the contact density, there is not enough space on insulator parts of the connector system to mark columns or rows or even pin designations. Therefore it was necessary to develop a designation which is easy to understand and clear with respect to any application:

Looking into a rack from the front side (operator's view), all vertically orientated lines (columns) are defined as columns A,

B, C, D and E (from the left to the right), and all horizontally orientated lines as rows (from top to bottom). This results in a pin description A2, B2, C2, D2 and E2 for the first row of contacts and A3, B3, C3, D3 and E3 for the second row of contacts, since the row No. 1 of a PCB connector is always occupied by the polarization key of the connector.

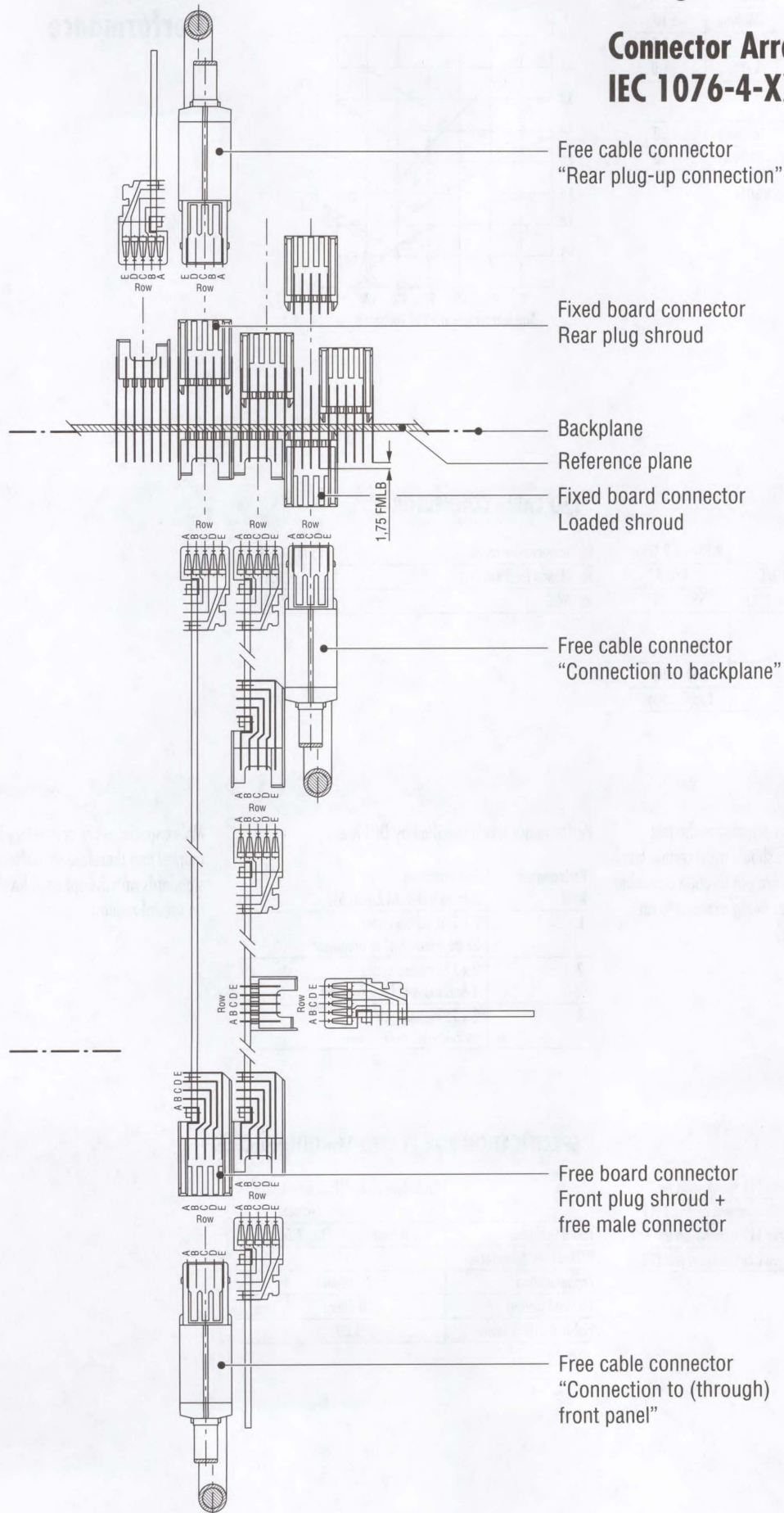
PCBs are always orientated with the higher components side to the right hand side (operator's view). The center of the B column is level with the PCB surface (higher components side) and therefore also called datum line.

When "butterfly" configuration is used — one PCB plugs behind the backplane to one or more PCB connectors being plugged in from the front side — the PCB female connector behind the backplane will stay with its designation. Thus, an A2 butterfly PCB contact may be connected to an E2 front PCB contact.

Since the rear I/O cable connectors can also be used as front I/O connectors, the designation of the cable connectors is orientated by how they plug to the I/O. Thus, when viewing from the cable outlet onto the back side of this connector, columns are counted A through E from left to right. A cable connector used as a rear I/O connector will mate with its E-row contact the A-column backplane pin. This is also true with the butterfly PCB female connector (see IEC 1076-4-xxxx draft on right hand side).

Note that the rear I/O cable connectors can be polarized to a certain rear I/O shroud position by means of coding slides which can be inserted into a total of six slots per sub-unit or into respective shroud positions,  $2^6 = 64$  possibilities.

**Connector Arrangement per  
IEC 1076-4-XXXX**





## ELECTRICAL

|                                         |        |       |
|-----------------------------------------|--------|-------|
| Contact resistance                      | (mOhm) | ≤ 20  |
| Insulation resistance                   | (MOhm) | ≥ 10  |
| Current rating fully loaded connector A |        | ≤ 1.5 |
| Dielectric strength                     | (kv)   | 1.0   |

For I/O cable connector

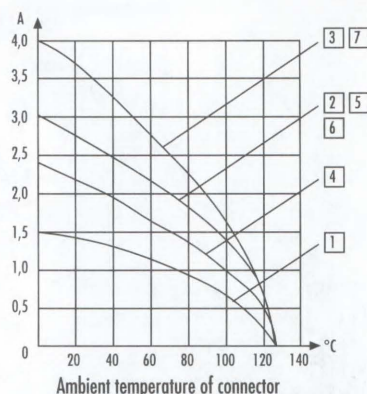
|                       |        |      |
|-----------------------|--------|------|
| Contact resistance    | (mOhm) | ≤ 30 |
| Insulation resistance | (MOhm) | ≥ 10 |

□ = see page Contact arrangements

## CURRENT CAPABILITY



## 2.50mm (.098") Pitch Omnigrid® Performance



## MECHANICAL

|                                    |               |
|------------------------------------|---------------|
| Pitch:                             | 2.5mm x 2.5mm |
| Insertion/withdrawal force (N/Cct) | ≤ 1/0.8       |
| Temperature range (°C)             | -55 to +125   |
| Performance Level 1                | 500 cycles    |
| Performance Level 2                | 250 cycles    |
| Contact material                   | Copper alloy  |

## I/O CABLE CONNECTOR

|                      |              |
|----------------------|--------------|
| Temperature range    | -55 to +80°C |
| Mating force (N/Cct) | ≤ 0.6        |
| AWG                  | 22-30        |

## PERFORMANCE LEVELS

The DIN 41612 specification also establishes the test conditions after which connectors should meet certain levels of performance. The connectors are put through a number of mating cycles before and after being exposed to an industrial environment (gas test).

Performance levels specified by DIN are:

| Performance level | Test conditions (acc. to DIN 41612, part 5)             |
|-------------------|---------------------------------------------------------|
| 1                 | 2 x 250 mating cycles<br>21 days industrial environment |
| 2                 | 2 x 125 mating cycles<br>4 days industrial environment  |
| 3                 | 2 x 25 mating cycles<br>no industrial environment       |

Molex specializes in connectors for the high-end telecom market and therefore in performance levels 1 and 2 as standards with the option of level 3 for low-end applications on special request.

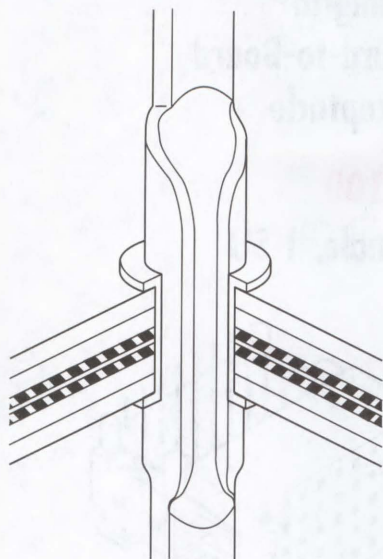
## CONTACT PLATING

|        |                                     |
|--------|-------------------------------------|
| G 1/0: | Contact area PL1 termination tin    |
| G 1/1: | Contact area front and rear end PL1 |
| G 2/0: | Contact area PL2 termination tin    |
| G 2/1: | Contact area front and rear end PL2 |

## SPECIFICATION FOR PLATED-THROUGH-HOLES

|                        | Backplane male | Daughter-board (female) |
|------------------------|----------------|-------------------------|
| Board thickness        | 1.6-4.5mm      | 1.6-3.2mm               |
| Drilled hole diameter  | 1.15           |                         |
| Copper plating         | 25-60µm        |                         |
| Tin/lead plating       | 10-20µm        |                         |
| Finished hole diameter | 1.00           |                         |

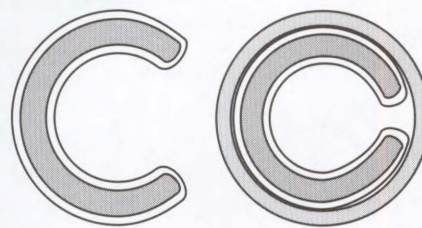




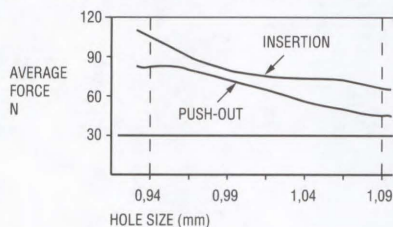
Press-fit technology was originally introduced to allow makers of multi-layer back-panels a way to interconnect multiple connectors without wave-soldering. Various designs have been developed to provide a reliable, gas-tight contact to work with large diameter tolerances on plated-through-holes (PTH).

The C-pin design offered by Molex is widely recognized for its superior features. The "C" shape of the press-fit area allows great flexibility for the contacts during press-in. The Molex C-pin offers uniform contact forces over 300° (of the 360°) of the PTH.

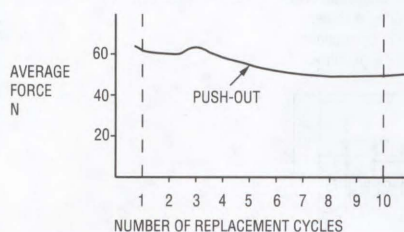
This prevents the PCB warpage caused by other designs. The smooth contact interface means less hole damage during insertion. Many users have found that this means easy and reliable field replacement of C-pin contacts.



Compliant pin insertion and retention forces vs. PTH diameter



Compliant pin retention force vs. replacement cycles



The Molex C-pin contact has been proven to offer low contact resistance and high retention forces under severe environmental conditions. This has led to its wide acceptance by industry leaders worldwide since the 1970's.

Although PCBs today are often available with plated-through-holes offering extremely low tolerances, many prefer the C-pin contact for its PCB-friendly design. The Molex C-pin provides excellent performance in PCB holes from 0.94 to 1.09mm (.037 to .043") diameter, a range far greater than those offered by many of the competing products in the market.

In the 1980's it was found that C-pin provided reliable connection with Copper plated-through-holes. The C-pin's broad surface area and PCB-friendly characteristics made it the design of choice for high-end users wishing to eliminate the additional costs and tolerance issues associated with plating their back-planes with Tin as well as Copper. Today, many manufacturers of electronics equipment are choosing to specify bare Copper boards or use Gold flash plating to accommodate the need for fine-pitch SMT components. The PCB-friendly Molex C-pin design has proven to provide excellent performance under these conditions as well.

## FMLB/LMFB SOLUTIONS FOR TELECOM APPLICATIONS

Telecom applications ask for FMLB levels for various reasons:

1. ESD (Electrostatic discharge) and EMI (Electromagnetic interference) require ground potential to be connected first in order to make sure no signal or power connection is done to the PCB, when inserted during power on. This function is dedicated to full-FMLB where the pins are 1.75mm (.069") longer than standard.

2. When the PCB is further plugged in, it is desired to have power connected as next sequence in order to prevent latching effects in ICs (happens if signals are connected before power). For this reason semi-FMLB pins are available which are 0.85mm (.033") longer than standard.

3. After 1. and 2., the signal contacts shall be connected next. These contacts have "zero-level".

4. In order to "start" the circuitry functions on the PCB, designers want to have a signal on the board, when all contacts are fully inserted. This signal normally is created by a series circuitry of two Last-make-first-break pin positions which should be located in the middle row (row C) close to the ends of the connector.

The IEC 102-4-100 specification for metric racks defines a maximum angular misalignment of the boards during insertion of  $\pm 0.5^\circ$  in longitudinal and transverse axis. The tangent of  $0.5^\circ$  equals 0.00872 which — over a height of a 4 SU connector 95.00mm (3.740") — accumulates already to 0.82905mm (.033"). In order to assure the mating sequence this must be the minimum distance between the various FMLB and LMFB of a 4 SU connector. Molex Omnigrid connectors do comply with these requirements as we divided the IEC suggestion for one extended mating length of +1.75mm (.069") only into two halves of 0.85mm (.033") each and added a lower level LMFB of -0.85mm (.033").



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Up to 35 contacts
- Selective loading available
- Versions available to meet Bellcore 1217 requirements
- V-press fit termination

## Electrical

Working Voltage: 750Vrms (fully loaded)  
 Current: 1.5A max. (fully loaded)  
 Contact Resistance: 30mΩ max.  
 Dielectric Withstanding Voltage: 1000V  
 Insulation Resistance: 10<sup>6</sup> MΩ min.

## Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
 Mating Force: 1N (.22 lb) max.  
 Unmating Force: 0.6N (.13 lb) min.  
 Durability: PL 1—500 cycles  
 PL 2—250 cycles

## Physical

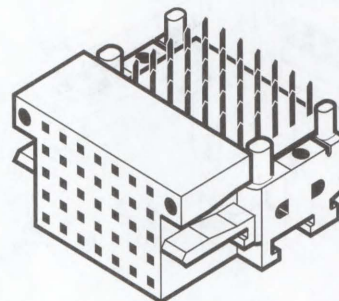
Housing: Polycarbonate, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: Performance level 1, 2 per IEC 1076-4-100  
 PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
 Operating Temperature: -55 to +125°C



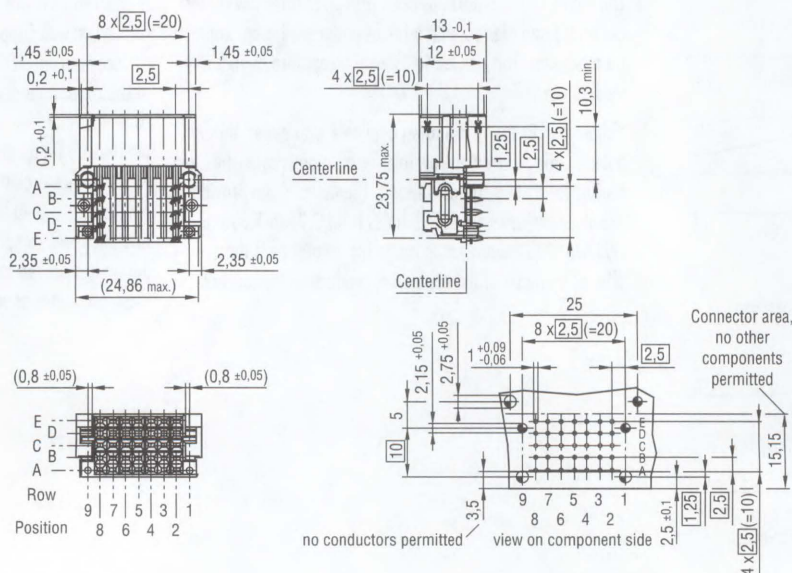
# 2.50mm (.098") Pitch Omnigrid® Board-to-Board Receptacle

85100

Female, 1 SU



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Order No.  |            |
|-------------|------------|------------|
|             | G1/0       | G2/0       |
| 1           | 85100-0000 | 85100-0012 |
| 2           | 85100-0024 | 85100-0036 |
| 3           | 85100-0048 | 85100-0050 |
| 4           | 85100-0062 | 85100-0074 |
| 5           | 85100-0086 | 85100-0098 |
| 6           | 85100-0103 | 85100-0115 |
| 7           | 85100-0127 | 85100-0139 |

Note: For contact plating codes (GX/X see Omnigrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements — please contact your local Molex office.

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 85 contacts
- Selective loading available
- Versions available to meet Bellcore 1217 requirements
- V-press fit termination

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

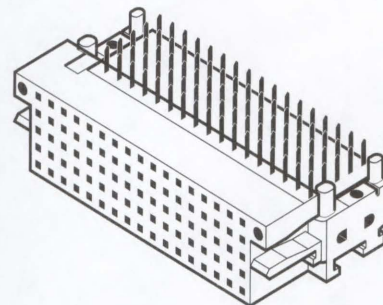
Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



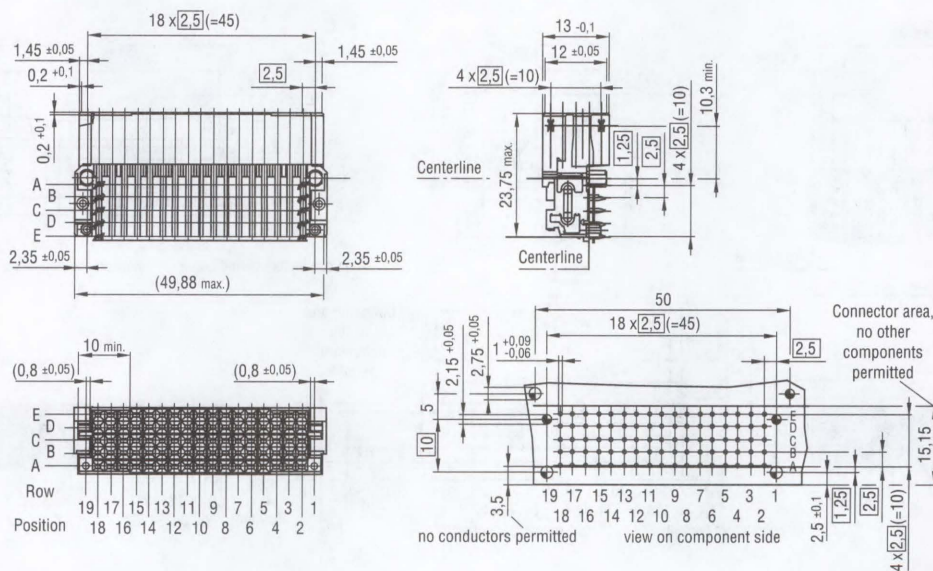
## 2.50mm (.098") Pitch Omnigrid® Board-to-Board Receptacle

### 85102

### Female, 2 SU



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Order No.  |            |
|-------------|------------|------------|
|             | G1/0       | G2/0       |
| 1           | 85102-0000 | 85102-0012 |
| 2           | 85102-0024 | 85102-0036 |
| 3           | 85102-0048 | 85102-0050 |
| 4           | 85102-0062 | 85102-0074 |
| 5           | 85102-0086 | 85102-0098 |
| 6           | 85102-0103 | 85102-0115 |
| 7           | 85102-0127 | 85102-0139 |

Note: For contact plating codes (GX/X see Omnigrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements — please contact your local Molex office.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 185 contacts
- Selective loading available
- Versions available to meet Bellcore 1217 requirements
- V-press fit termination

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

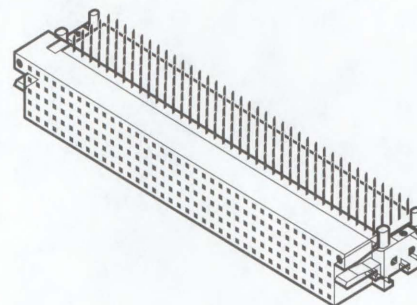
Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



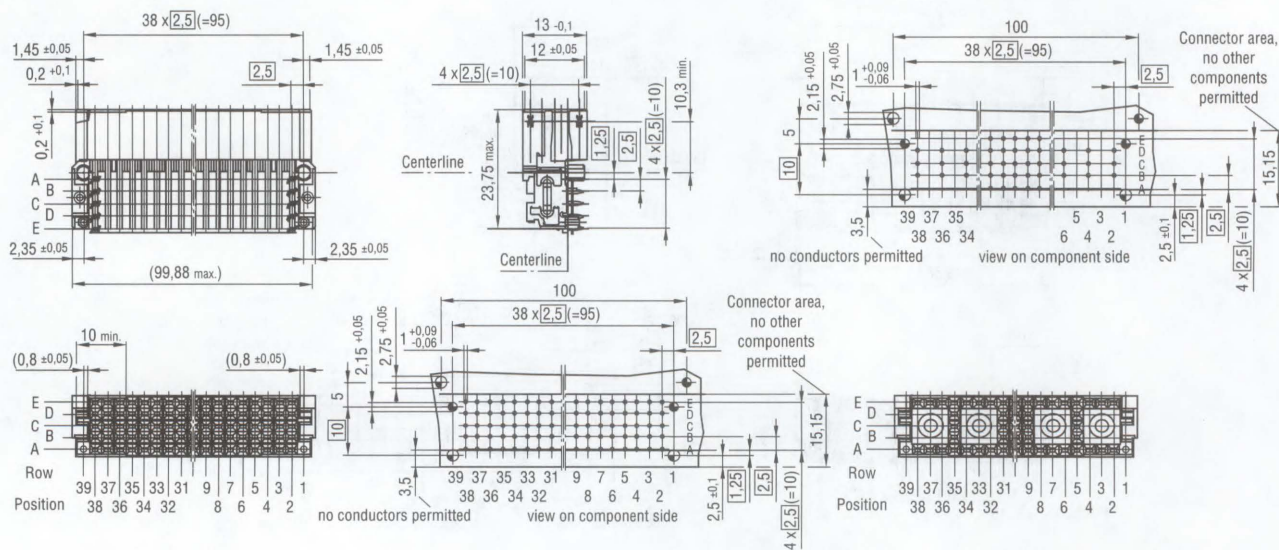
## 2.50mm (.098") Pitch OmniGrid® Board-to-Board Receptacle

**85104**

**Female, 4 SU + Power**



### CATALOG DRAWING (FOR REFERENCE ONLY)



### ORDERING INFORMATION

| Arrangement | Order No.  |                     |                       |                         |            |                     |                       |                         |
|-------------|------------|---------------------|-----------------------|-------------------------|------------|---------------------|-----------------------|-------------------------|
|             | G1/0       | Power 3 + 7<br>G1/0 | Power 33 + 37<br>G1/0 | Power 3+7+33+37<br>G1/0 | G2/0       | Power 3 + 7<br>G2/0 | Power 33 + 37<br>G2/0 | Power 3+7+33+37<br>G2/0 |
| 1           | 85104-0000 | 85124-0000          | 85124-0206            | 85124-0402              | 85104-0012 | 85124-0012          | 85124-0218            | 85124-0414              |
| 2           | 85104-0024 |                     |                       |                         | 85104-0036 |                     |                       |                         |
| 3           | 85104-0048 |                     |                       |                         | 85104-0050 |                     |                       |                         |
| 4           | 85104-0062 |                     |                       |                         | 85104-0074 |                     |                       |                         |
| 5           | 85104-0086 |                     |                       |                         | 85104-0098 |                     |                       |                         |
| 6           | 85104-0103 |                     |                       |                         | 85104-0115 |                     |                       |                         |
| 7           | 85104-0127 |                     |                       |                         | 85104-0139 |                     |                       |                         |

Note: For contact plating codes (GX/X see OmniGrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements — please contact your local Molex office.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 425 contacts
- Selective loading available
- Versions available to meet Bellcore 1217 requirements
- V-press fit termination

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

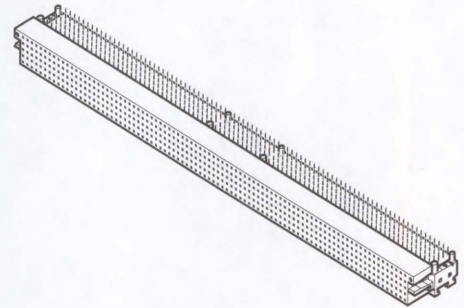
Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



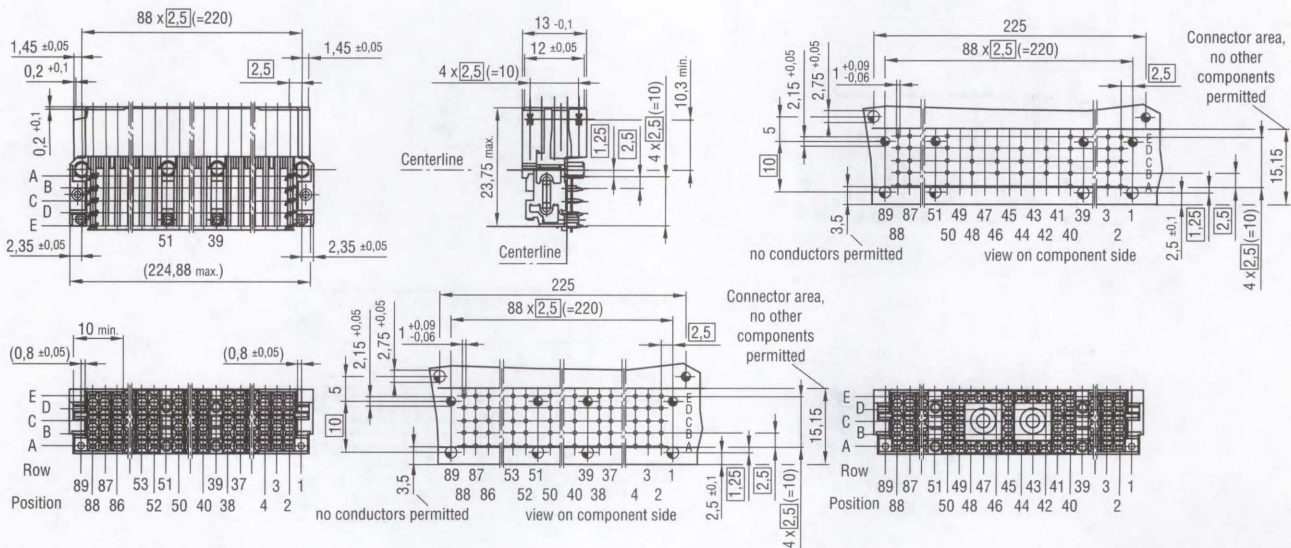
## 2.50mm (.098") Pitch OmniGrid® Board-to-Board Receptacle

### 85106

### Female, 9 SU + Power



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Order No.  |                |            |                |
|-------------|------------|----------------|------------|----------------|
|             | G1/0       | Power and G1/0 | G2/0       | Power and G2/0 |
| 1           | 85106-0000 | 85126-0206     | 85106-0012 | 85126-0218     |
| 2           | 85106-0024 |                | 85106-0036 |                |
| 3           | 85106-0048 |                | 85106-0050 |                |
| 4           | 85106-0062 |                | 85106-0074 |                |
| 5           | 85106-0086 |                | 85106-0098 |                |
| 6           | 85106-0103 |                | 85106-0115 |                |
| 7           | 85106-0127 |                | 85106-0139 |                |

Note: For contact plating codes (GX/X see OmniGrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements— please contact your local Molex office.



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Up to 475 contacts
- Selective loading available
- Versions available to meet Bellcore 1217 requirements
- V-press fit termination

## Electrical

Working Voltage: 750Vrms (fully loaded)  
 Current: 1.5A max. (fully loaded)  
 Contact Resistance: 30mΩ max.  
 Dielectric Withstanding Voltage: 1000V  
 Insulation Resistance: 10<sup>6</sup> MΩ min.

## Mechanical

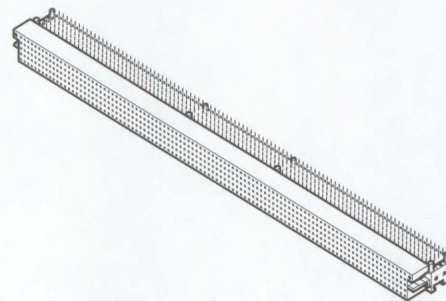
Insertion Force to PCB: 160N (35.97 lb) max.  
 Mating Force: 1N (.22 lb) max.  
 Unmating Force: 0.6N (.13 lb) min.  
 Durability: PL 1—500 cycles  
 PL 2—250 cycles

## Physical

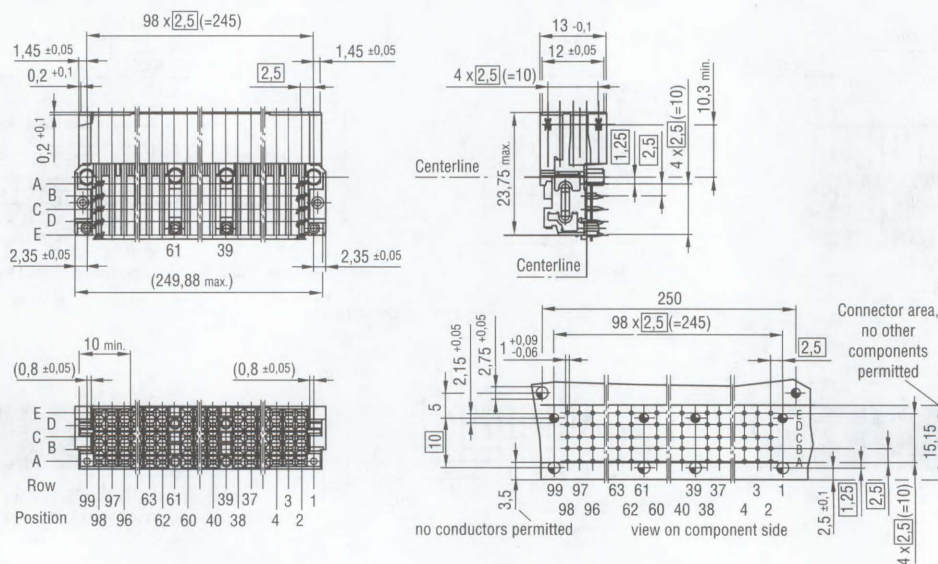
Housing: Polycarbonate, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: Performance level 1, 2 per IEC 1076-4-100  
 PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
 Operating Temperature: -55 to +125°C

# molex® 2.50mm (.098") Pitch Omnigrid® Board-to-Board Receptacle

## 85108 Female, 10 SU



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Order No.  |            |
|-------------|------------|------------|
|             | G1/0       | G2/0       |
| 1           | 85108-0000 | 85108-0012 |
| 2           | 85108-0024 | 85108-0036 |
| 3           | 85108-0048 | 85108-0050 |
| 4           | 85108-0062 | 85108-0074 |
| 5           | 85108-0086 | 85108-0098 |
| 6           | 85108-0103 | 85108-0115 |
| 7           | 85108-0127 | 85108-0139 |

Note: For contact plating codes (GX/X see Omnigrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements — please contact your local Molex office.

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Metric connector system
- 100g normal force
- No heat stake pegs
- V-press fit system
- 5 rows
- Available in 18.50mm (.728") height (for 2.50mm (.098") board-to-board grid)
- Available in 22.00mm (.866") height (for 2.50mm (.098") board-to-board grid)
- Connector applied last

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Creeping Distance: 0.60mm (.024") min.  
Wipe: 2.50mm (.098")

### Physical

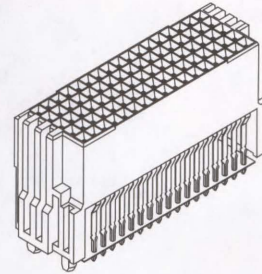
Housing: Polycarbonate, UL 94V-0  
Color: Gray RAL 7032  
Contact: Phosphor Bronze  
Plating: Performance level 1, per DIN 41612



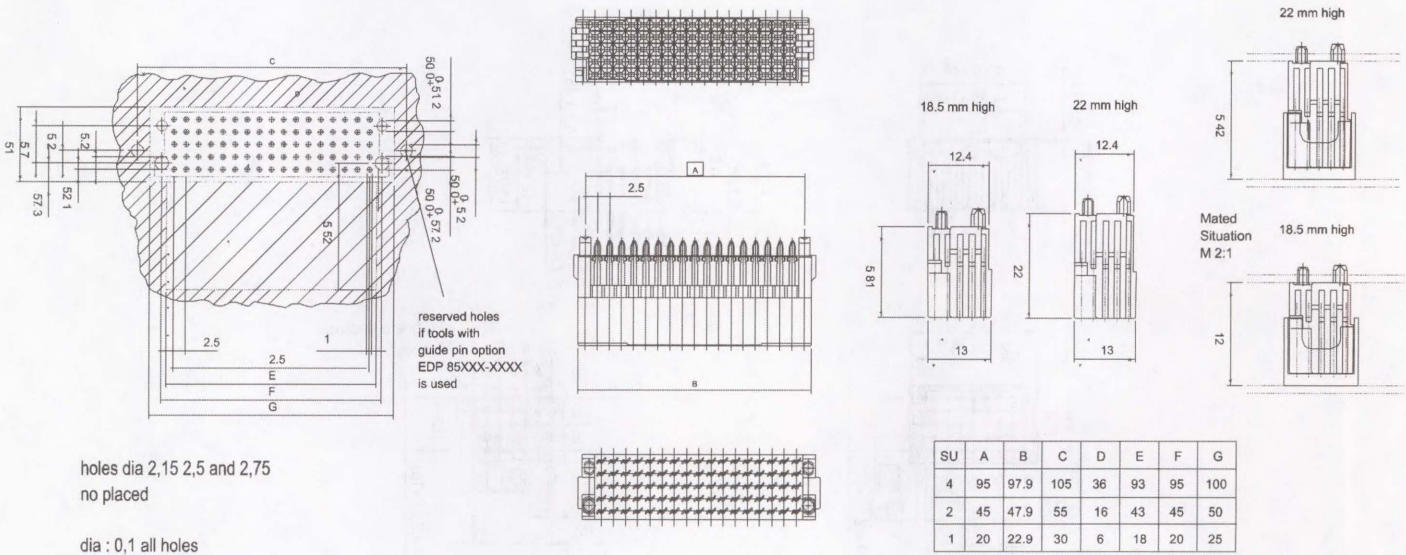
## 2.50mm (.098") Pitch Omnigrid® Complementary Component To IEC 1076-4-100

### 85171

## Vertical Female



## CATALOG DRAWING (FOR REFERENCE ONLY)







## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 35 contacts
- Selective loading available
- Rear plug pin lengths available
- First-make/last-break contacts
- Last-make/first-break contacts  
(Available at any position)
- C-pins

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

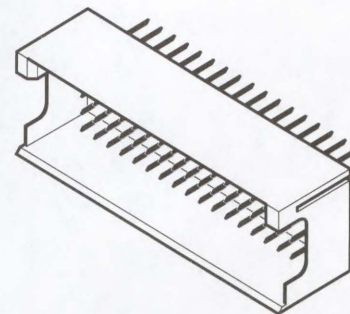
Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Gold performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



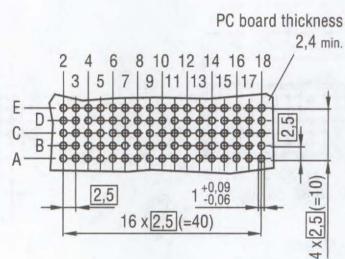
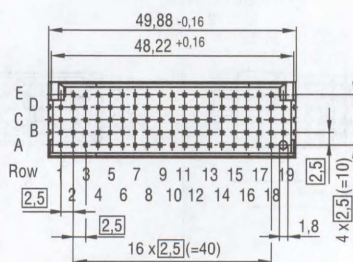
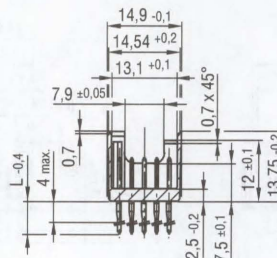
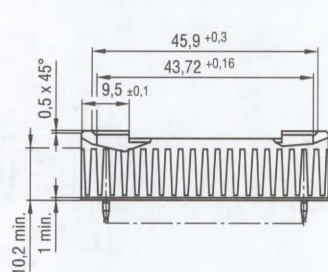
## 2.50mm (.098") Pitch Omnigrid® Board-to-Board Backplane Header

**85103**

**Male, 2 SU**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Termination | Order No.  |            |            |            |
|-------------|-------------|------------|------------|------------|------------|
|             |             | G1/0       | G1/1       | G2/0       | G2/2       |
| 1           | 6           | 85103-0012 |            | 85103-0062 |            |
| 1           | 14          |            | 85103-0103 |            | 85103-0139 |
| 1           | 17,75       |            | 85103-0115 |            | 85103-0141 |
| 2           | 6           | 85103-0177 |            | 85103-0220 |            |
| 2           | 14          |            | 85103-0268 |            | 85103-0294 |
| 2           | 17,75       |            | 85103-0270 |            | 85103-0309 |

Note: For contact plating codes (GX/X see Omnigrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements — please contact your local Molex office.







## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 35 contacts
- Selective loading available
- Rear plug pin lengths available
- First-make/last-break contacts
- Last-make/first-break contacts (Available at any position)
- C-pins

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

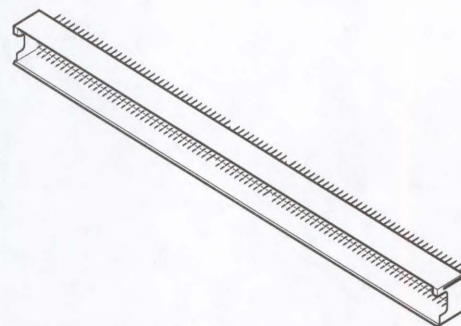
Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Gold performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



## 2.50mm (.098") Pitch OmniGrid® Board-to-Board Backplane Header

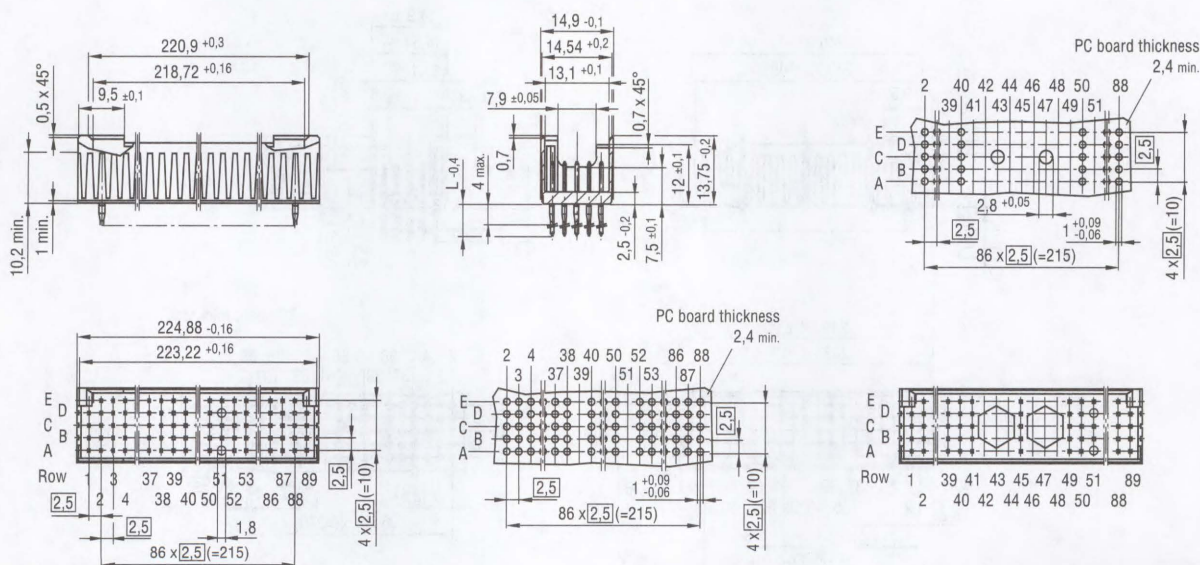
**85107**

**Male, 9 SU + Power**



Backplane Connector Systems

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Termination | Order No.  |            |            |            |
|-------------|-------------|------------|------------|------------|------------|
|             |             | G1/0       | G1/1       | G2/0       | G2/2       |
| 1           | 6           | 85107-0012 |            | 85107-0062 |            |
| 1           | 14          |            | 85107-0103 |            | 85107-0139 |
| 1           | 17,75       |            | 85107-0115 |            | 85107-0141 |
| 2           | 6           | 85107-0177 |            | 85107-0220 |            |
| 2           | 14          |            | 85107-0268 |            | 85107-0294 |
| 2           | 17,75       |            | 85107-0270 |            | 85107-0309 |
| 1+Power     | 6           | 85127-0000 |            | 85127-0012 |            |
| 1+Power     | 14          |            | 85127-0036 |            | 85127-0050 |
| 1+Power     | 17,75       |            | 85127-0074 |            | 85127-0098 |

| Power Male Pin |            |
|----------------|------------|
| Length         | Order No.  |
| 17.20 (.677)   | 85910-2034 |
| 21.25 (.837)   | 85910-2035 |

Note: For contact plating codes (GX/X see OmniGrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements— please contact your local Molex office.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 35 contacts
- Selective loading available
- Rear plug pin lengths available
- First-make/last-break contacts
- Last-make/first-break contacts (Available at any position)
- C-pins

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Insertion Force to PCB: 160N (35.97 lb) max.  
Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Durability: PL 1—500 cycles  
PL 2—250 cycles

### Physical

Housing: Polycarbonate, UL 94V-0  
Contact: Phosphor Bronze  
Plating: Gold performance level 1, 2 per IEC 1076-4-100  
PCB Thickness: 1.60 to 2.00mm (.063 TO .079")  
Operating Temperature: -55 to +125°C



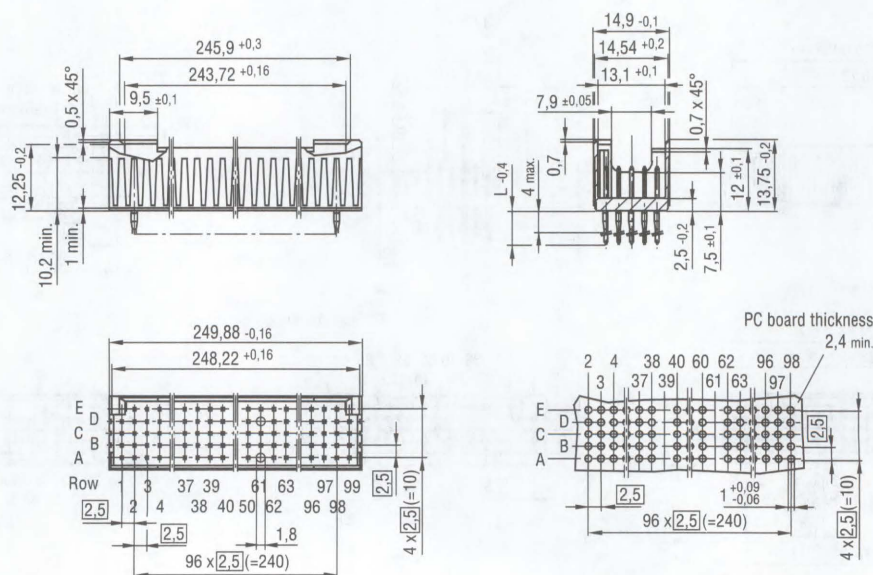
## 2.50mm (.098") Pitch Omnigrid® Board-to-Board Backplane Header

**85109**

**Male, 10**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Arrangement | Termination | Order No.  |            |            |            |
|-------------|-------------|------------|------------|------------|------------|
|             |             | G1/0       | G1/1       | G2/0       | G2/2       |
| 1           | 6           | 85109-0012 |            | 85109-0062 |            |
| 1           | 14          |            | 85109-0103 |            | 85109-0139 |
| 1           | 17,75       |            | 85109-0115 |            | 85109-0141 |
| 2           | 6           | 85109-0177 |            | 85109-0220 |            |
| 2           | 14          |            | 85109-0268 |            | 85109-0294 |
| 2           | 17,75       |            | 85109-0270 |            | 85109-0309 |

Note: For contact plating codes (GX/X see Omnigrid Performance Page) For press-in insertion, please refer to tooling section. For other versions —tail length, plating, arrangements— please contact your local Molex office.

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Metric connector system
- No heat stake pegs
- V-press fit System
- 5 rows

### Electrical

Working Voltage: 750Vrms (fully loaded)  
Current: 1.5A max. (fully loaded)  
Contact Resistance: 30mΩ max.  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Mechanical

Mating Force: 1N (.22 lb) max.  
Unmating Force: 0.6N (.13 lb) min.  
Wipe: 2.50mm (.098")

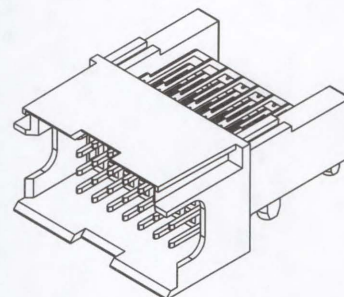
### Physical

Housing: Polycarbonate, UL 94V-0  
Color: Gray RAL 7032  
Contact: Phosphor Bronze  
Plating: Gold performance level 1, per IEC 1076-4-100

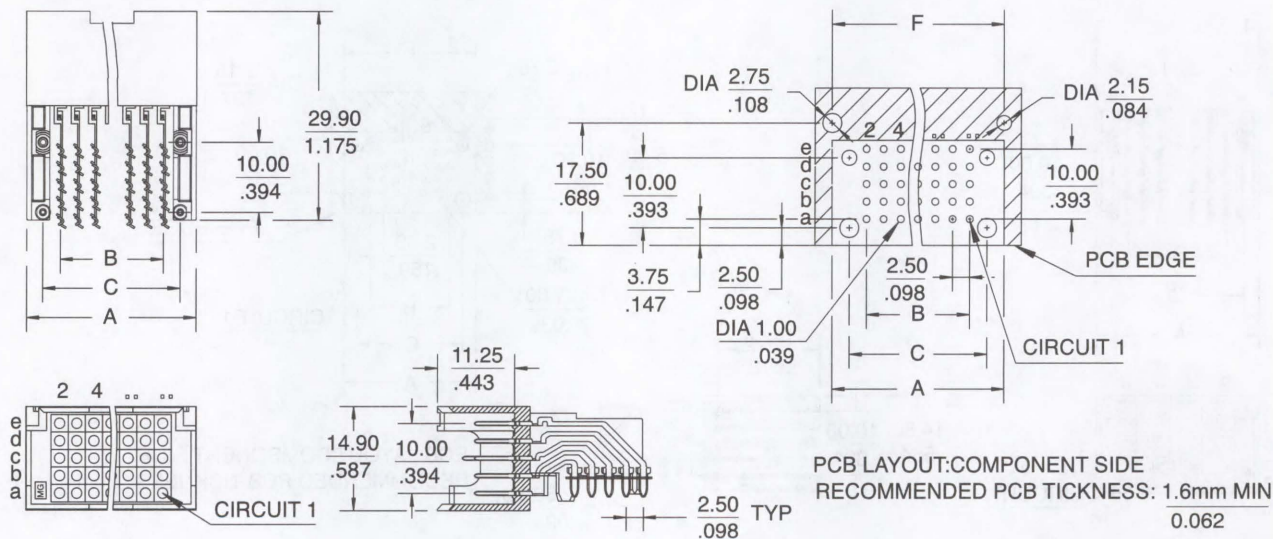
**molex** 2.50mm (.098") Pitch  
**Omnigrid®**  
**Header**

**85117**

**Right Angle, Female Interface**  
**IEC 1076-4-100**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Order No.  | Size   | Terminals | Packaging   | Dimension      |                |                |                |
|------------|--------|-----------|-------------|----------------|----------------|----------------|----------------|
|            |        |           |             | A              | B              | C              | F              |
| 85117-0000 | 1 SU   | 35        | 1200 pieces | 25.00 (.984)   | 15.00 (.591)   | 20.00 (.787)   | 25.00 (.984)   |
| 85117-0012 | 2 SU   | 85        | 600 pieces  | 50.00 (1.968)  | 40.00 (1.575)  | 45.00 (1.772)  | 50.00 (1.968)  |
| 85117-0024 | 4 SU   | 185       | 300 pieces  | 100.00 (3.937) | 90.00 (3.543)  | 95.00 (3.740)  | 100.00 (3.937) |
| 85117-0036 | 5,4 SU | 250       | 180 pieces  | 135.00 (5.315) | 125.00 (4.921) | 130.00 (4.921) | 135.00 (5.315) |





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Short circuit safe reversed contacts
- Features 2 additional system levels for first-make/last-break life insertion
- Press fit mounting with application tool for female connector on backplane
- Flat rock press in for male connector on daughtercard
- Plain East-West routing on backplane
- Pin layout 2.5mm hard metric
- Selective loading possible
- 8 contact points per male <-> female circuit
- Current distribution
- Preloaded contacts

### Electrical

Voltage: 100V/AC\*  
Current: 15A @ +70°C  
Contact Resistance: 1mΩ max.  
Dielectric Withstanding Voltage: 1400Vrms  
Insulation Resistance: 10<sup>12</sup> MΩ min.

### Mechanical

Mating Force: 35N (7.9 lb) max. (fully loaded)  
Unmating Force: 4 circuits loaded—14N (3.11 lb) min.  
Creeping Distance: 1.40mm (.055") min. @ CTI>175  
Wipe: 6.00mm (.236")  
For FMLB circuit—7.75mm (.305")

### Physical

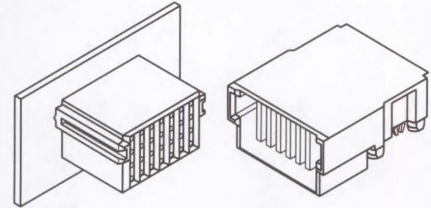
Housing: Polycarbonate, UL 94V-0  
Color: Gray RAL 7032  
Male Contacts: Phosphor Bronze  
Female Contacts: Impr. Phosphor Bronze  
Plating: 5μm/200μm Silver or Nickel

\* More depending on environmental and safety requirements

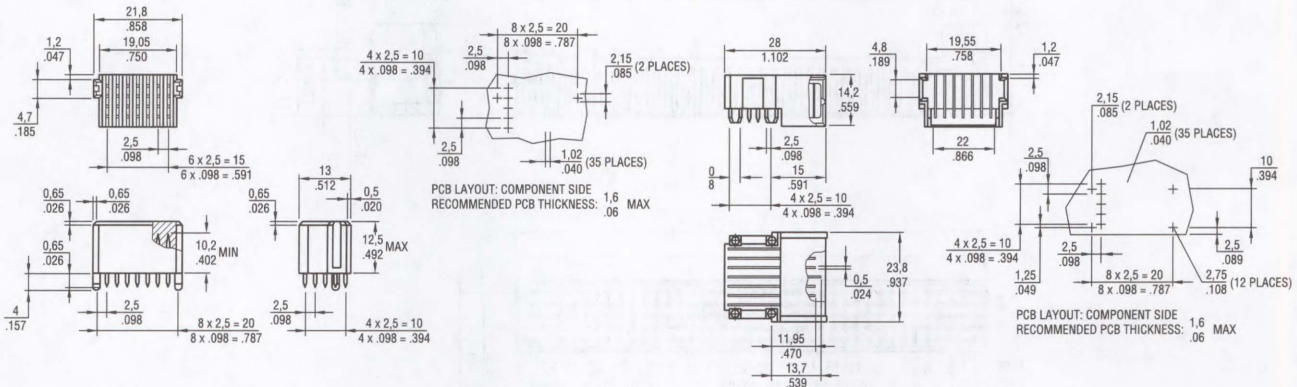
# molex® 2.50mm (.098") Pitch Omnigrid® Power Module

85160

IEC 1076



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits  | Loaded              | Male FMLB | Order No.  |             |
|-----------|---------------------|-----------|------------|-------------|
|           |                     |           | Male       | Female      |
| 4         | 1, 3, 5, 7          | none      | 85160-0062 | 85160-0012  |
| 7         | 1, 2, 3, 4, 5, 6, 7 | --345--   | 85160-0050 | 85160-0000  |
| 7         | 1, 2, 3, 4, 5, 6, 7 | 1-----7   | 85160-0048 | 85160-0000  |
| 7         | 1, 2, 3, 4, 5, 6, 7 | ----4---- | 85160-0036 | 85160-0000  |
| 7         | 1, 2, 3, 4, 5, 6, 7 | none      | 85160-0024 | 85160-0000  |
| Pack Size |                     |           | 72 pcs/box | 144 pcs/box |

Note: Omnigrid Power Module male connectors can be pressed in with a flat stamp (flat rock)





## FEATURES AND SPECIFICATIONS

### Features and Benefits

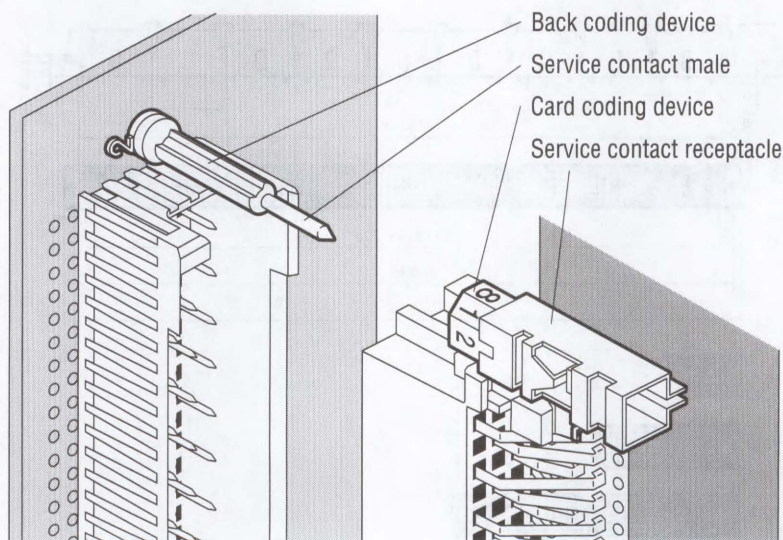
- Keying of PCB positions in rack
- Serves as an additional power contact
- 64 different possibilities
- Mates before signals for power sequencing
- Fits between connectors and card guide on metric standard boards
- Application tooling available



**2.50mm (.098") Pitch**  
**Omnigrid®**  
**Service Contacts**

**85323**

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| PCB (female) parts         | Order No.  |
|----------------------------|------------|
| Service contact receptacle | 85323-0000 |
| Card coding device, yellow | 85323-0012 |
| Card coding device, white  | 85323-0024 |
| Card coding device, green  | 85323-0062 |

| Backplane (male) parts (pref'd)     | Order No.  |
|-------------------------------------|------------|
| Service contact male pin 32mm long  | 85323-0086 |
| Service contact male FMLB 42mm long | 85323-0074 |
| Back coding device, white 1         | 85323-0713 |
| Back coding device, white 2         | 85323-0725 |
| Back coding device, white 3         | 85323-0737 |
| Back coding device, white 4         | 85323-0749 |
| Back coding device, white 5         | 85323-0751 |
| Back coding device, white 6         | 85323-0763 |
| Back coding device, white 7         | 85323-0775 |
| Back coding device, white 8         | 85323-0787 |

| Backplane (male) parts              | Order No.  |
|-------------------------------------|------------|
| Service contact male pin 32mm long  | 85323-0086 |
| Service contact male FMLB 42mm long | 85323-0074 |
| Back coding device, yellow 1        | 85323-0115 |
| Back coding device, yellow 2        | 85323-0127 |
| Back coding device, yellow 3        | 85323-0139 |
| Back coding device, yellow 4        | 85323-0141 |
| Back coding device, yellow 5        | 85323-0153 |
| Back coding device, yellow 6        | 85323-0165 |
| Back coding device, yellow 7        | 85323-0177 |
| Back coding device, yellow 8        | 85323-0189 |
| Back coding device, green 1         | 85323-0517 |
| Back coding device, green 2         | 85323-0529 |
| Back coding device, green 3         | 85323-0531 |
| Back coding device, green 4         | 85323-0543 |
| Back coding device, green 5         | 85323-0555 |
| Back coding device, green 6         | 85323-0567 |
| Back coding device, green 7         | 85323-0579 |
| Back coding device, green 8         | 85323-0581 |



## FEATURES AND SPECIFICATIONS

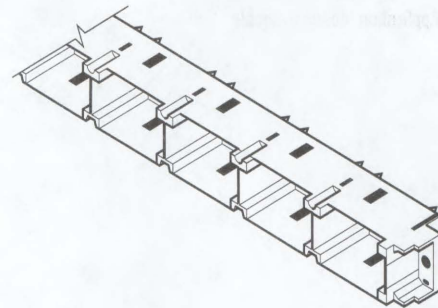
### Features and Benefits

- Accepts 1, 2, 4 SU cable connectors
- Polarized to assure orientation
- Retention rings hold in place
- Mating tolerance accurate relative to front of backplane
- Coding available

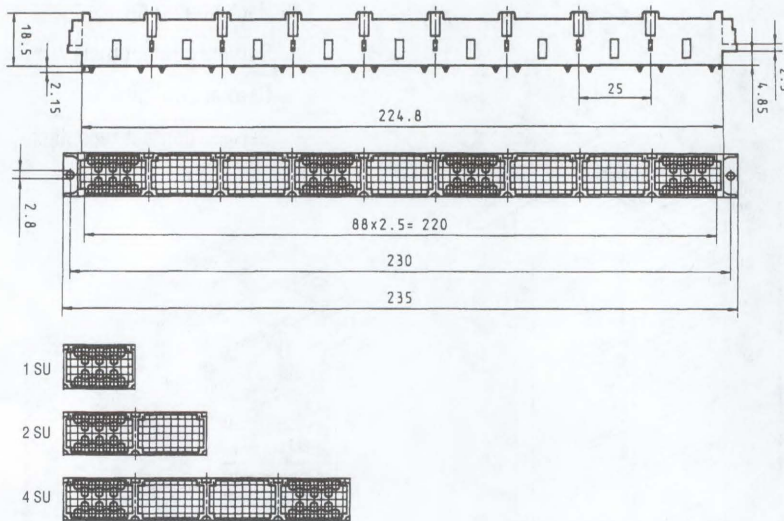


**2.50mm (.098") Pitch**  
**Omnigrid®**  
**Rear I/O Shrouds**

**85311**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Description                          | Order No.  |
|--------------------------------------|------------|
| Rear I/O shroud 9 SU/4 fixing fields | 85311-0036 |
| Rear I/O shroud 4 SU/2 fixing fields | 85311-0127 |
| Rear I/O shroud 2 SU/1 fixing field  | 85311-0488 |
| Rear I/O shroud 1 SU/1 fixing field  | 85311-0141 |

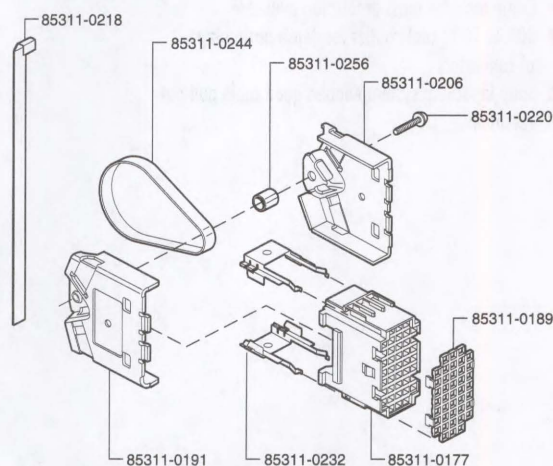
## FEATURES AND SPECIFICATIONS

### Features and Benefits

- For rear I/O or front I/O cable connections
- Available in 1 SU (41 circuits), 2 SU (82 circuits) or 4 SU (164 circuits)
- Complete kits for small quantity prototype production
- Separately packed in plastic bags
- Crimp termination for stranded or solid wires
- Only screw driver, contacts and hand crimp tool needed
- 30° cable outlet for dense packaging of connectors
- Snap-in locking system enables good cable pull-out retention
- Grounding contacts for cable shield connections

## molex® 2.50mm (.098") Pitch Omnigrid® Rear I/O Starter Kits

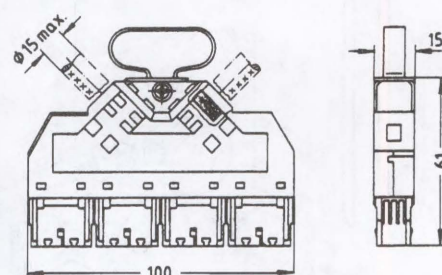
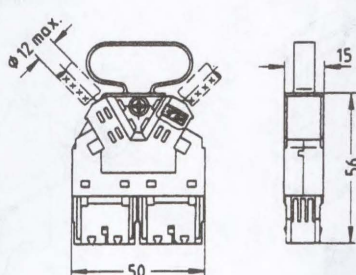
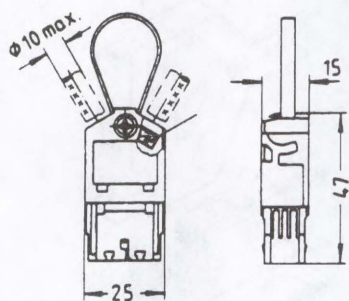
### 85311



1 SU

2 SU

3 SU



## ORDERING INFORMATION AND DIMENSIONS

| Description                                      | Order No.  |
|--------------------------------------------------|------------|
| 1 SU Backshell kit 30° hood w/grounding contacts | 85311-0048 |
| 2 SU Backshell kit 30° hood w/grounding contacts | 85311-0050 |
| 4 SU Backshell kit 30° hood w/grounding contacts | 85311-0060 |
| Reel with 350 crimp contacts AWG 22-26           | 85311-0438 |
| Reel with 350 crimp contacts AWG 26-30           | 85311-0440 |

Backplane Connector Systems

J



## FEATURES AND SPECIFICATIONS

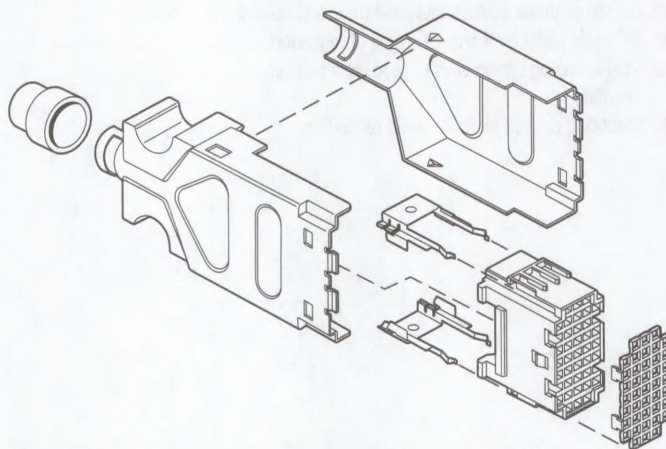
## Features and Benefits

- For rear I/O or front I/O cable connections
- Available in 1 SU (41 circuits), 2 SU (82 circuits) or 4 SU (164 circuits)
- Crimp termination for stranded or solid wires
- Piece parts ordering in bulk for different sizes
- Crimp tools for mass production available
- 30° or 180° cable outlet for dense packaging of connectors
- Snap-in locking system enables good cable pull-out retention

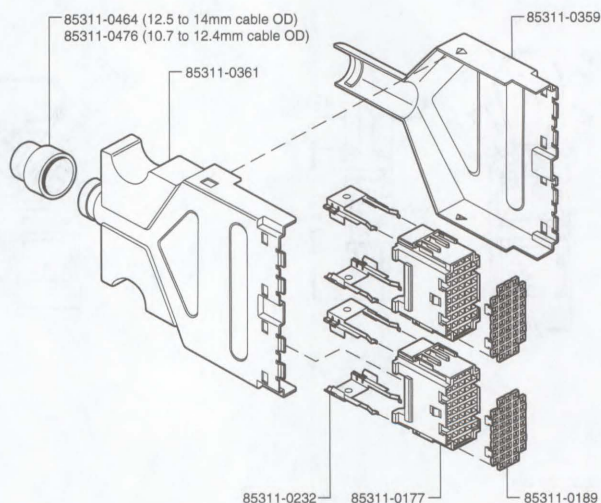
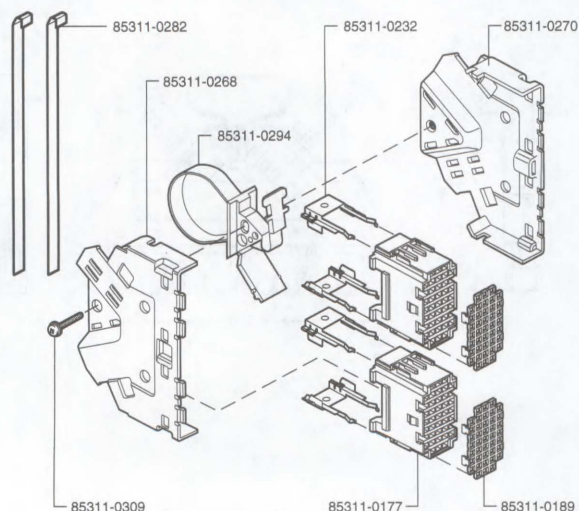


2.50mm (.098") Pitch

Omnigrid®

Rear I/O Cable Connectors  
With Crimp Termination

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

Pieces needed for version

| 1 SU | 2 SU | 3 SU | Backshells 30°                             | Order No.  |
|------|------|------|--------------------------------------------|------------|
| 1    | 2    | 4    | 1 SU Crimp contact body 41 x AWG 22-30     | 85311-0177 |
| 1    | 2    | 4    | 1 SU Crimp contact body front              | 85311-0189 |
| 1    |      |      | 1 SU Backshell 30° A-half                  | 85311-0191 |
| 1    |      |      | 1 SU Backshell 30° B-half                  | 85311-0206 |
| 1    |      |      | Steelband latch 1 SU                       | 85311-0218 |
| 1    |      |      | Screw for 1 SU Backshell                   | 85311-0220 |
| 2    | 4    | 8    | Grounding contact (if needed)              | 85311-0232 |
| 1    |      |      | Pull tab 1 SU                              | 85311-0244 |
| 1    |      |      | Distance tube                              | 85311-0256 |
|      | 1    |      | 2 SU Backshell 30° A-half                  | 85311-0268 |
|      | 1    |      | 2 SU Backshell 30° B-half                  | 85311-0270 |
|      | 1    | 2    | Steelband latch 2 SU/4 SU                  | 85311-0282 |
|      | 1    | 1    | Pull tab 2 SU/4 SU                         | 85311-0294 |
|      | 1    | 1    | Screw 2 SU/4 SU Backshell                  | 85311-0309 |
|      |      | 1    | 4 SU Backshell 30° A-half                  | 85311-0311 |
|      |      | 1    | 4 SU Backshell 30° B-half                  | 85311-0323 |
| 41   | 82   | 164  | Reel with 350 crimp contacts AWG 22-26     | 85311-0438 |
| 41   | 82   | 164  | Reel with 350 crimp contacts AWG 26-30     | 85311-0440 |
| 41   | 82   | 164  | Crimp contact 20000 pcs per reel AWG 26-22 | 85311-2003 |
| 41   | 82   | 164  | Crimp contact 20000 pcs per reel AWG 30-26 | 85311-1003 |

Pieces needed for version

| 1 SU | 2 SU | Backshells 180°                            | Order No.  |
|------|------|--------------------------------------------|------------|
| 1    | 2    | 1 SU Crimp contact body 41 x AWG 22-30     | 85311-0177 |
| 1    | 2    | 1 SU Crimp contact body front              | 85311-0189 |
| 1    |      | 1 SU Backshell 180° A-half                 | 85311-0335 |
| 1    |      | 1 SU Backshell 180° B-half                 | 85311-0347 |
| 1    |      | Ferrule for 9.5-11mm cable dia.            | 85311-0452 |
|      | 1    | 2 SU Backshell 180° A-half                 | 85311-0359 |
|      | 1    | 2 SU Backshell 180° B-half                 | 85311-0361 |
|      | (1)  | Ferrule for 10.7-12.4mm cable dia.         | 85311-0464 |
|      | (1)  | Ferrule for 12.5-14mm cable dia.           | 85311-0476 |
| 41   | 82   | Reel with 350 crimp contacts AWG 22-26     | 85311-0438 |
| 41   | 82   | Reel with 350 crimp contacts AWG 26-30     | 85311-0440 |
| 41   | 82   | Crimp contact 20000 pcs per reel AWG 26-22 | 90670-2003 |
| 41   | 82   | Crimp contact 20000 pcs per reel AWG 30-26 | 90670-1003 |

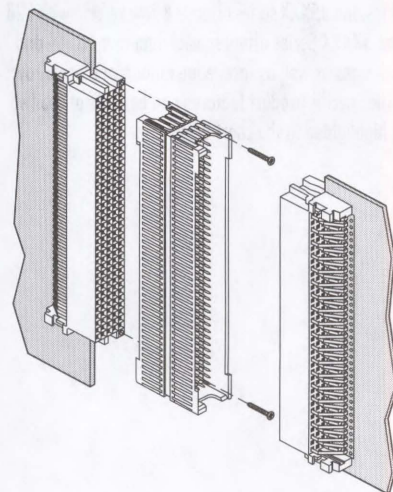
## FEATURES AND SPECIFICATIONS

### Features and Benefits

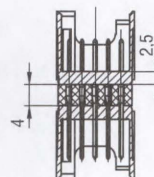
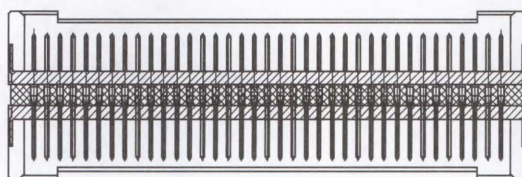
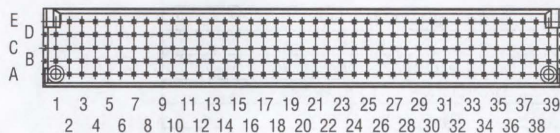
- Male-to-male adapters for service and repair
- For making extension boards
- Available in 1, 2, 4, 9 and 10 SU size
- Retained to female connector with screw
- Kits with female connectors for extender board production



## 2.50mm (.098") Pitch Omnigrid® Service Testing Accessories



## CATALOG DRAWING (FOR REFERENCE ONLY)



(4 SU shown)

## ORDERING INFORMATION AND DIMENSIONS

| Description                     | Order No.  |
|---------------------------------|------------|
| 1 SU Male-to-male adapter       | 85132-0103 |
| 2 SU Male-to-male adapter       | 85132-0115 |
| 4 SU Male-to-male adapter       | 85132-0127 |
| 9 SU Male-to-male adapter       | 85132-0139 |
| 10 SU Male-to-male adapter      | 85132-0141 |
| Screw for Male-to-male adapter  | 85999-2275 |
| 1 SU Male-to-male & female set  | 85132-0024 |
| 2 SU Male-to-male & female set  | 85132-0000 |
| 4 SU Male-to-male & female set  | 85132-0012 |
| 9 SU Male-to-male & female set  | 85132-0036 |
| 10 SU Male-to-male & female set | 85132-0048 |



FEATURES AND SPECIFICATIONS

Features and Benefits

Molex manufactures Series 85XXX and Series 5XXX DIN 41612 connectors to offer customers the greatest amount of design flexibility. Beyond the standard DIN 41612 circuit size offerings, the 85XXX series offers a 4-row version with 128 circuits. The 5XXX Series offers special dual row 16, 44 and 50-circuit designs as well as face, edge mount, and triple row versions. The specific product features and benefits of the two series are highlighted in the chart below.

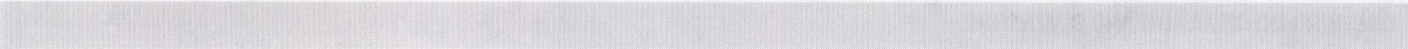


DIN 41612 Introduction

The DIN 41612 family of connectors has been widely accepted as a standard for a variety of interconnection applications in the telecommunications and data markets worldwide. This versatile connector system offers mating options for mother-board to daughter card as well as parallel board-to-board and horizontal board-to-board stacking.

SYSTEM COMPARISON

| 85XXX                                           | 5XXX                                     |
|-------------------------------------------------|------------------------------------------|
| Dual Opposing Beam Contact                      | Dual Single-Sided Beam Contact           |
| Solder, Press-Fit and Wire-Wrap Tails           | Solder Tails                             |
| Edge Mount Right-Angle Headers and Receptacles  | Face and Edge Mount Right-Angle Headers  |
| Styles and Sizes per DIN 41612                  | Special Dual Row Circuit Sizes Available |
| Plating per DIN Performance Levels              | Plating per Specified Thickness          |
| Signal and Mixed Layout Configurations          | Signal Styles Only                       |
| Standard, FMLB and LMFB Pins Available          | Standard Pin Length                      |
| PC Tail Lengths for Various Thickness PCBs      | PC Tails for 1.6mm (.062") PCBs          |
| Coaxial, High Current and High Voltage Inserts  |                                          |
| All Products Conform to DIN 41612 and IEC 603-2 | DIN 41612 Compatible                     |



## TERMINATION STYLES

### **Molex offers the following termination styles:**

- Solder tail for PCBs from 1.6mm to 3.4mm
- Press-fit C-Pin for solderless termination in backplanes from 1.6mm to 4.0mm

Molex offers a wide range of DIN 41612/IEC 603-2 "standard" and "reverse" style connectors for use in signal transmission and mixed layout applications.



## DIN 41612/IEC 603-2 85XXX Series Introduction

## STANDARD FEATURES AND OPTIONS

### **Dual Opposing Beam Contact**

Tulip-shaped contact design provides dual opposing points of contact. This insures a maximum 1.80mm wipe on both sides of a standard length pin and provides the highest resistance to shock and vibration.

### **Tapered PC Tails**

PC tails are tapered to ease insertion of connectors into the PCB.

### **FMLB/LMFB Pin Option**

Extended pins "First Make, Last Break" (0.6mm longer than standard) or recessed pins "Last Make, First Break" (0.6mm shorter than standard) can be inserted in a male connector in any location.

Provides System Designers the flexibility to extend a power or ground pin(s) and recess a system enable pin(s) to allow "Hot Pluggability"

Available on all DIN 41612 male connectors.

### **Board Lock Option**

Connector is supplied with fork-style board locks in place. Available on all 2 and 3 row DIN 41612 connectors.

Provides board retention during wave solder.

When used in conjunction with a plated-through hole or solder ring on the PCB, they will solder to the board and provide mechanical retention. This eliminates the costly addition of screws or rivets.

### **Flux-Proof Option**

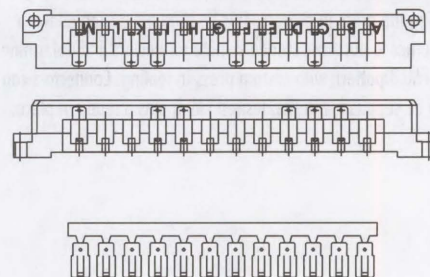
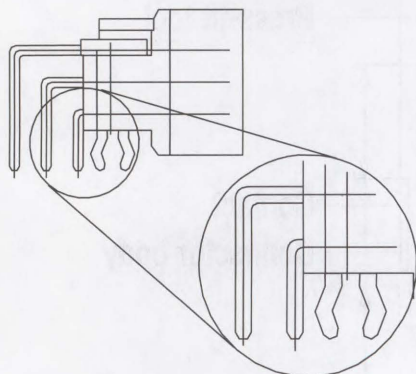
The solder tails of the connector are treated with a flux stopping agent. This agent creates an invisible film on the solder tails that increases local surface tension to prevent flux from creeping into the contact area. Available on all solder tail DIN 41612 connectors.

### **Coding Option**

A 12-position coding frame is integrated into the connector body. No contact loss occurs as the connector is coded (924 possible variations) to its mating connector. Available on Style C and Style R DIN 41612 connectors. Compatible with coding systems from several other manufacturers.

Coding combs are ordered separately.

Order Number: 85026-0012

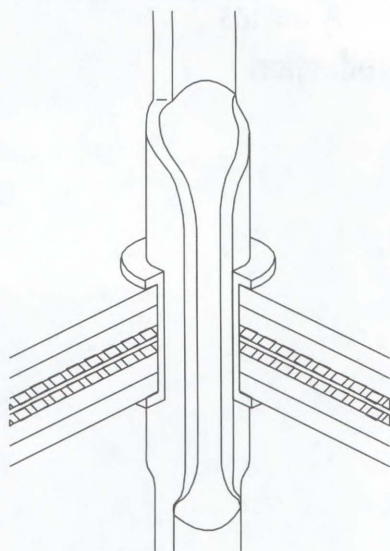




## C-PIN PRESS-FIT CONTACT



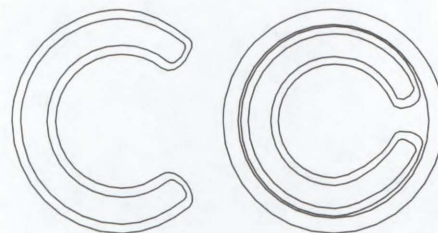
DIN 41612/IEC 603-2

C-PIN  
Introduction

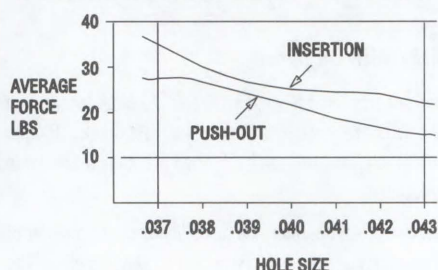
Press-fit technology was originally introduced to allow makers of multi-layer back panels a way to interconnect multiple connectors without wave soldering. Various designs have been developed to provide a reliable, gas-tight contact to work with large diameter tolerances on plated-through-holes (PTH).

The C-pin design offered by Molex is widely recognized for its superior features. The "C" shape of the press-fit area allows great flexibility for the contacts during press-in.

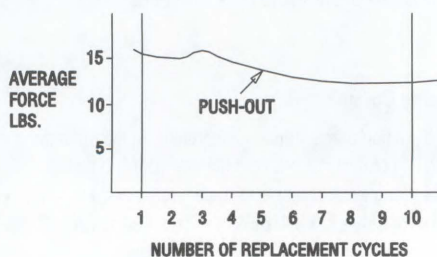
The Molex C-pin offers uniform contact forces over 300° (of the 360°) of the PTH. This prevents the PCB warpage caused by other designs. The smooth contact interface means less hole damage during insertion. Many users have found that this means easy and reliable field replacement of C-pin contacts.



Compliant pin insertion and retention forces vs. PTH diameter



Compliant pin retention force vs. replacement cycles

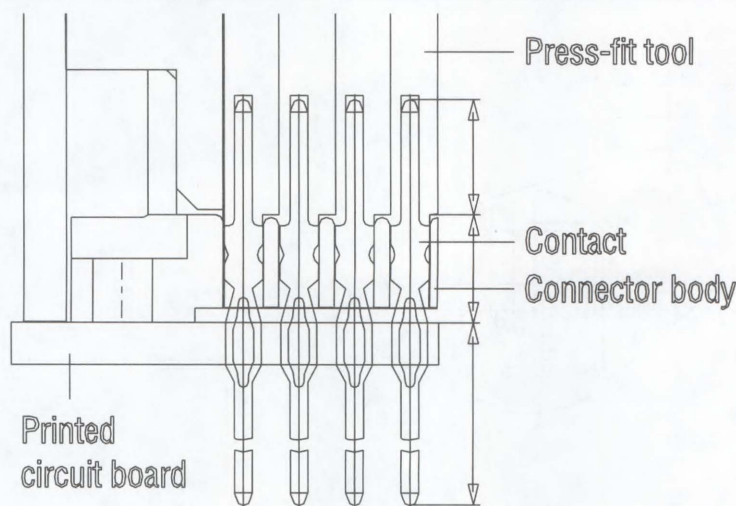


The Molex C-pin contact has been proven to offer low contact resistance and high retention forces under severe environmental conditions. This has led to its wide acceptance by industry leaders worldwide since the 1970's.

Although PCBs today are often available with plated-through-holes offering extremely low tolerances, many prefer the C-pin contact for its PCB-friendly design. The Molex C-pin provides excellent performance in PCB holes from 0.94 to 1.09mm diameter, a range far greater than those offered by any of the competing products in the market.

In the 1980's it was found that C-pin provided reliable connection with copper plated-through-holes. The C-pin's broad surface area and PCB-friendly characteristics made it the design of choice for high-end users wishing to eliminate the additional costs and tolerance issues associated with plating their back planes with tin as well as copper. Today many manufacturers of electronics equipment are choosing to specify bare copper boards or use gold flash plating to accommodate the need for fine-pitch SMT components. The PCB-friendly Molex C-pin design has proven to provide excellent performance under these conditions as well.

The design of the male Style R Housing and the long Press-fit zone of the C-pin allows a standard length pin to become an extended mate (first make, last break) pin during the press-in process. This floating pin design allows a customer to purchase standard male connectors and determine the FMLB pattern with custom press-in tooling. Connectors can also be supplied with the desired FMLB pins already in place.

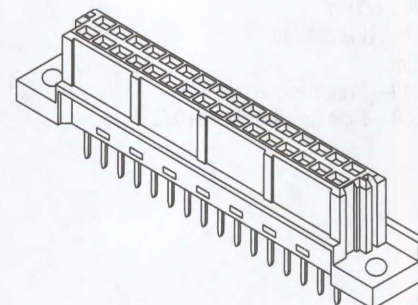




**2.54mm (.100") Pitch  
DIN 41612/IEC 603-2  
Connector**

85040

## Female Style B/2



## Features and Benefits

- Dual opposing beam contact
- Performance levels 1 and 2
- Board lock option
- Flux proof option
- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs

### Reference Information

Product Specification: PS-85042-0001

**Packaging:** Box

UL File No.: E29179

CSA File No.: LR19980-390

**Mates With:**

85001—Right angle male style B/2

85011—Straight male style Q/2

## Electrical

Current: 1.5A

Contact Resistance: 20mΩ max.

## Mechanical

Mating Force: 0.93N max.

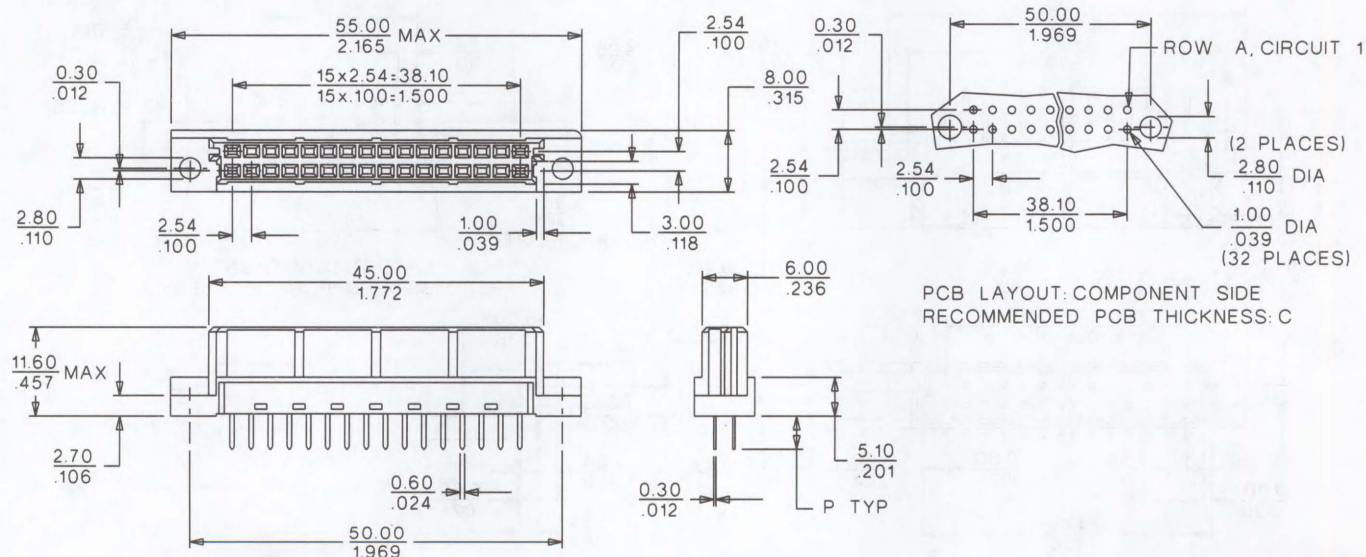
### Physical

**Housing:** Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

Operating Temperature: -55 to +125°C

**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.           |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)   |
|----------|---------------------|------------|-----------------|------|-------------------------|-------------|
|          | Performance Levels* |            |                 |      |                         |             |
|          | 1                   | 2          |                 |      |                         |             |
| 16       |                     | 85040-1005 | Even only       | a, b | 4.5 (.177)              |             |
| 32       |                     | 85040-0191 | Full            | a, b | 2.9 (.114)              | Board locks |
|          |                     | 85040-0012 |                 |      |                         |             |
|          | 85040-0713          | 85040-0000 |                 |      | 4.5 (.177)              |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Performance levels 1 and 2
- Flux proof option
- FMLB/LMFB pins (extended/recessed) available
- Board lock option
- Solder tails for 1.6mm (.062") PCBs (for 2.4mm (.094") PCBs on request)

### Reference Information

Product Specification: PPS-85003-0001

Packaging: Box

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85040—Straight female style B/2

85050—Right angle female style Q/2

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

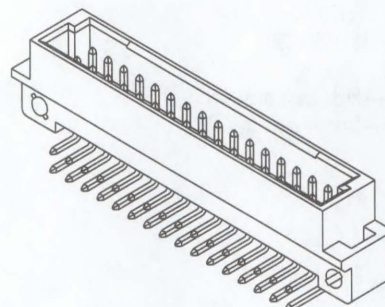
Operating Temperature: -55 to +125°C



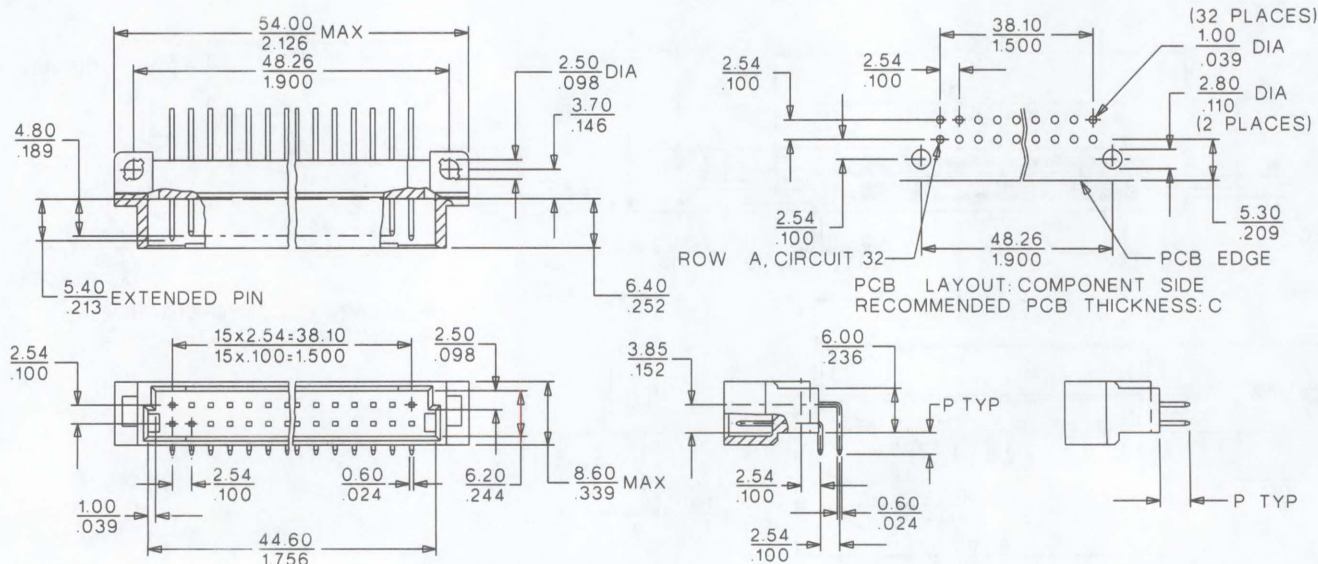
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85001**

**Male**  
**Style B/2**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|------|-------------------------|-------------|
|          | Performance Level* |            |                 |      |                         |             |
|          | 1                  | 2          |                 |      |                         |             |
| 16       |                    | 85001-0373 | Even only       | a, b | 3.0 (.118)              |             |
| 32       | 85001-0282         | 85001-0012 | Full            | a, b | 3.0 (.118)              |             |
|          |                    | 85001-0074 |                 |      |                         | Board locks |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

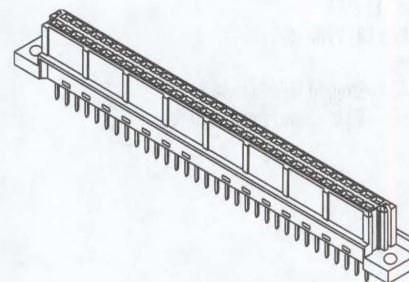
1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



85040

## Female Style B



- Dual opposing beam contact
- Performance levels 1 and 2
- Flux proof option
- Board lock option
- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs

Product Specification: PS-85042-0001  
Packaging: Box  
UL File No.: E29179  
CSA File No.: LR19980-390  
Mates With: 85001—Right angle male style B

Current: 1.5A  
Contact Resistance: 20mΩ max.

**Mating Force: 0.93N max.**

Housing: Glass-filled polyester, UL 94V-0  
Contact: Copper Alloy  
Operating Temperature: -55 to +125°C

Figure 1: PCB layout drawings for the component. The figure includes four views: a top view of the component, a side view, a top view of the component side, and a detail view of the component side. Dimensions are provided in inches and millimeters.

- Top View (Component):** Shows a rectangular component with a central section of 95.00 MAX (3.740) and a central section of 31x2.54=78.74 (31x.100=3.100). The component has a width of 95.00 MAX (3.740) and a height of 11.60 MAX (.457). The central section has a width of 31x2.54=78.74 (31x.100=3.100) and a height of 2.54 (.100). The component has a width of 95.00 MAX (3.740) and a height of 11.60 MAX (.457).
- Side View:** Shows a component with a height of 11.60 MAX (.457) and a width of 90.00 (3.543). The component has a width of 90.00 (3.543) and a height of 11.60 MAX (.457).
- Top View (Component Side):** Shows a component with a width of 90.00 (3.543) and a height of 11.60 MAX (.457). The component has a width of 90.00 (3.543) and a height of 11.60 MAX (.457).
- Detail View (Component Side):** Shows a component with a width of 90.00 (3.543) and a height of 11.60 MAX (.457). The component has a width of 90.00 (3.543) and a height of 11.60 MAX (.457).

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|------|-------------------------|-------------|
|          | Performance Level* |            |                 |      |                         |             |
|          | 1                  | 2          |                 |      |                         |             |
| 32       |                    | 85040-0696 | Even only       | a, b | 2.9 (.114)              |             |
|          |                    | 85040-1031 |                 |      |                         | Board locks |
| 64       |                    | 85040-0127 | Full            | a, b | 2.9 (.114)              |             |
|          |                    | 85040-0414 |                 |      |                         | Board locks |
|          | 85040-0206         | 85040-0050 |                 |      | 4.5 (.177)              |             |
|          |                    | 85040-0062 |                 |      |                         | Flux proof  |

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATION

### Features and Benefits

- Performance levels 1 and 2
- Flux proof option
- FMLB/LMFB pins (extended/recessed) available
- Board lock option
- Solder tails for 1.6mm (.062") PCBs (for 2.4mm (.094") PCBs on request)

### Reference Information

Product Specification: PS-85003-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

- 85040—Straight female style B
- 85050—Right angle female style Q

### Electrical

Current: 1.0A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

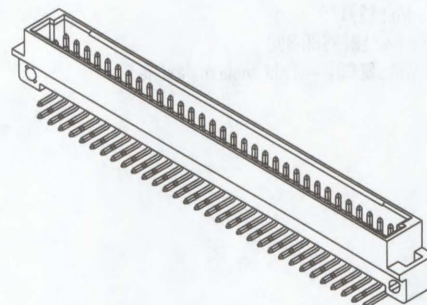
Operating Temperature: -55 to +125°C



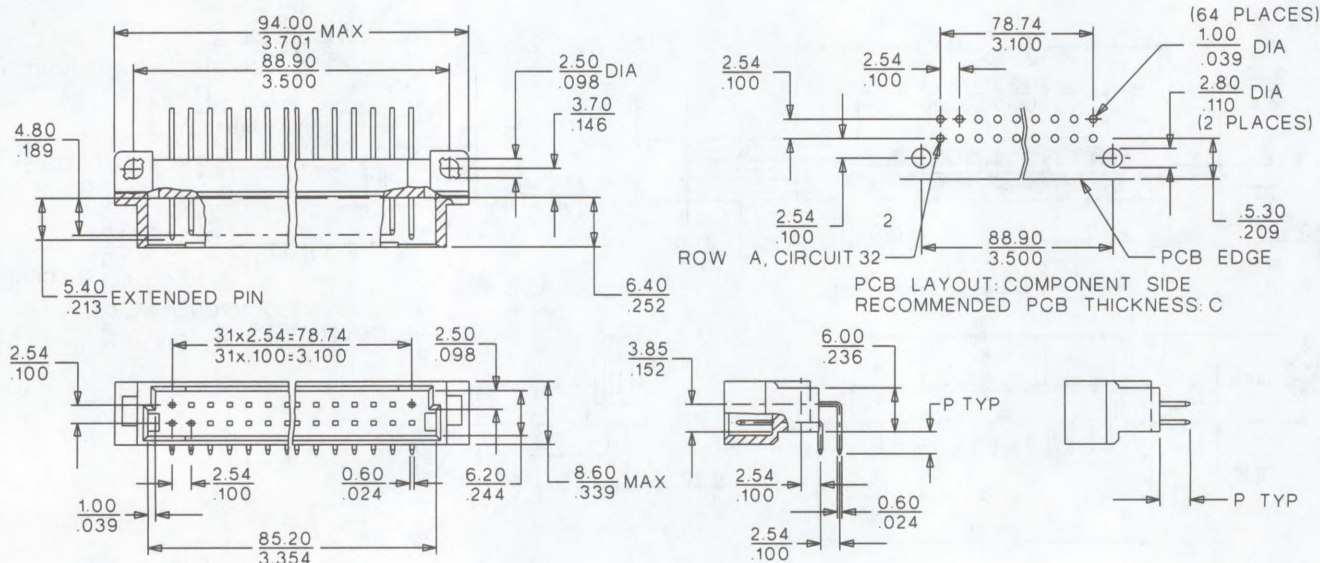
## 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

**85001**

**Male  
Style B**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)                 |
|----------|--------------------|------------|-----------------|------|-------------------------|---------------------------|
|          | Performance Level* |            |                 |      |                         |                           |
|          | 1                  | 2          |                 |      |                         |                           |
| 32       |                    | 85001-0050 | Even only       | a, b | 3.0 (.118)              |                           |
|          |                    | 85001-0397 |                 |      |                         | Board locks               |
| 64       | 85001-0256         | 85001-0036 | Full            | a, b | 3.0 (.118)              |                           |
|          |                    | 85001-0191 |                 |      |                         | Board locks               |
|          |                    | 85001-0385 |                 |      |                         | FMLB-8 pins: 1, 2, 31, 32 |
|          |                    |            |                 |      |                         |                           |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles, 4 day industrial environment (S02)

### Features and Benefits

- ### Reference Information

Mates With:

85013—Straight male style R/2

## Electrical

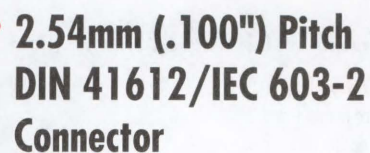
Contact Resistance: 20mΩ max.

## Mechanical

Mating Force: 0.93N max.

### Physical

Operating Temperature: -55 to +125°C



85042

## Female Style C/2

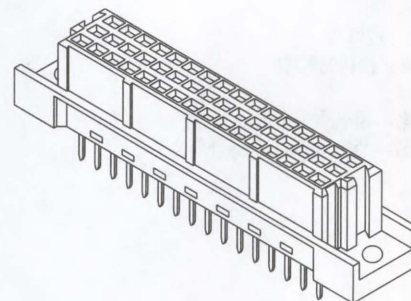


Figure 1: PCB layout of the component. The figure includes three views: a top view, a side view, and a component side view. The top view shows a rectangular component with dimensions: 55.00 MAX (2.165), 15x2.54=38.10 (15x.100=1.5), 50.00 (1.969), 2.54 (.100), 10.50 (.413), 3.00 (.118), 2.80 (.110), 0.30 (.012), 2.54 (.100), 1.00 (.039), 2.54 (.100), 50.00 (1.969), 2.80 DIA (.110) (2 PLACES), 1.00 DIA (.039) (48 PLACES), 50.00 (1.969), 2.54 (.100), 1.00 (.039), 2.54 (.100), 50.00 (1.969), 2.80 DIA (.110) (2 PLACES), 1.00 DIA (.039) (48 PLACES). The side view shows dimensions: 45.00 (1.772), 11.60 MAX (.457), 0.60 (.024), 50.00 (1.969). The component side view shows dimensions: 8.50 (.335), 5.10 (.201), 2.70 (.106), 0.30 (.012), P MAX. The text "PCB LAYOUT: COMPONENT SIDE" and "RECOMMENDED PCB THICKNESS: C" is also present.

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)  |
|----------|--------------------|------------|-----------------|---------|-------------------------|------------|
|          | Performance Level* |            |                 |         |                         |            |
|          | 1                  | 2          |                 |         |                         |            |
| 16       |                    | 85042-6139 | Even only       | a, c    | 4.5 (.177)              |            |
| 32       |                    | 85042-0074 | Full            | a, c    | 2.9 (.114)              | Flux proof |
|          |                    | 85042-2361 |                 |         | 4.5 (.177)              | Flux proof |
|          |                    | 85042-0048 |                 |         |                         |            |
|          |                    | 85042-0050 |                 |         |                         |            |
| 48       |                    | 85042-4268 | Full            | a, b, c | 2.9 (.114)              | Flux proof |
|          |                    | 85042-1184 |                 |         | 4.5 (.177)              | Flux proof |
|          | 85042-1330         | 85042-0086 |                 |         |                         |            |
|          |                    | 85042-0957 |                 |         |                         |            |

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Performance levels 1 and 2
- Flux proof option
- FMLB/LMFB pins (extended/recessed) available
- Board lock option
- Solder tails for 1.6mm (.062") PCBs (for 2.4mm (.094") PCBs on request)
- High temperature version on request

### Reference Information

Product Specification: PS-85003-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85042—Straight female style C/2

85052—Right angle female style R/2

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

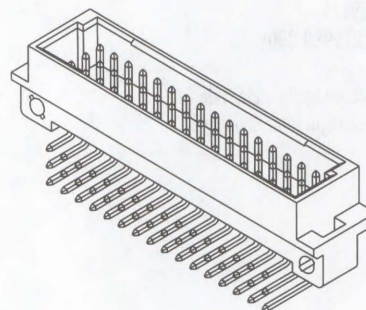
Operating Temperature: -55 to +125°C



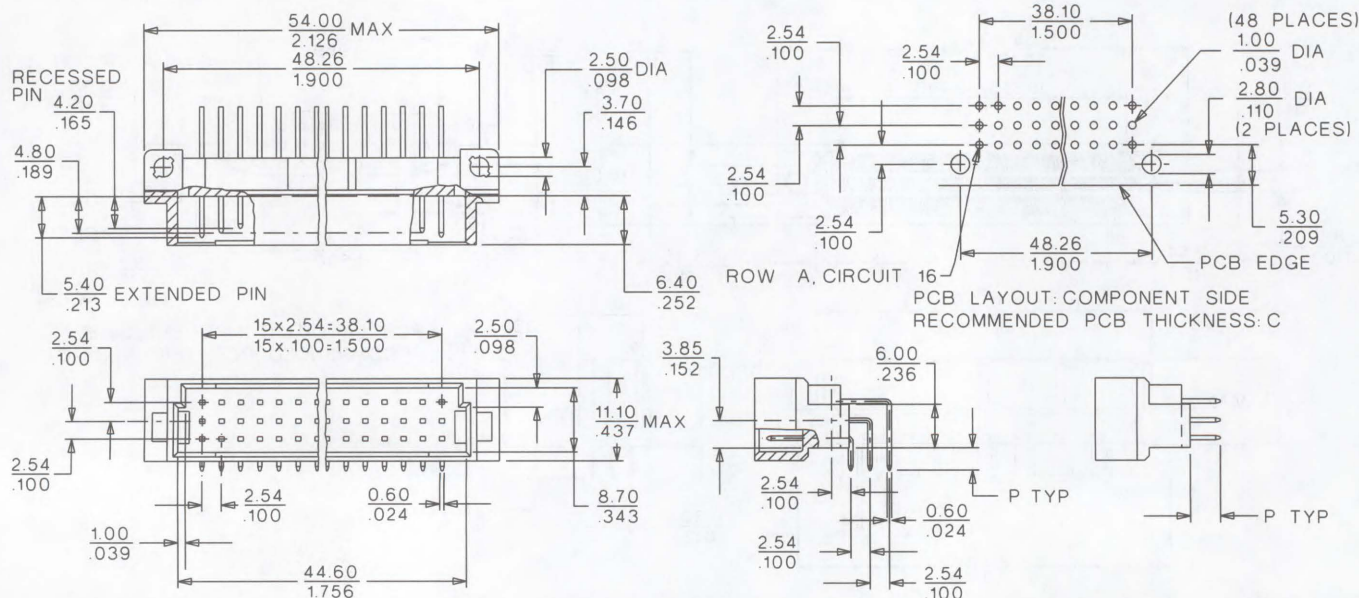
## 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

**85003**

**Male  
Style C/2**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)                  |
|----------|------------|------------|-----------------|---------|-------------------------|----------------------------|
|          | 1          | 2          |                 |         |                         |                            |
| 16       | 85003-0531 | 85003-0048 | Even only       | a, c    | 3.0 (.118)              |                            |
| 32       | 85003-1653 | 85003-0050 | Full            | a, c    | 3.0 (.118)              | FMLB-4 pins: 1, 16 a, c    |
|          |            | 85003-1782 |                 |         |                         | Board locks                |
|          | 85003-0701 | 85003-0062 |                 |         |                         |                            |
| 48       | 85003-3093 | 85003-0074 | Full            | a, b, c | 3.0 (.118)              | FMLB-4 pins: 1, 16 a, c    |
|          | 85003-1859 | 85003-1794 |                 |         |                         | Board locks                |
|          |            | 85003-3067 |                 |         |                         | FMLB-6 pins: 1, 16 a, b, c |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

**molex® 2.54mm (.100") Pitch  
DIN 41612/IEC 603-2  
Connector**

## Features and Benefits

- Performance levels 1 and 2
- Flux proof option
- Dual opposing beam contact
- Board lock option
- Coding option
- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs

### Reference Information

Product Specification: PS-85042-0001

**Packaging:** Tray

UL File No.: E29179

CSA File No.: LR19980-390

**Mates With:**

85003—Right angle male style C

85013—Straight male style R

## Electrical

Current: 1.5A

Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: 0.93N max.

### Physical

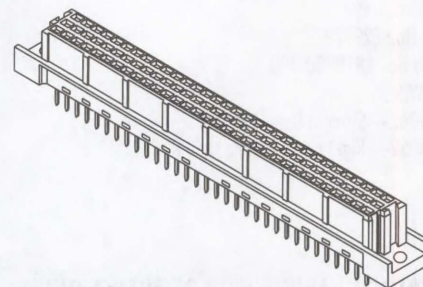
Housing: Glass-filled polyester, UL 94 V-0

Contact: Copper Alloy

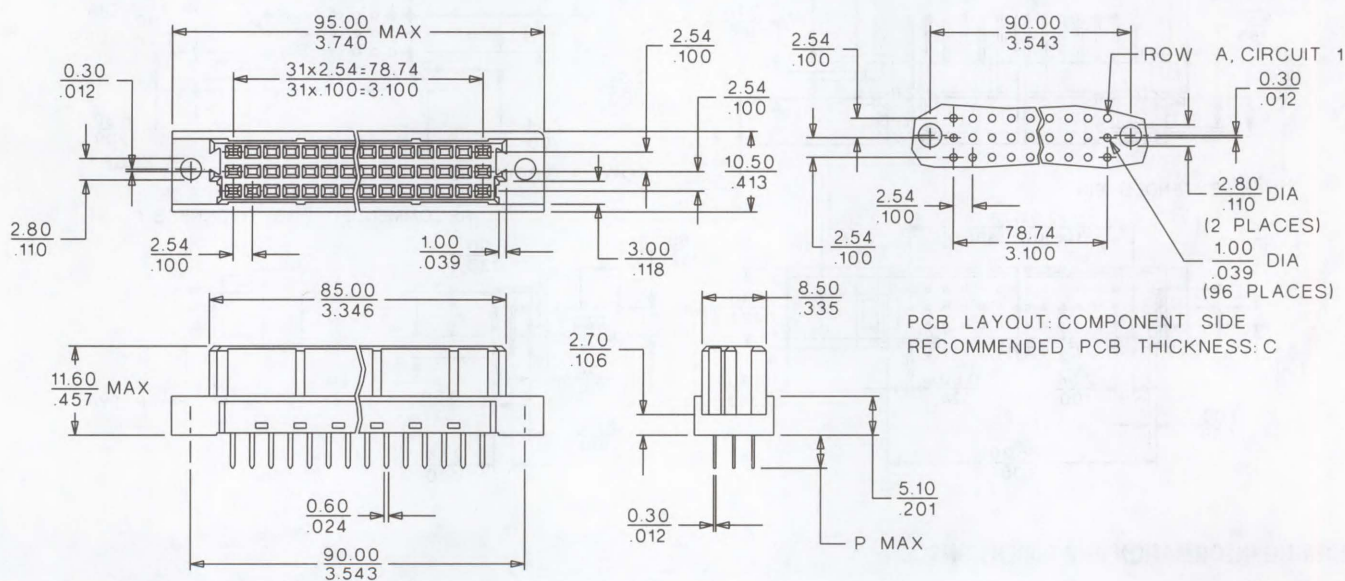
Operating Temperature: -55 to +125°C

85042

## Female Style C



**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)               |
|----------|--------------------|------------|-----------------|------|-------------------------|-------------------------|
|          | Performance Level* |            |                 |      |                         |                         |
|          | 1                  | 2          |                 |      |                         |                         |
| 32       |                    | 85042-3316 | Even only       | a, c | 2.9 (.114)              | Board locks, flux proof |
|          |                    | 85042-0397 |                 |      | 4.5 (.177)              |                         |
| 64       | 85042-1299         | 85042-0268 | Full            | a, c | 2.9 (.114)              | Board locks             |
|          | 85042-3639         | 85042-2529 |                 |      |                         | Flux-proof              |
|          |                    | 85042-2359 |                 |      |                         | Coding                  |
|          |                    | 85042-3524 |                 |      |                         |                         |
|          | 85042-1249         | 85042-0177 |                 |      | 4.5 (.177)              | Coding                  |
|          |                    | 85042-0189 |                 |      |                         | Flux-proof              |
|          |                    | 85042-0191 |                 |      |                         | Board locks             |
|          |                    | 85042-4696 |                 |      |                         |                         |
|          |                    |            |                 |      |                         |                         |

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|---------|-------------------------|-------------|
|          | Performance Level* |            |                 |         |                         |             |
|          | 1                  | 2          |                 |         |                         |             |
| 96       | 85042-1304         | 85042-0385 | Full            | a, b, c | 2.9 (.114)              |             |
|          |                    | 85042-1079 |                 |         |                         | Board locks |
|          | 85042-2347         |            |                 |         |                         | Flux-proof  |
|          | 85042-5213         | 85042-3548 |                 |         |                         | Coding      |
|          | 85042-1043         | 85042-0270 |                 |         | 4.5 (.177)              |             |
|          | 85042-0505         | 85042-0282 |                 |         |                         | Coding      |
|          |                    | 85042-0294 |                 |         |                         | Flux-proof  |
|          |                    | 85042-1213 |                 |         |                         | Board locks |
|          |                    |            |                 |         |                         |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Dual opposing beam contact
- Flux-proof option
- Solder tails for 1.6mm (.062") PCBs

### Reference Information

Product Specification: PS-85052-0001  
 Packaging: Box  
 UL File No.: E29179  
 CSA File No.: LR19980-390  
 Mates With: 85011—Straight male style Q/3

### Electrical

Electrical Current: 1.5A  
 Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: 0.93N max.

### Physical

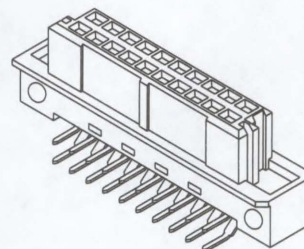
Housing: Glass-filled polyester, UL 94V-0  
 Contact: Copper Alloy  
 Operating Temperature: -55 to +125°C



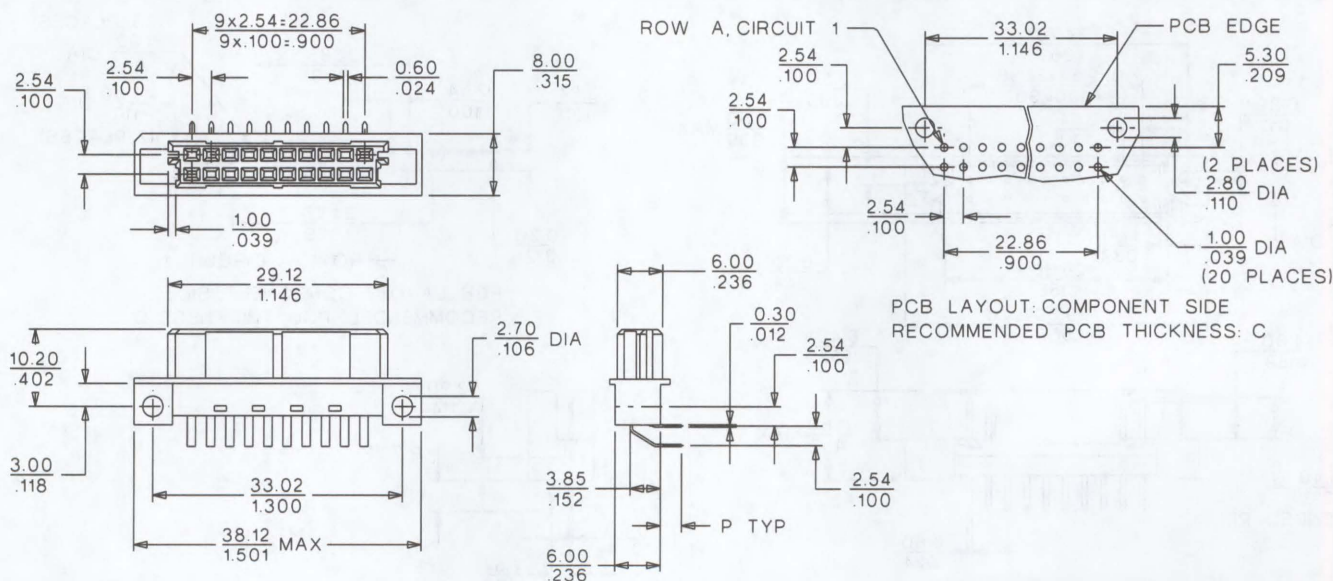
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85050**

**Female**  
**Style Q/3**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P |
|----------|--------------------|------------|-----------------|------|-------------------------|
|          | Performance Level* |            |                 |      |                         |
|          | 1                  | 2          |                 |      |                         |
| 20       | 85050-0050         | 85050-0086 | Full            | a, b | 3.0 (.118)              |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



**molex® 2.54mm (.100") Pitch  
DIN 41612/IEC 603-2  
Connector**

### Features and Benefits

- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs
- FMLB/LMFB pins (extended/recessed) available
- Flux-proof option

### Reference Information

Product Specification: PS-85013-0001

**Packaging:** Box

UL File No.: E29179

CSA File No.: LR19980-390

Mates With: 85050—Right angle female style Q/3

## Electrical

Current: 1.5A

### Physical

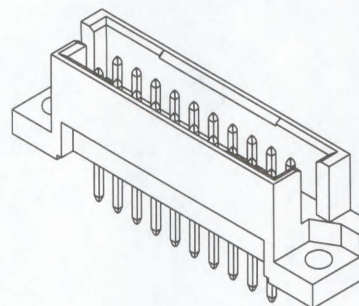
Housing: Glass-filled polyester, UL 94V-0

**Contact: Brass**

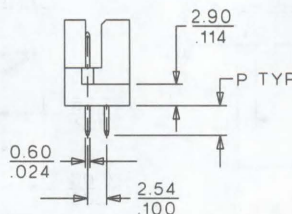
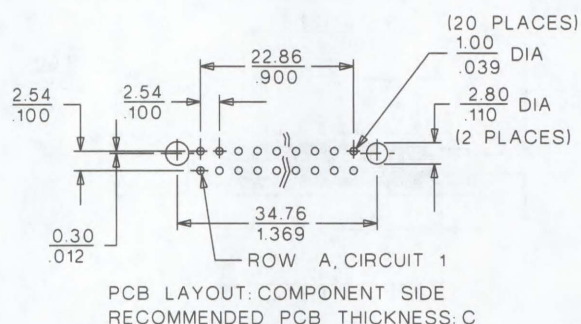
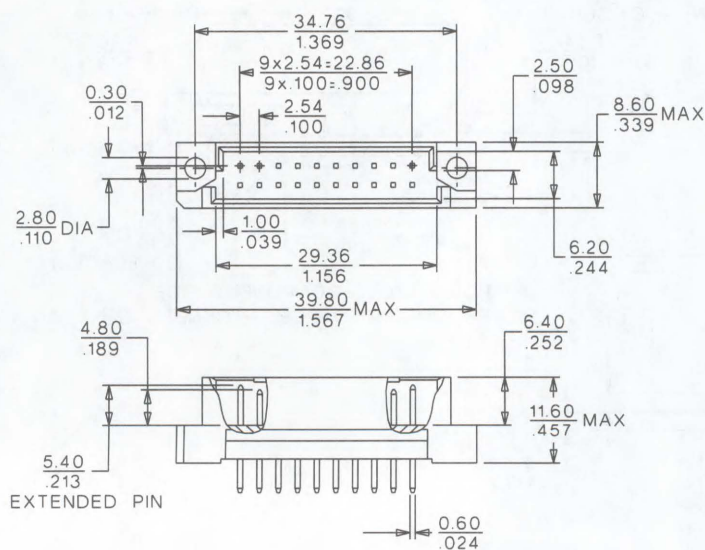
Operating Temperature: -55 to +125°C

85011

**Male**  
**Style Q/3**



**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P |
|----------|--------------------|------------|-----------------|------|-------------------------|
|          | Performance Level* |            |                 |      |                         |
|          | 1                  | 2          |                 |      |                         |
| 20       | 85011-0103         | 85011-0000 | Full            | a, b | 4.5 (.177)              |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Dual opposing beam contact
- Board lock option
- Flux-proof option
- Solder tails for 1.6mm (.062") and 2.4mm (.094") PCBs available

### Reference Information

Product Specification: PS-85052-0001

Packaging: Box

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85001—Right angle male style B/2

85011—Straight male style Q/2

### Electrical

Electrical Current: 1.5A

Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: 0.93N max.

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

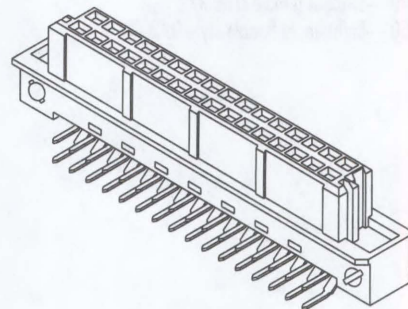
Operating Temperature: -55 to +125°C



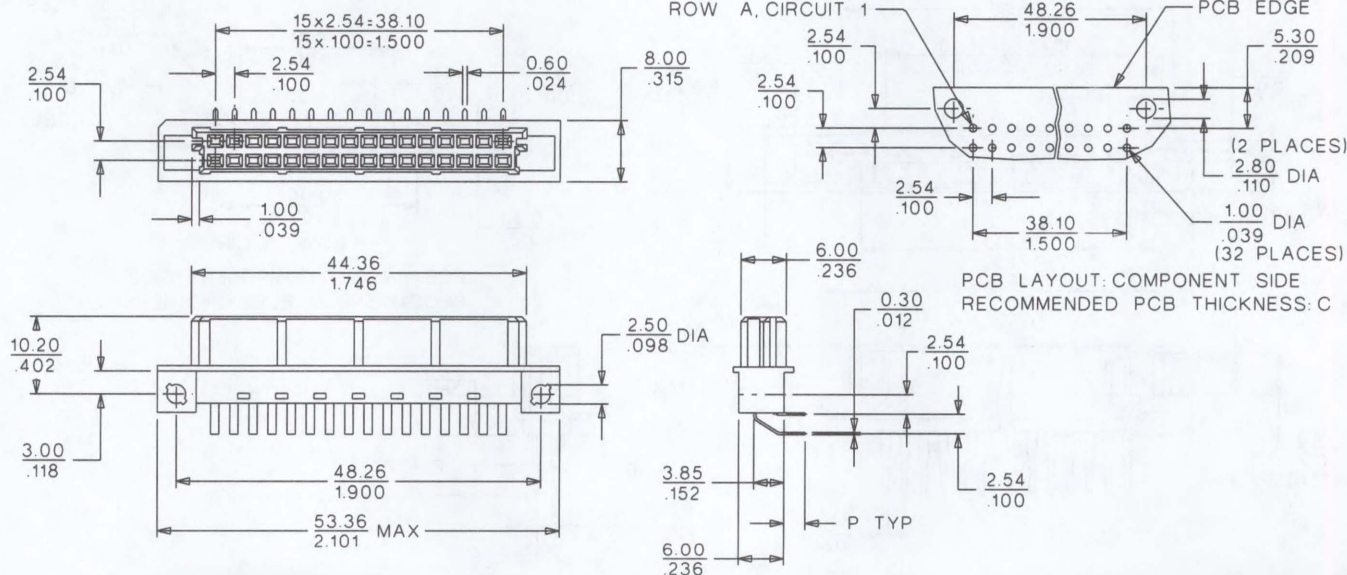
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85050**

**Female**  
**Style Q/2**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|------|-------------------------|-------------|
|          | Performance Level* |            |                 |      |                         |             |
|          | 1                  | 2          |                 |      |                         |             |
| 32       | 85050-0098         | 85050-0000 | Full            | a, b | 3.0 (.118)              | Board locks |
|          |                    | 85050-0074 |                 |      |                         |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Press-fit termination
- For 1.6 to 4mm backplanes
- FMLB/LMFB pins (extended/recessed) available

### Reference Information

Packaging: Box

Tooling: Press-in tool 85089-1043

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85040—Straight female style B/2

85050—Right angle female style Q/2

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

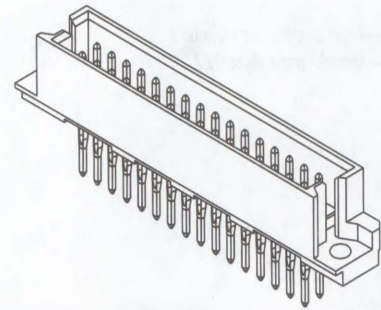
Operating Temperature: -55 to +125°C



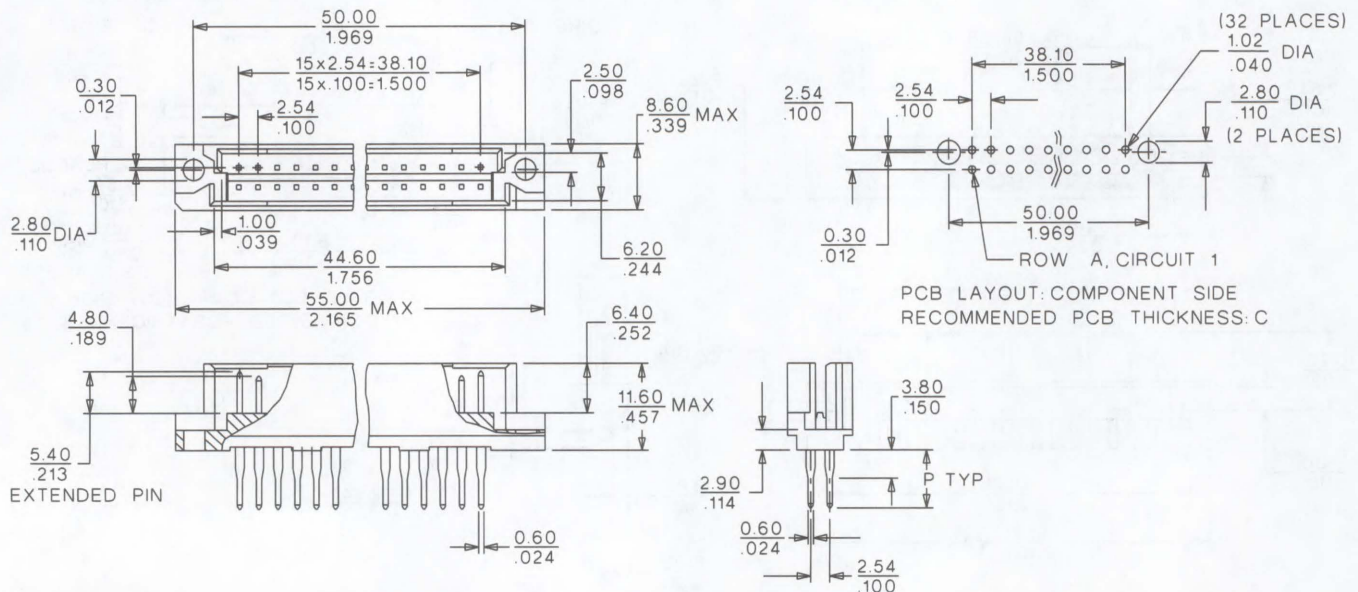
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85011**

**Male**  
**Style Q/2**  
**Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Press-Fit Tail Dimension P |
|----------|--------------------|------------|-----------------|------|----------------------------|
|          | Performance Level* |            |                 |      |                            |
|          | 1                  | 2          |                 |      |                            |
| 32       | 85011-0153         | 85011-0036 | Full            | a, b | 5.8 (.228)                 |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

**molex® 2.54mm (.100") Pitch  
DIN 41612/IEC 603-2  
Connector**

### Features and Benefits

- Dual opposing beam contact
- Board lock option
- Flux-proof option
- Solder tails for 1.6mm (.062") and 2.4mm (.094") PCBs available

### Reference Information

Product Specification: PS-85052-0001

**Packaging:** Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With: 85001—Right angle male style B

## Electrical

Electrical Current: 1.5A  
Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: 0.93N max.

### Physical

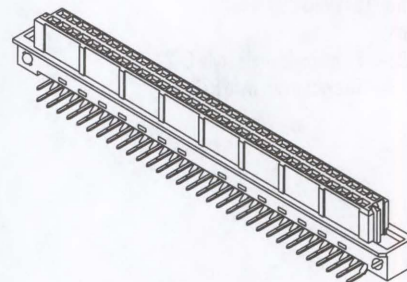
Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

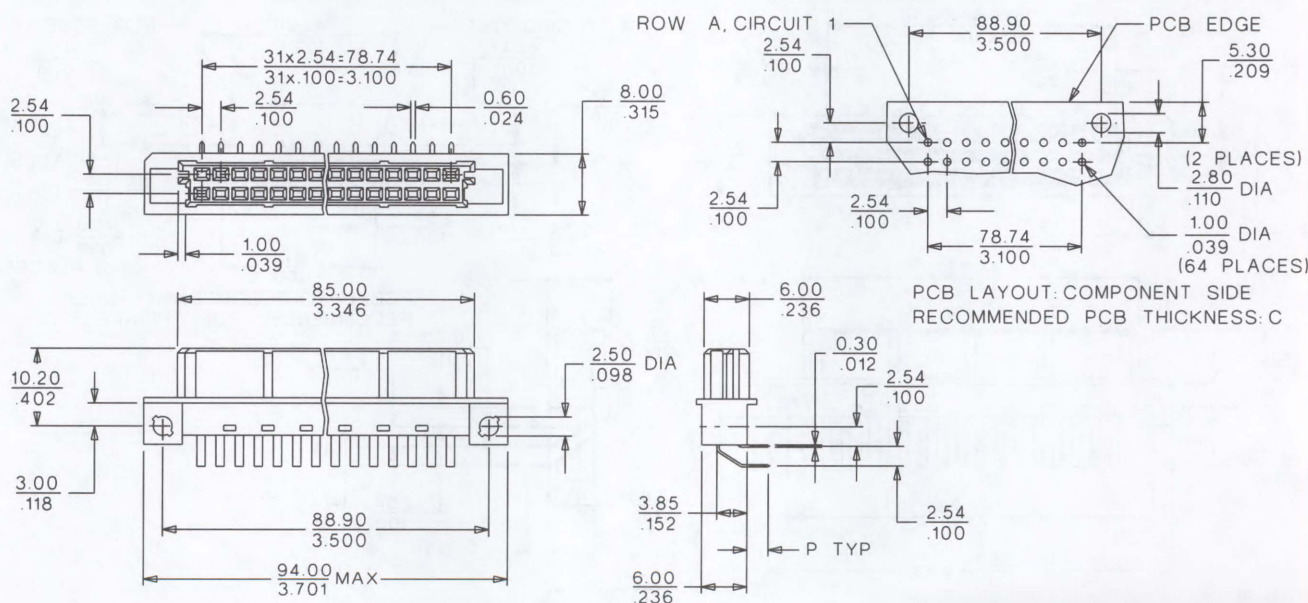
Operating Temperature: -55 to +125°C

85050

## Female Style Q



**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|------|-------------------------|-------------|
|          | Performance Level* |            |                 |      |                         |             |
|          | 1                  | 2          |                 |      |                         |             |
| 64       |                    | 85050-0103 | Full            | a, b | 3.0 (.118)              | Board locks |
|          |                    | 85050-0115 |                 |      |                         |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Dual opposing beam contact
- Board lock option
- Flux-proof option
- Solder tails for 1.6mm (.062") and 2.4mm (.094") PCBs available

### Reference Information

Product Specification: PS-85052-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85003—Right angle male style C/2

85013—Straight male style R/2

### Electrical

Electrical Current: 1.5A

Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: 0.93N max.

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

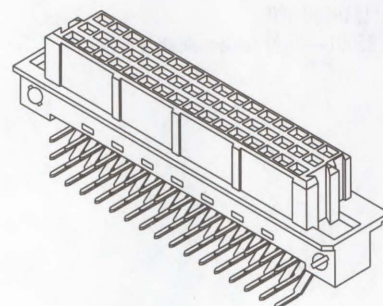
Operating Temperature: -55 to +125°C



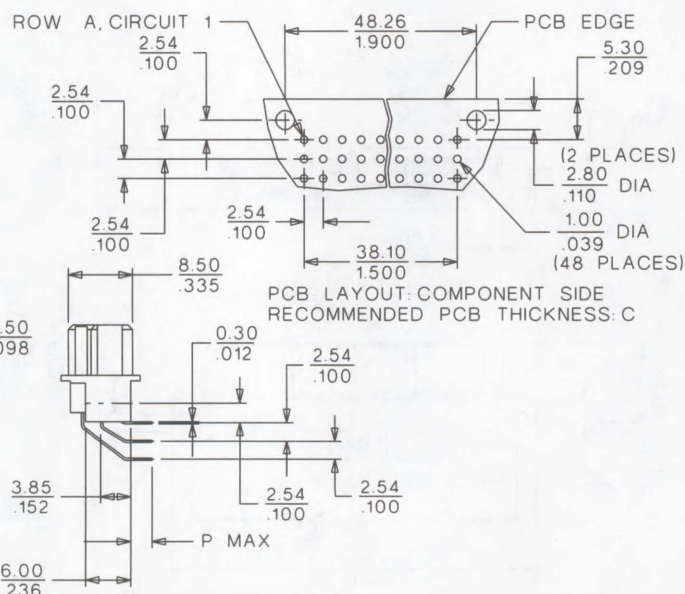
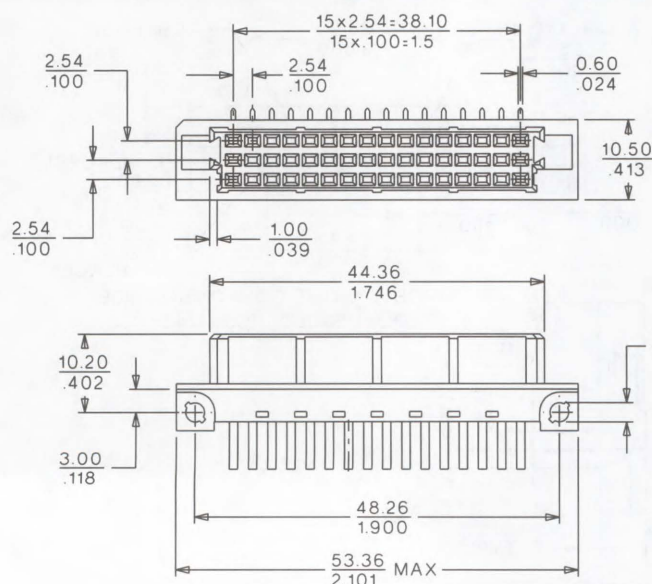
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85052**

**Female**  
**Style R/2**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|---------|-------------------------|-------------|
|          | Performance Level* |            |                 |         |                         |             |
|          | 1                  | 2          |                 |         |                         |             |
| 32       | 85052-0608         | 85052-0622 | Full            | a, c    | 3.0 (.118)              | Board locks |
|          |                    | 85052-0842 |                 |         |                         |             |
| 48       | 85052-0593         | 85052-0165 | Full            | a, b, c | 3.0 (.118)              | Board locks |
|          |                    | 85052-0830 |                 |         |                         |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles, 4 day industrial environment (S02)

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- FMLB/LMFB pins (extended/recessed)
- Board lock option
- Flux-proof option
- Solder tails for 1.6mm (.062") and 2.4mm (.094") PCBs

### Reference Information

Product Specification: PS-85013-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85042—Straight female style C/2

85052—Right angle female style R/2

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

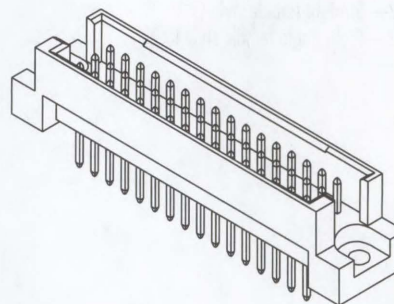
Operating Temperature: -55 to +125°C



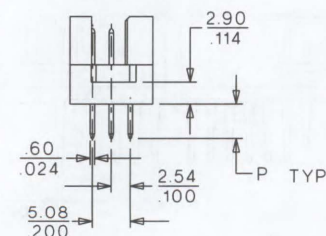
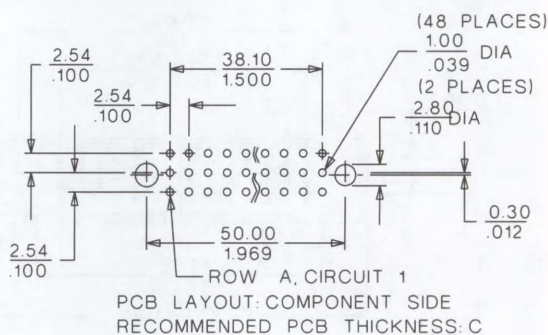
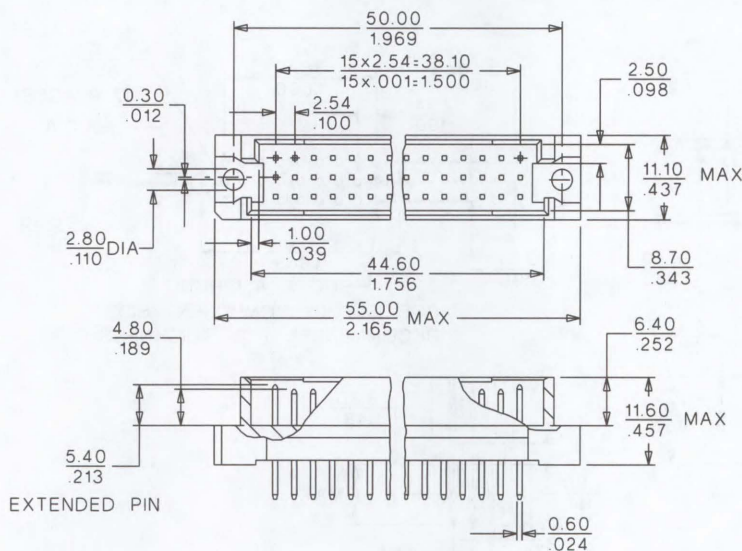
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85013**

**Male**  
**Style R/2**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|---------|-------------------------|-------------|
|          | Performance Level* |            |                 |         |                         |             |
|          | 1                  | 2          |                 |         |                         |             |
| 32       | 85013-2103         | 85013-2000 | Full            | a, c    | 2.9 (.114)              |             |
|          |                    | 85013-0050 |                 |         | 4.5 (.177)              |             |
|          |                    | 85013-2024 |                 |         | 13.3 (.523)             |             |
| 48       | 85013-2127         | 85013-1029 | Full            | a, b, c | 2.9 (.114)              | Board locks |
|          |                    | 85013-2012 |                 |         |                         |             |
|          | 85013-1768         | 85013-0074 |                 |         | 4.5 (.177)              |             |
|          |                    | 85013-2036 |                 |         | 13.3 (.523)             |             |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Press-fit termination
- For 1.6 to 4mm backplanes
- FMLB/LMFB pins (extended/recessed)

### Reference Information

Packaging: Tray

Tooling: Press-in tool 85089-1055

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85042—Straight female style C/2

85052—Right angle female style R/2

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Bronze

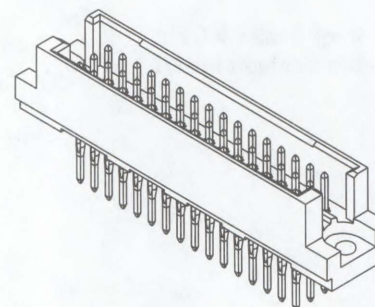
Operating Temperature: -55 to +125°C



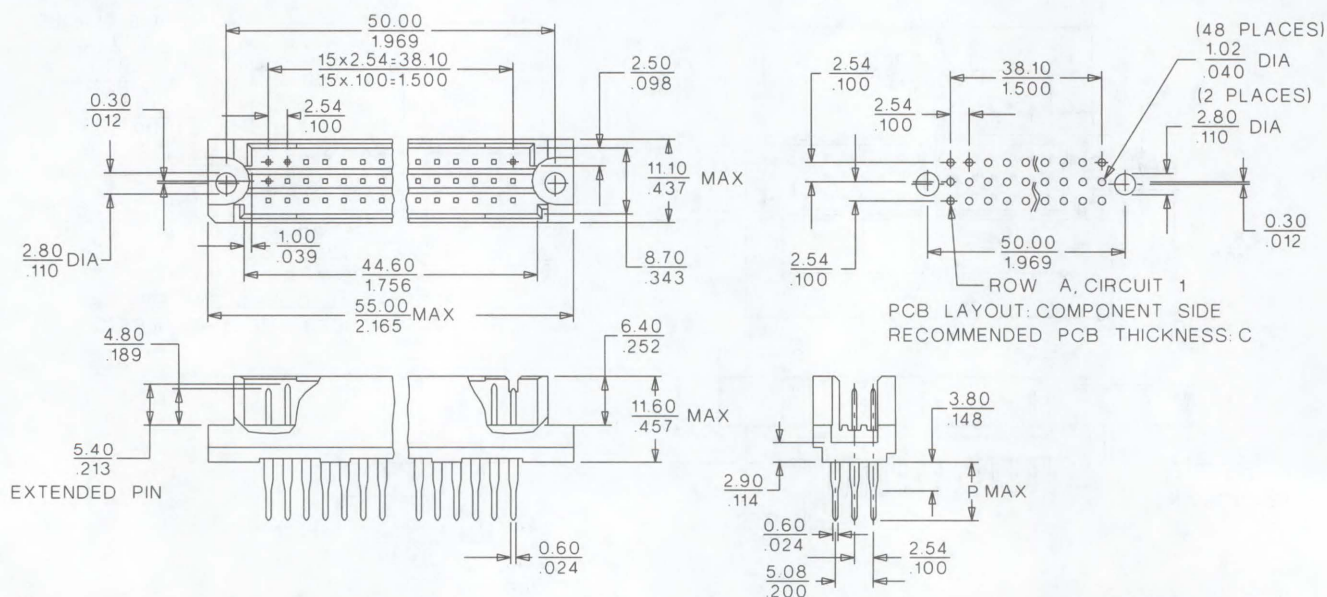
## 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

**85013**

**Male  
Style R/2  
Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            |            | Contact Loading | Rows    | Press-Fit Tail Dimension P |
|----------|--------------------|------------|------------|-----------------|---------|----------------------------|
|          | Performance Level* |            |            |                 |         |                            |
|          | 1                  | 2          | 2+2        |                 |         |                            |
| 32       | 85013-1110         | 85013-0062 |            | Full            | a, c    | 5.8 (.228)                 |
| 48       | 85013-0385         | 85013-0098 |            | Full            | a, b, c | 5.8 (.228)                 |
|          |                    | 85013-0086 |            |                 |         | 13.2 (.520)                |
|          |                    |            | 85013-2062 |                 |         |                            |

For other versions contact Molex.

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

2+2: Performance level 2 on mating pin and tail

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Dual opposing beam contact
- Board lock option
- Flux proof option
- Coding option
- Solder tails for 1.6mm (.062") and 2.4mm (.094") PCBs available

### Reference Information

Product Specification: PS-85052-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85003—Right angle male style C

85013—Straight male style R

### Electrical

Electrical Current: 1.5A

Contact Resistance: 20mΩ max.

### Mechanical

Mating Force: .93N max.

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

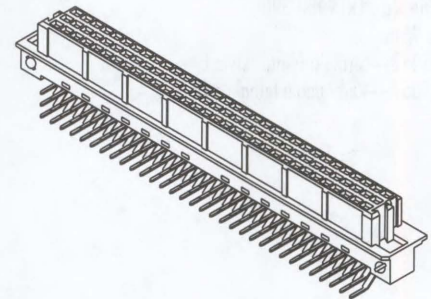
Operating Temperature: -55 to +125°C



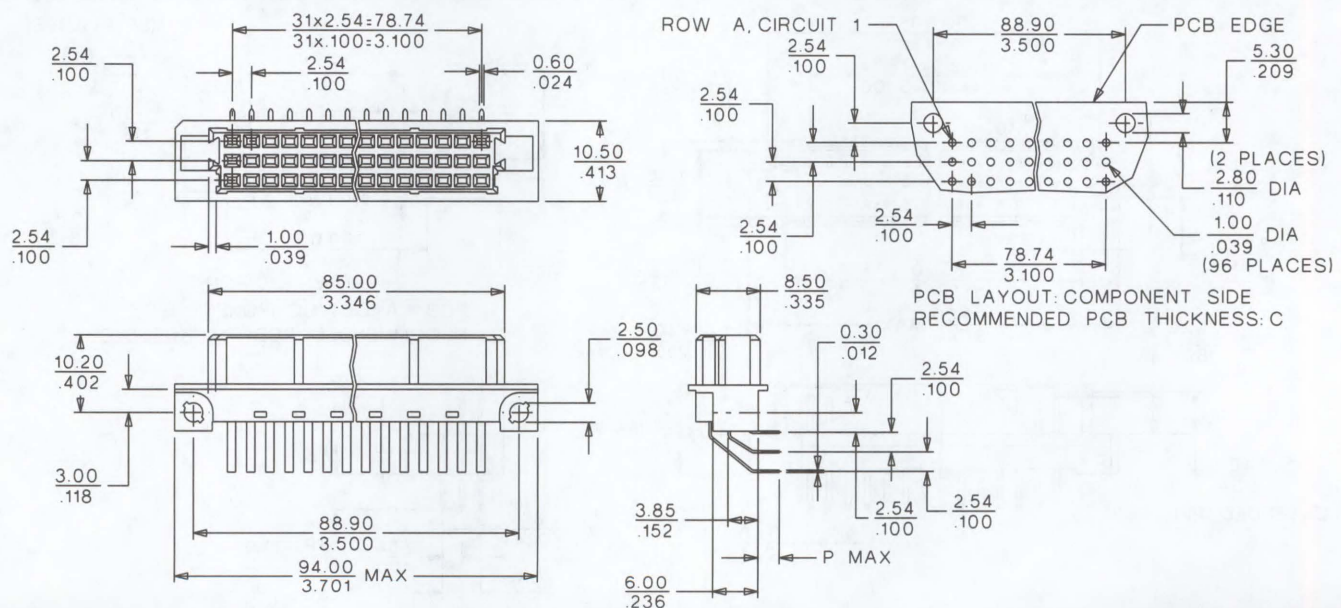
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Connector**

**85052**

**Female**  
**Style R**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)   |
|----------|--------------------|------------|-----------------|---------|-------------------------|-------------|
|          | Performance Level* |            |                 |         |                         |             |
|          | 1                  | 2          |                 |         |                         |             |
| 32       | 85052-0696         | 85052-0206 | Even only       | a, c    | 3.0 (.118)              |             |
|          |                    | 85052-0141 |                 |         |                         | Coding      |
|          |                    | 85052-0658 |                 |         |                         | Board locks |
| 64       | 85052-0189         | 85052-0000 | Full            | a, c    | 3.0 (.118)              |             |
|          |                    | 85052-0012 |                 |         |                         | Coding      |
|          | 85052-0385         | 85052-0024 |                 |         |                         | Flux-proof  |
|          | 85052-0713         | 85052-0103 |                 |         | Board locks             |             |
|          | 85052-0529         | 85052-0139 |                 |         | 3.4 (.133)              |             |
| 96       | 85052-0191         | 85052-0036 | Full            | a, b, c | 3.0 (.118)              |             |
|          | 85052-0282         | 85052-0048 |                 |         |                         | Coding      |
|          | 85052-0725         | 85052-0311 |                 |         |                         | Board locks |
|          | 85052-0397         | 85052-0543 |                 |         | Flux-proof              |             |
|          |                    | 85052-0050 |                 |         | 3.4 (.133)              |             |
|          |                    | 85052-0074 |                 |         |                         | Flux-proof  |

For other contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- FMLB/LMFB pins (extended/recessed) available
- Board lock option
- Flux-proof option
- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs

### Reference Information

Product Specification: PS 85013-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85042—Straight female style C

85052—Right angle female style R

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Brass

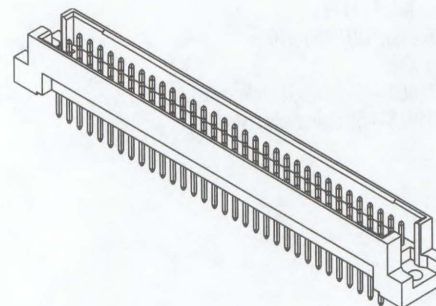
Operating Temperature: -55 to +125°C



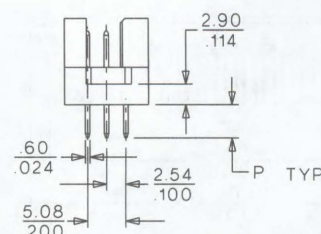
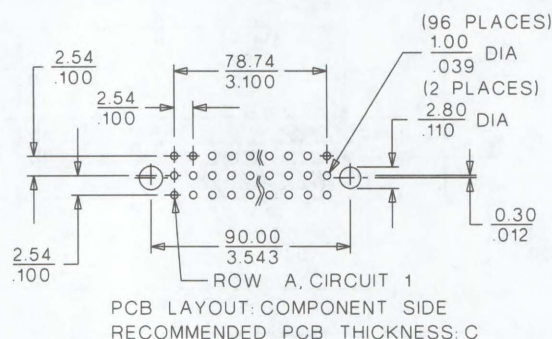
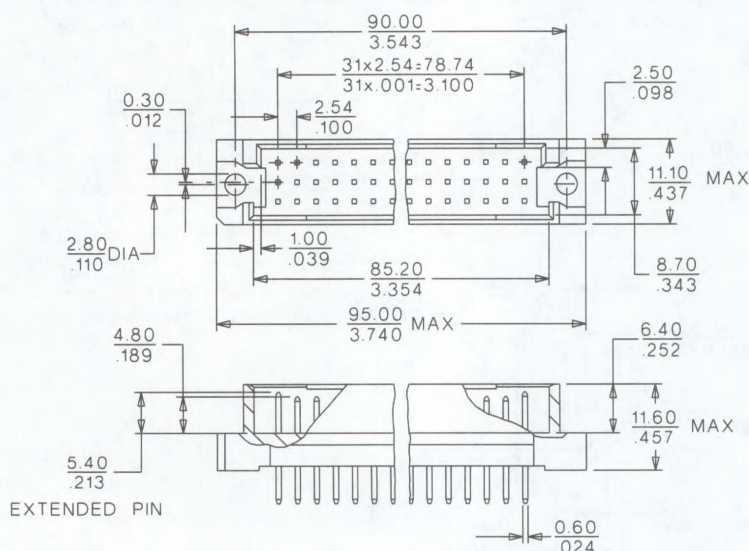
## 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

**85013**

**Male  
Style R**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows | Solder Tail Dimension P | Option(s)                  |
|----------|--------------------|------------|-----------------|------|-------------------------|----------------------------|
|          | Performance Level* |            |                 |      |                         |                            |
|          | 1                  | 2          |                 |      |                         |                            |
| 32       |                    | 85013-3160 | Even only       | a, c | 4.5 (.177)              |                            |
|          |                    | 85013-0361 |                 |      | 13.3 (.523)             |                            |
| 64       |                    | 85013-1938 | Full            | a, c | 2.9 (.114)              |                            |
|          |                    | 85013-2244 |                 |      |                         | Board locks                |
|          | 85013-1641         | 85013-0012 |                 |      | 4.5 (.177)              | FMLB-4 pins: 1, 32<br>a, c |
|          |                    | 85013-1914 |                 |      |                         | Board locks                |
|          |                    | 85013-2232 |                 |      |                         |                            |
|          |                    | 85013-0402 |                 |      | 13.3 (.523)             |                            |
|          |                    | 85013-1677 |                 |      |                         |                            |

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)                  |
|----------|--------------------|------------|-----------------|---------|-------------------------|----------------------------|
|          | Performance Level* |            |                 |         |                         |                            |
|          | 1                  | 2          |                 |         |                         |                            |
| 96       | 85013-2385         | 85013-0048 | Full            | a, b, c | 2.9 (.114)              | Board locks                |
|          |                    | 85013-3122 |                 |         | 4.5 (.177)              | FMLB-12 pins: 1-30-32 a, c |
|          | 85013-0438         | 85013-0036 |                 |         |                         | Flux-proof                 |
|          |                    | 85013-1108 |                 |         |                         |                            |
|          |                    | 85013-1512 |                 |         |                         |                            |
|          | 85013-0414         | 85013-0024 |                 |         | 13.3 (.523)             |                            |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Press-fit termination
- For 1.6 to 4mm backplanes
- FMLB/LMFB pins (extended/recessed) available
- Coding option

### Reference Information

Packaging: Tray  
 Tooling: Press-in tool 85089-1079  
 UL File No.: E29179  
 CSA File No.: LR19980-390  
 Mates With:  
 85042—Straight female style C  
 85052—Right angle female style R

### Electrical

Current: 1.5A

### Physical

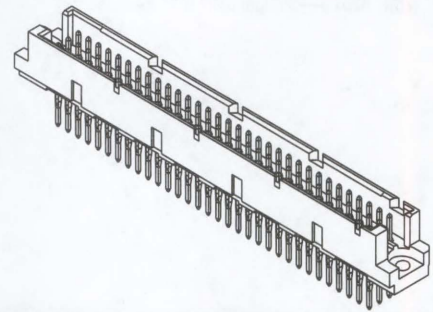
Housing: Glass-filled polyester, UL 94V-0  
 Contact: Bronze  
 Operating Temperature: -55 to +125°C



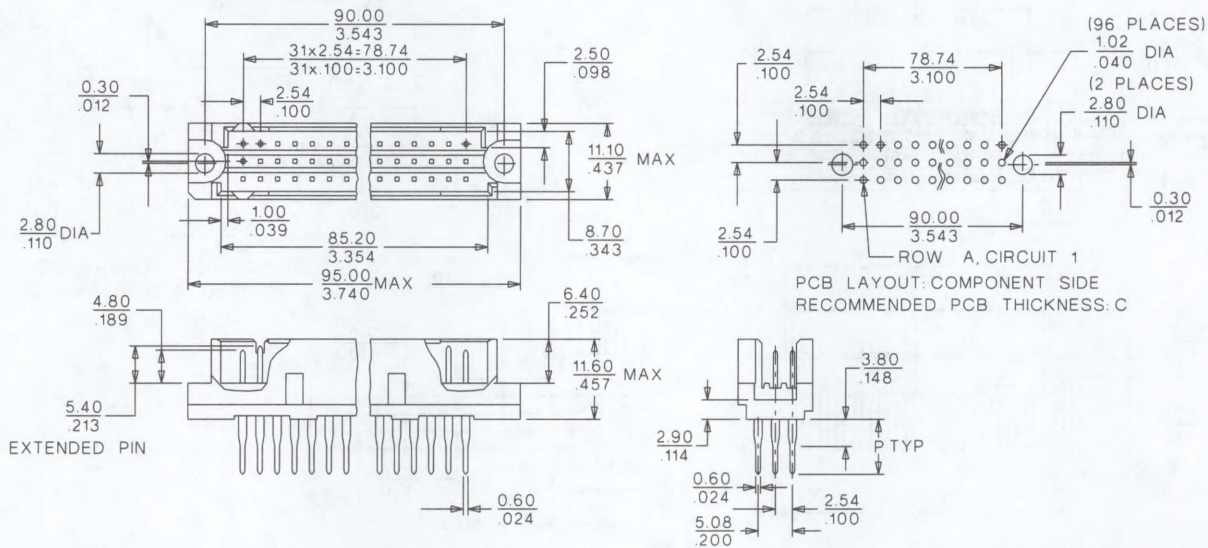
## 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

**85013**

**Male  
Style R  
Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            |            | Contact Loading | Rows    | Press-Fit Tail Dimension P | Option(s)   |                           |
|----------|--------------------|------------|------------|-----------------|---------|----------------------------|-------------|---------------------------|
|          | Performance Level* |            |            |                 |         |                            |             |                           |
|          | 1                  | 2          | 2+2        |                 |         |                            |             |                           |
| 64       | 85013-0476         | 85013-0103 |            | Full            | a, c    | 5.8 (.228)                 |             |                           |
|          | 85013-2438         | 85013-0115 |            |                 |         |                            | Coding      |                           |
|          | 85013-2452         | 85013-2268 | 85013-2282 |                 |         | 13.2 (.520)                |             |                           |
|          | 85013-2476         | 85013-2270 | 85013-2309 |                 |         |                            | Coding      |                           |
| 96       | 85013-0218         | 85013-0189 |            | Full            | a, b, c | 5.8 (.228)                 |             |                           |
|          |                    | 85013-1225 |            |                 |         |                            |             | FMLB-6 pins: 1,32 a, b, c |
|          | 85013-2440         | 85013-2256 |            |                 |         |                            |             | Coding                    |
|          | 85013-2464         | 85013-0165 | 85013-2294 |                 |         |                            | 13.2 (.520) |                           |
|          |                    | 85013-0177 | 85013-2311 |                 |         |                            |             | Coding                    |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

2+2: Performance level 2 on mating pin and tail





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- 4 rows of 32 contacts
- Press-fit termination
- For 1.6 to 4mm backplanes
- FMLB/LMFB pins (extended/recessed) available

### Reference Information

Packaging: Box  
Tooling: Press-in tool 85089-1081  
UL File No.: E29179  
CSA File No.: LR19980-390  
Mates With: 85054—Right angle female style R+

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

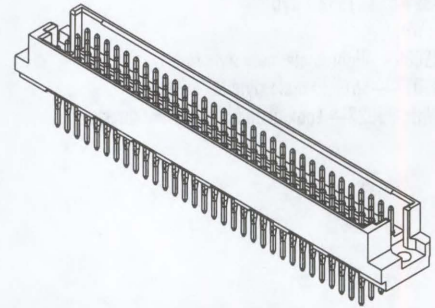
Contact: Bronze

Operating Temperature: -55 to +125°C

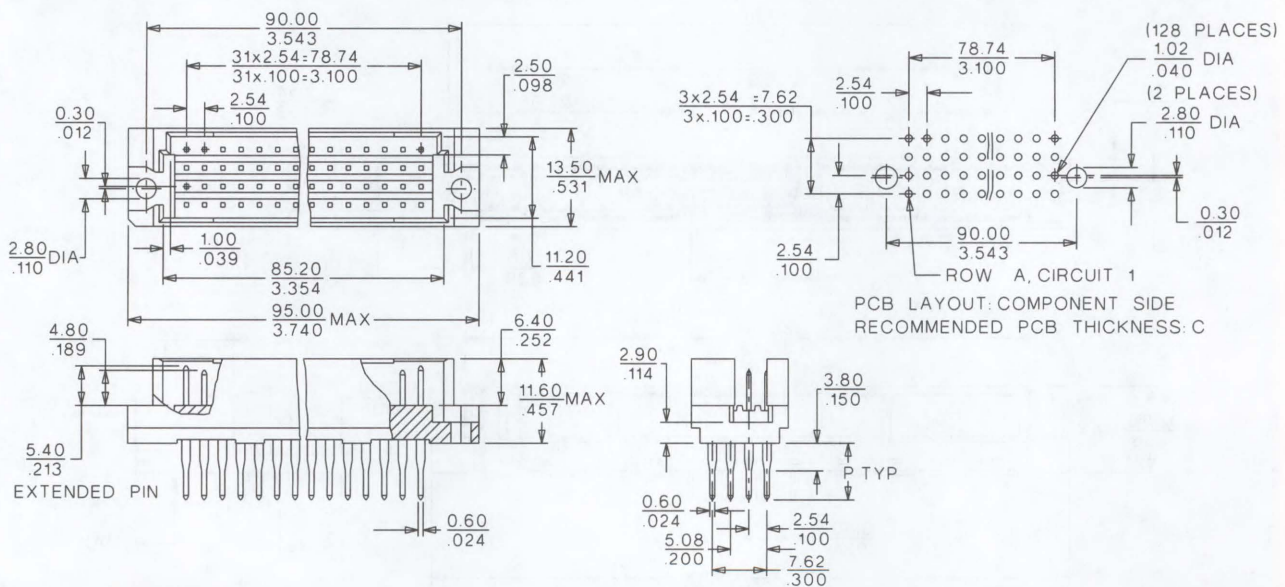
# molex® 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Connector

## 85015

## Male Style R+ (4 Row) Press-Fit



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            |            | Contact Loading | Rows       | Press-Fit Tail Dimension P | Option(s)                     |
|----------|--------------------|------------|------------|-----------------|------------|----------------------------|-------------------------------|
|          | Performance Level* |            |            |                 |            |                            |                               |
|          | 1                  | 2          | 2+2        |                 |            |                            |                               |
| 128      | 85015-0165         | 85015-0036 |            | Full            | a, b, c, d | 5.8 (.228)                 | FMLB-8 pins: 1, 32 a, b, c, d |
|          |                    | 85015-0141 |            |                 |            | 13.2 (.520)                |                               |
|          |                    | 85015-0024 | 85015-0218 |                 |            |                            |                               |
|          |                    |            |            |                 |            |                            |                               |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)

2+2: Performance level 2 on mating pin and tail



# FEATURES AND SPECIFICATIONS

## Features and Benefits

- Cavities for coaxial and high power inserts
- Dual opposing beam contact
- Preloaded solder power contacts available
- Flux-proof option
- Solder tails for 1.6mm (.062") and 3.2mm (.125") PCBs

## Reference Information

Product Specification: PS-85042-0001

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85009—Right angle male style M

85017—Straight male style M "inverse"

Use With: 85022—Coaxial and high current inserts

## Electrical

Current: 1.5A

Contact Resistance: 20mΩ max.

## Mechanical

Mating Force: 0.93N max.

## Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

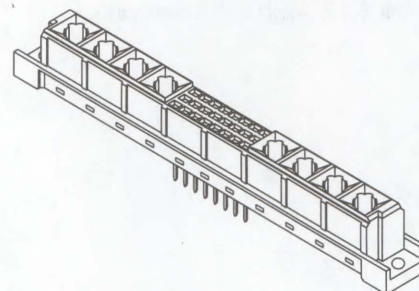
Operating Temperature: -55 to +125°C



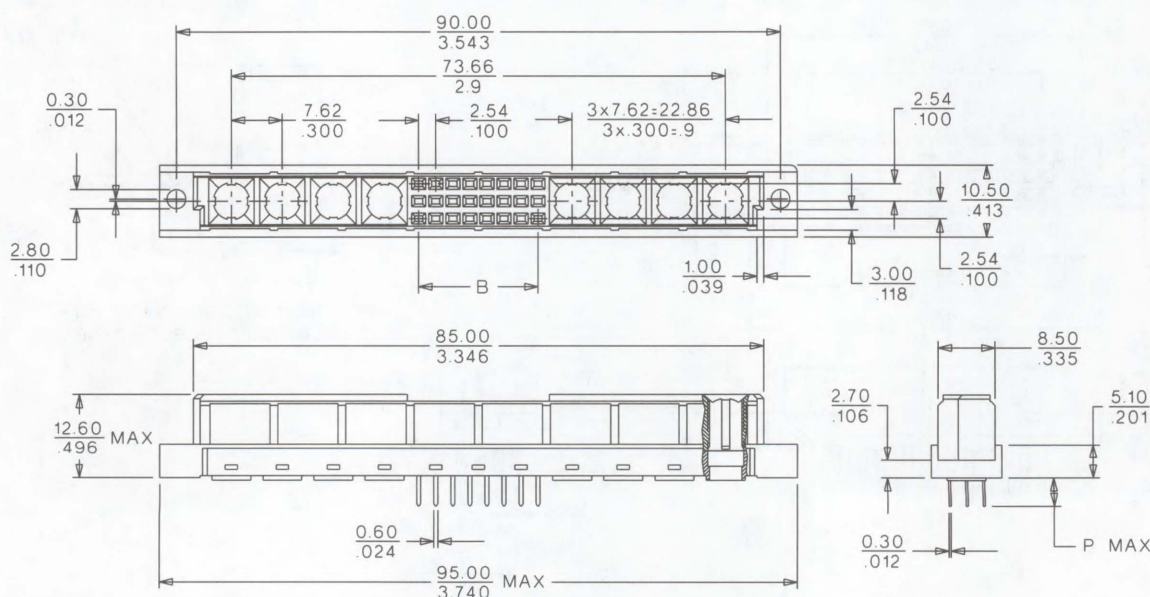
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Mixed Layout Connector**

**85048**

**Female**  
**Style M**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)  |
|----------|--------------------|------------|-----------------|---------|-------------------------|------------|
|          | Performance Level* |            |                 |         |                         |            |
|          | 1                  | 2          |                 |         |                         |            |
| 24+8     | 85048-1316         | 85048-0969 | Full            | a, b, c | 2.9 (.114)              |            |
|          | 85048-1275         | 85048-0024 |                 |         | 4.5 (.177)              |            |
| 42+6     | 85048-1421         | 85048-0878 | Full            | a, b, c | 2.9 (.114)              |            |
|          | 85048-0660         | 85048-0062 |                 |         | 4.5 (.177)              |            |
|          |                    | 85048-0074 |                 |         |                         | Flux-proof |
| 60+4     | 85048-0555         | 85048-1122 | Full            | a, b, c | 2.9 (.114)              |            |
|          | 85048-0361         | 85048-0115 |                 |         | 4.5 (.177)              |            |
|          |                    | 85048-0139 |                 |         |                         | Flux-proof |
| 78+2     | 85048-0567         | 85048-0866 | Full            | a, b, c | 2.9 (.114)              |            |
|          | 85048-0737         | 85048-0153 |                 |         | 4.5 (.177)              |            |
|          |                    | 85048-0323 |                 |         |                         | Flux-proof |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles. 10 day industrial environment (S02)

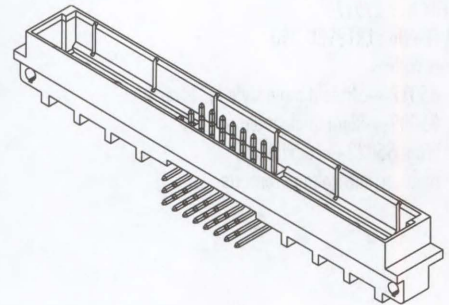
2: >400 mating cycles. 4 day industrial environment (S02)



**2.54mm (.100") Pitch  
DIN 41612/IEC 603-2  
Mixed Layout Connector**

85009

## Male Style M



### Features and Benefits

- Cavities for coaxial and high current contacts
- FMLB/FMLBF pins (extended/recessed) available
- Board lock option
- Flux proof option
- Solder tails for 1.6mm (.062") PCBs  
(for 2.4mm (.094") PCBs on request)

## Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

**Contact: Brass**

Operating Temperature: -55 to +125°C

### Reference Information

Product Specification: PS-85003-0001

**Packaging:** Tray

UL File No.: E29179

CSA File No.: LR19980-390

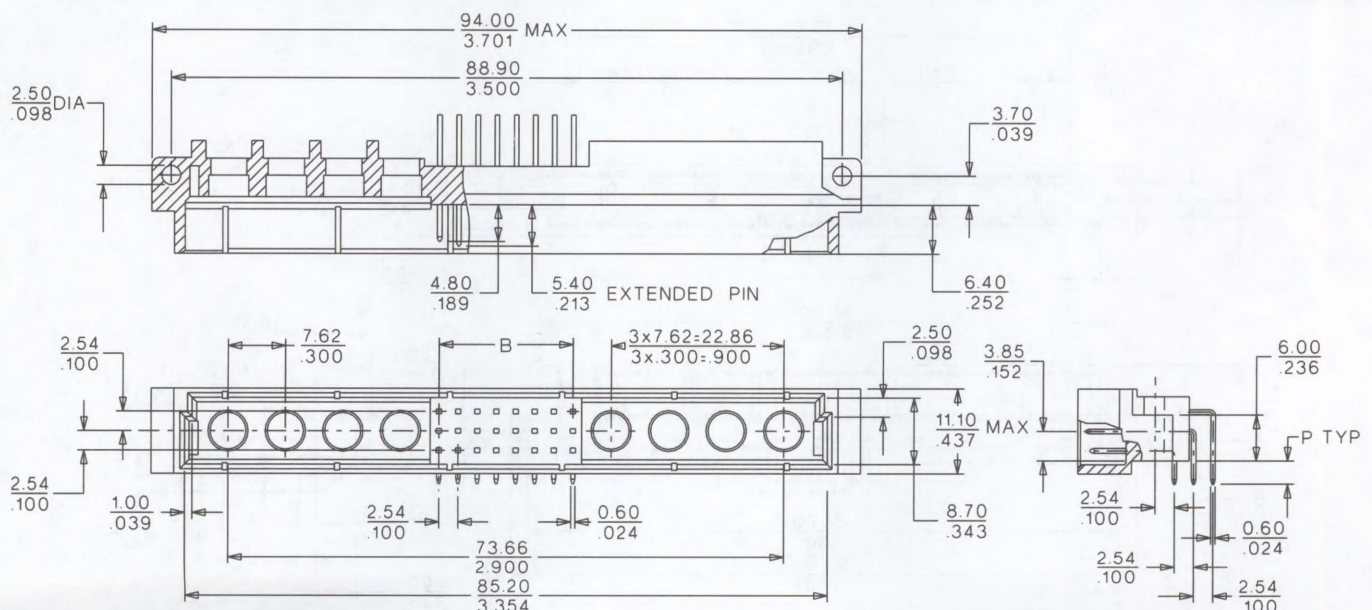
**Mates With:**

85048—Straight female style M

85056—Right angle female style M "inverse"

Use With: 85023—Special power and coaxial terminals

**CATALOG DRAWING (FOR REFERENCE ONLY)**



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.          |            | Contact Loading | Rows    | Solder Tail Dimension P | Option(s)                         |
|----------|--------------------|------------|-----------------|---------|-------------------------|-----------------------------------|
|          | Performance Level* |            |                 |         |                         |                                   |
|          | 1                  | 2          |                 |         |                         |                                   |
| 24+8     | 85009-0555         | 85009-0012 | Full            | a, b, c | 3.0 (.118)              |                                   |
|          |                    | 85009-0684 |                 |         |                         | FMLB-2 pins: first, last row a    |
| 42+6     | 85009-0854         | 85009-0048 | Full            | a, b, c | 3.0 (.118)              |                                   |
|          |                    | 85009-0050 |                 |         |                         | Flux-proof                        |
|          |                    | 85009-0373 |                 |         |                         | FMLB-2 pins: first, last row a    |
|          |                    | 85009-0737 |                 |         |                         | FMLB-4 pins: first, last row a, c |
|          |                    |            |                 |         |                         |                                   |
| 60+4     | 85009-0335         | 85009-0074 | Full            | a, b, c | 3.0 (.118)              |                                   |
|          |                    | 85009-0452 |                 |         |                         | FMLB-2 pins: first, last row a    |
| 78+2     | 85009-0359         | 85009-0115 | Full            | a, b, c | 3.0 (.118)              |                                   |
|          |                    | 85009-0725 |                 |         |                         | FMLB-4 pins: first, last row a, c |
|          |                    | 85009-0971 |                 |         |                         | Flux-proof                        |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles. 4 day industrial environment (S02)





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Press-fit termination
- For 1.6 to 4mm backplanes
- Cavities for coaxial and high current contacts
- FMLB/LMFB pins (extended/recessed) available
- Version for press-fit power contacts available

### Reference Information

Packaging: Tray

Tooling: Press-in tool 85089-1079

UL File No.: E29179

CSA File No.: LR19980-390

Mates With:

85048—Straight female style M

85056—Right angle female style M "inverse"

Use With: 85023—Special power and coaxial terminals

### Electrical

Current: 1.5A

### Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Bronze

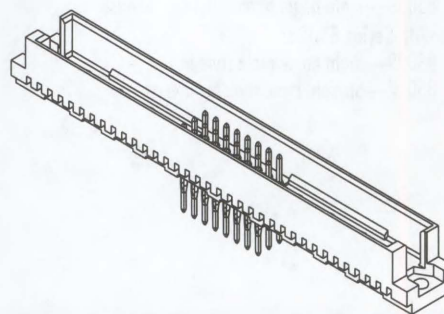
Operating Temperature: -55 to +125°C



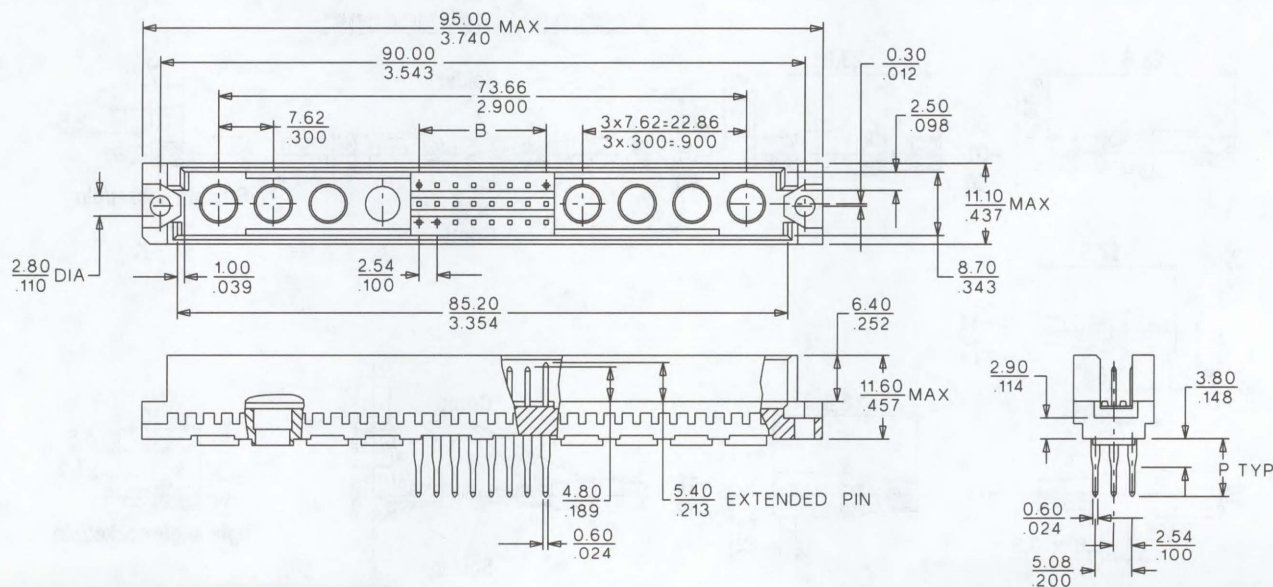
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Mixed Layout Connector**

**85017**

**Male**  
**Style M, Inverse**  
**Press-Fit**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  |            | Contact Loading | Rows    | Press-Fit Tail Dimension P |
|----------|------------|------------|-----------------|---------|----------------------------|
|          | 1          | 2          |                 |         |                            |
| 24+8     | 85017-0220 | 85017-0218 | Full            | a, b, c | 5.8 (.228)                 |
|          |            | 85017-0218 |                 |         | 13.2 (.520)                |
| 42+6     | 85017-0359 | 85017-0074 | Full            | a, b, c | 5.8 (.228)                 |
|          |            | 85017-0062 |                 |         | 13.2 (.520)                |
| 60+4     | 85017-0115 | 85017-0115 | Full            | a, b, c | 5.8 (.228)                 |
|          |            | 85017-0103 |                 |         | 13.2 (.520)                |
| 78+2     | 85017-0361 | 85017-0153 | Full            | a, b, c | 5.8 (.228)                 |
|          |            | 85017-0141 |                 |         | 13.2 (.520)                |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles, 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Contacts per DIN 41626
- Cable and PCB termination
- 50 and 75Ω applications
- Contacts snap into connector housing

### Reference Information

Product Specification: DIN 41626

Packaging: Bag

Tooling: Contact removal tool 85089-0323

Use With Series 85022:

85048—Straight female style M

85056—Right angle female style M "inverse"

Use With Series 85023:

85009—Right angle male style M

85017—Straight male style M "inverse"

### Electrical

Impedance: 50 and 75Ω

Frequency Range: 0 to 2 GHz

Insulation Resistance: 10<sup>6</sup>Ω

### Physical

Contact: Brass

Spring: Beryllium Copper

Insulators: PTFE

Fixing Clip: Beryllium Copper

Crimp Barrel: Copper

Plating: Gold

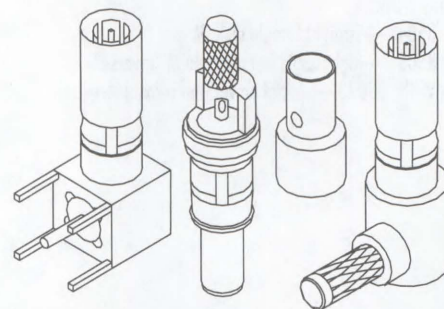
Operating Temperature: -55 to +125°C



**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**Coaxial Contacts**

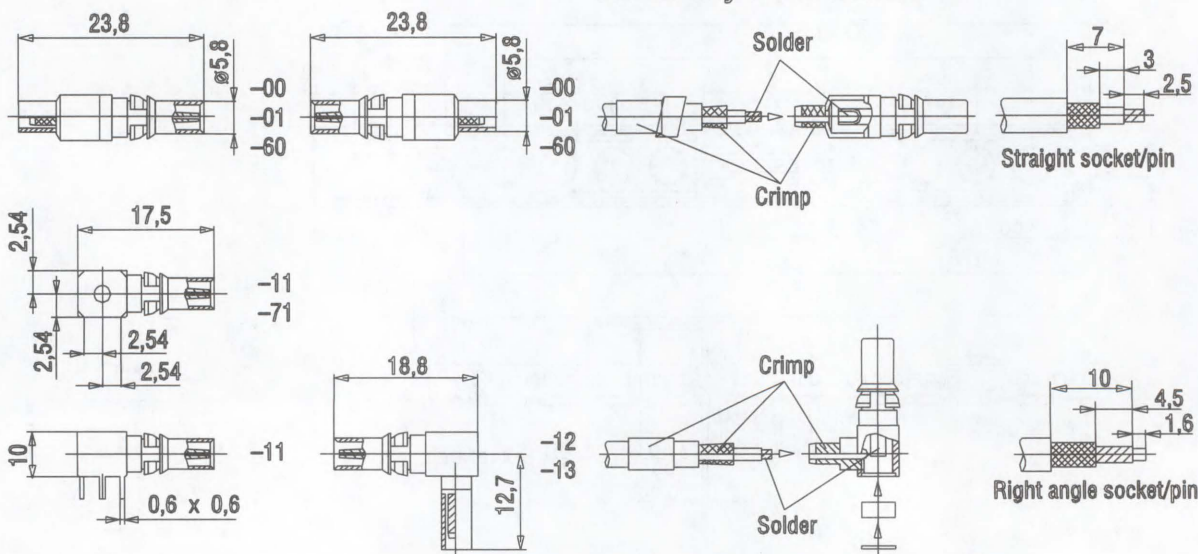
**85022/85023**

**Special Contacts**  
**Style M and M Inverse**  
**Mixed Layout Connector**



## CATALOG DRAWING (FOR REFERENCE ONLY)

### Assembly Instructions:



## ORDERING INFORMATION AND DIMENSIONS

| Impedance | Order No.          |            | Code       | Termination                             | Contact | For Coax Cable Types | Diameter   |            |
|-----------|--------------------|------------|------------|-----------------------------------------|---------|----------------------|------------|------------|
|           | Performance Level* |            |            |                                         |         |                      |            |            |
|           | 1                  | 2          |            |                                         |         |                      |            |            |
| 50Ω       | 85022-0488         | 85022-0373 | 00         | Straight cable<br>center wire solder    | Female  | RG 178 B/U           | 2.0 (.079) |            |
|           |                    | 85022-0490 | 85022-0385 |                                         |         | 01                   | RG 196 A/U | 2.8 (.110) |
|           |                    |            |            |                                         |         |                      | RG 188 A/U | 2.6 (.102) |
|           |                    |            |            |                                         |         |                      | RG 174/U   | 2.6 (.102) |
|           | 85023-0402         | 85023-0335 | 00         |                                         | Male    | RG 316/U             | 2.6 (.102) |            |
|           |                    |            |            |                                         |         | RG 178 B/U           | 2.0 (.079) |            |
|           |                    |            |            |                                         |         | RG 196 A/U           | 2.8 (.110) |            |
|           |                    |            |            |                                         |         | RG 188 A/U           | 2.8 (.110) |            |
|           | 85023-0414         | 85023-0347 | 01         | Right angle cable<br>center wire solder | Female  | RG 174/U             | 2.6 (.102) |            |
|           |                    |            |            |                                         |         | RG 316/U             | 2.8 (.110) |            |
|           |                    |            |            |                                         |         | RG 188 A/U           | 2.8 (.110) |            |
|           |                    |            |            |                                         |         | RG 174/U             | 2.6 (.102) |            |

| Impedance  | Order No.          |            | Code | Termination                          | Contact    | For Coax Cable Types | Diameter   |            |
|------------|--------------------|------------|------|--------------------------------------|------------|----------------------|------------|------------|
|            | Performance Level* |            |      |                                      |            |                      |            |            |
|            | 1                  | 2          |      |                                      |            |                      |            |            |
| 50Ω        | 85022-0505         | 85022-0397 | 11   | Right angle PCB solder               | Female     |                      |            |            |
|            | 85023-0426         | 85023-0359 |      |                                      | Male       |                      |            |            |
| 75Ω        | 85022-0335         | 85022-0311 | 00   | Straight cable center wire solder    | Female     | RG 179 B/U           | 2.6 (.102) |            |
|            |                    |            |      |                                      |            | RG 187 A/U           | 2.8 (.110) |            |
|            |                    |            |      |                                      | RG 179 B/U | 2.6 (.102)           |            |            |
|            | 85023-0309         | 85023-0282 | 60   | Male                                 | RG 187 A/U | 2.8 (.110)           |            |            |
|            |                    |            |      |                                      | RG 179 B/U | 2.6 (.102)           |            |            |
|            | 85022-0658         | 85022-0608 | 13   | Right angle cable center wire solder | Female     | RG 187 A/U           | 2.8 (.110) |            |
|            |                    |            |      |                                      |            |                      | RG 179 B/U | 2.6 (.102) |
|            | 85023-0531         | 85023-0543 |      |                                      | Male       | RG 179 B/U           | 2.6 (.102) |            |
|            |                    |            |      |                                      |            | RG 187 A/U           | 2.8 (.110) |            |
|            | 85022-0347         | 85022-0323 | 01   | Right angle PCB solder               | Female     |                      |            |            |
| 85023-0311 | 85023-0294         | 11         | Male |                                      |            |                      |            |            |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles, 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Per DIN 41626
- Cable and PCB termination
- 10 to 40A current capacity
- Crimp and solder cable terminations
- Contacts snap into connector housing

### Reference Information

Product Specification: DIN 41626

Packaging: Bag

Tooling: Contact removal tool 85089-0323

Use With Series 85022:

85048—Straight female style M

85056—Right angle female style M "inverse"

Use With Series 85023:

85009—Right angle male style M

85017—Straight male style M "inverse"

### Electrical

Current: See Table

### Physical

Pin Contact: Brass

Socket Contact: Bronze and Beryllium Copper

Clip: Beryllium Copper

Plating: Gold

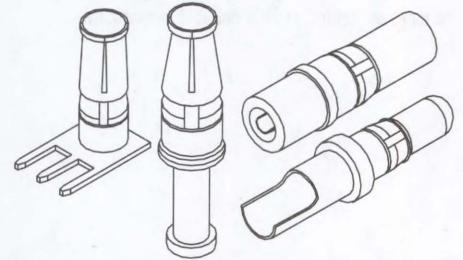
Operating Temperature: -55 to +125°C



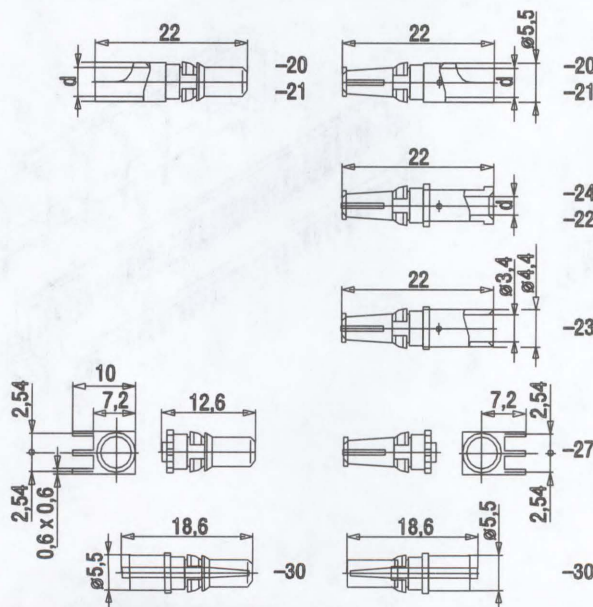
**2.54mm (.100") Pitch**  
**DIN 41612/IEC 603-2**  
**High Current**  
**High Voltage Contacts**

**85022/85023**

**Special Contacts for**  
**Style M and M Inverse**  
**Mixed Layout Connector**



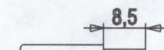
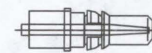
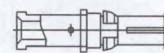
## CATALOG DRAWING (FOR REFERENCE ONLY)



### Assembly Instructions:

High current contacts

High voltage contacts



Solder: L = 8,0

Crimp: L = 9,5

## ORDERING INFORMATION

| HIGH CURRENT CONTACTS |                    |            |      |              |         |          |                           |
|-----------------------|--------------------|------------|------|--------------|---------|----------|---------------------------|
| Style                 | Order No.          |            | Code | Type         | Contact | Current  | Termination               |
|                       | Performance Level* |            |      |              |         |          |                           |
|                       | 1                  | 2          |      |              |         |          |                           |
| Straight              | 85023-0440         | 85023-0373 | 21   | Cable solder | Male    | 30A      | 6mm <sup>2</sup> /10AWG   |
|                       | 85023-0438         | 85023-0361 | 20   |              |         | 40A      | 10mm <sup>2</sup> /8AWG   |
|                       | 85022-0543         | 85022-0438 | 21   |              | Female  | 30A      | 6mm <sup>2</sup> /10AWG   |
|                       | 85022-0531         | 85022-0426 | 20   |              |         | 40A      | 10mm <sup>2</sup> /8AWG   |
|                       | 85022-0567         | 85022-0452 | 24   | Cable crimp  | Female  | 10A      | 2mm <sup>2</sup> /14AWG   |
|                       | 85022-0555         | 85022-0440 | 22   |              |         | 20A      | 2.5mm <sup>2</sup> /12AWG |
|                       | 85022-0581         | 85022-0579 | 23   |              | Male    | 30A      | 6mm <sup>2</sup> /10AWG   |
|                       |                    | 85023-0488 | 09   |              |         | PC board | 22A                       |

| HIGH CURRENT CONTACTS |                    |            |      |                 |           |         |              |
|-----------------------|--------------------|------------|------|-----------------|-----------|---------|--------------|
| Style                 | Order No.          |            | Code | Type            | Contact   | Current | Termination  |
|                       | Performance Level* |            |      |                 |           |         |              |
|                       | 1                  | 2          |      |                 |           |         |              |
| Right angle           | 85023-0256         |            | 27   | PC board solder | Male      | 30A     | 3-pin solder |
|                       | 85023-0232         |            |      |                 | Male-FMLB |         |              |
|                       | 85023-0490         |            | 44   |                 | Male      | 40A     | 4-pin solder |
|                       | 85023-0505         |            |      |                 | Male-FMLB |         |              |
|                       | 85022-0062         |            | 27   |                 | Female    | 30A     | 3-pin solder |
|                       | 85022-0646         |            |      |                 |           | 40A     | 4-pin solder |
| Straight              |                    | 85023-0323 | 30   | Cable solder    | Male      | 3.8kV   | Wire         |
|                       |                    | 85022-0361 |      |                 |           | Female  | 0.75mm²      |

For other versions contact Molex

\* Performance levels based on test conditions per DIN 41612, part 5:

1: >500 mating cycles, 10 day industrial environment (S02)

2: >400 mating cycles, 4 day industrial environment (S02)



## FEATURES AND SPECIFICATIONS

**Features and Benefits**

- Enables power and voltage distribution separately from the DIN connector and thereby does not reduce the number of available signal contacts
- Provides 4 level sequential voltage distribution at 1.27mm intervals in advance of the signal contacts and power supply of up to 6 amps per contact
- Fits in a balcony-style over/next to a Style R DIN 41612 connector. It is compatible with standard card heights and requires no change of existing hardware
- Provides reliable and timely separation of the different levels during mating/unmating
- Has 9 contacts allowing 4 different voltages and 6 amps per contact at 70°C ambient temperature

The 85322 Series Safe Sequential Mating System (SSMS) is a connector system with 4 mating levels for voltage and power distribution to a PCB in accordance with the 19" System per DIN 41494.

The SSMS connector system provides an answer to the power and voltage distribution needs associated with DIN 41612 applications.

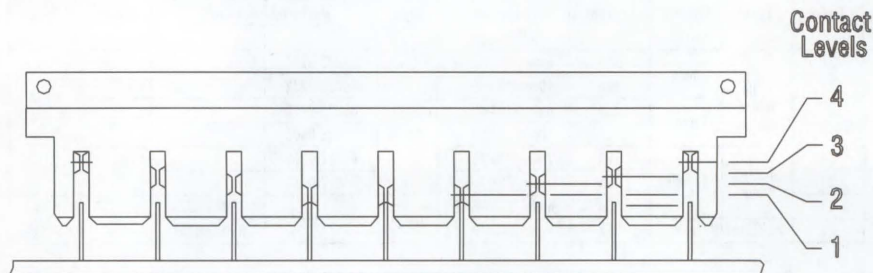
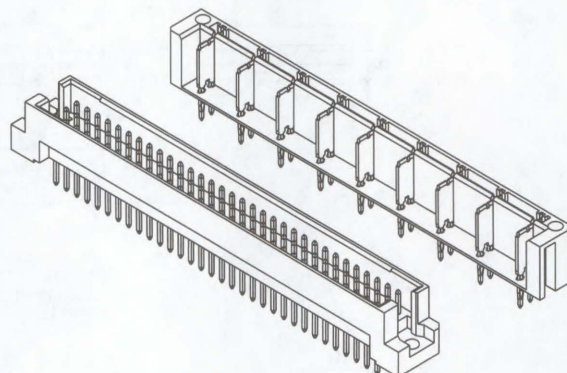
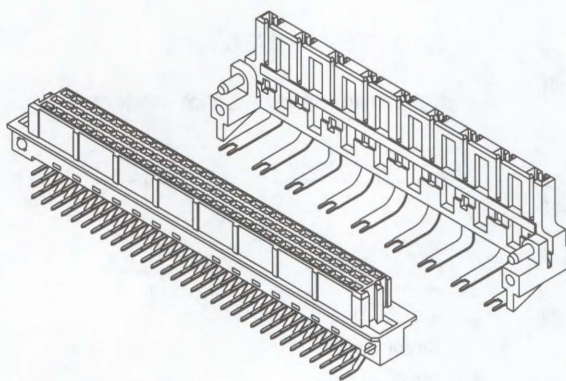
SSMS is an alternative to distributing power to a PCB without the loss of signal contacts. Today the use of extended pins (for early grounding) and mixed layout DIN connectors (signal and power in the same housing) each subtract from the number of usable pins available in a 96 circuit DIN connector.



## 10.16mm (.400") Pitch DIN 41612/IEC 603-2 Safe Sequential Mating System (SSMS) Introduction

### 85322

### Power Connectors For Use With DIN 41612



### Features and Benefits

- ### Reference Information

Mates With: 85322 male (SSMS) power connector

Current: 6.0A

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

**Plating:**

Contact—4 $\mu$ m Silver over Nickel

PC Tail—Tin/Lead

Operating Temperature: -40 to +140°C



85322

### Right Angle, Female

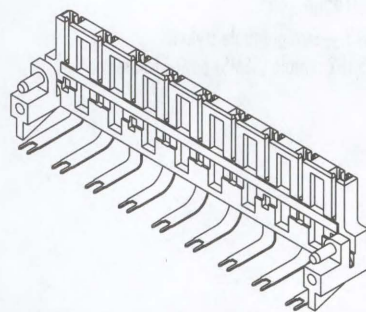


Figure 1: PCB layout dimensions for the component side. The figure includes three views: a top view, a side view, and a cross-sectional view. The top view shows a rectangular board with dimensions 94.50 (3.720) and 88.90 (3.500). It features 8x10.16 (8x.400) pin spacing, with a total width of 81.28 (3.2) for the pins. The side view shows a thickness of 1.95 (0.0768) and a pin height of 10.80 (0.425). The cross-sectional view shows a pin diameter of 2.80 (0.110) and a recommended PCB thickness of 1.6 (0.06).

| Circuits | Order No.  | Contact Loading | Solder Tail Dimension P |
|----------|------------|-----------------|-------------------------|
| 9        | 85322-0505 | Full            | 2.80 (.110)             |



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Press-fit termination to backplane
- Sequential mating in 4 levels in advance of signal contacts
- To be used with male DIN 41612, Style R
- 9 contacts

## Reference Information

Product Specification: PS 85322

Packaging: Box

Tooling: Press-in tool 85089-0490

UL File No.: E29179

CSA File No.: LR19980-390

Use With: 85013—Straight male style R

Mates With: 85322 female (SSMS) power connector

## Electrical

Current: 6.0A

## Physical

Housing: Glass-filled polyester, UL 94V-0

Contact: Copper Alloy

Plating:

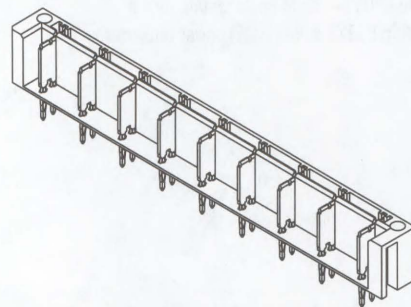
Contact—4 $\mu$ m Silver over Nickel

Press-Fit C-Pin—Tin/Lead

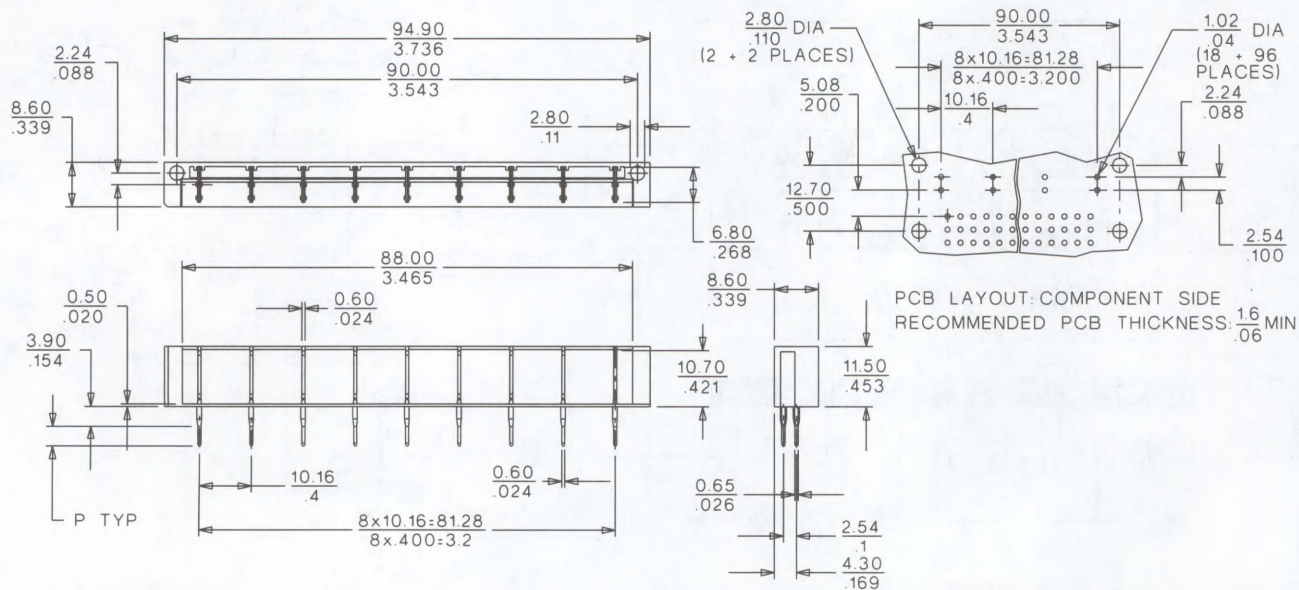
Operating Temperature: -40 to +140°C



# 2.54mm (.100") Pitch DIN 41612/IEC 603-2 Safe Sequential Mating System (SSMS) Power Connector

**85322****Male**

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION

| Circuits | Order No.  | Contact Loading | Press-Fit Tail Dimension P |
|----------|------------|-----------------|----------------------------|
| 9        | 85322-0361 | Full            | 5.8 (.228)                 |

## Series 5XXXX Introduction

Molex's 5XXXX series of DIN 41612 connectors include industry standard dual and triple row receptacles and headers in basic B and C configurations and various other circuit sizes from 10 to 96.

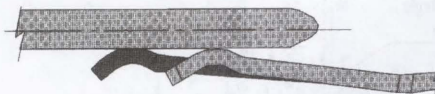
Receptacles feature a dual beam contact on a single side, offering low insertion force and reliable connection.

Headers may be ordered in edge mount style or in face mount versions. Triple row headers and receptacles are available fully loaded or can be ordered with the middle row void.

All versions of the 5XXXX DIN 41612 connectors are available in glass-filled polyester material with 4 plating options: 0.76, 0.5, 0.3 and 0.1  $\mu$ m Gold.

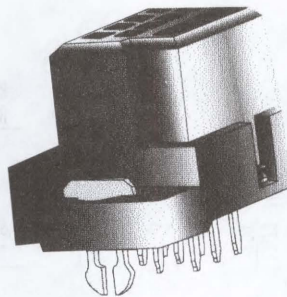
An optional metal hold-down provides secure PCB retention.

### Contact Features Dual Beam Contact



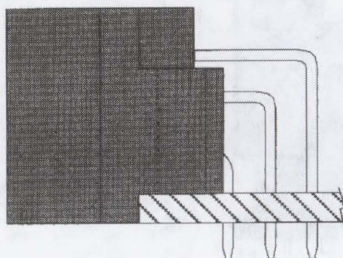
Two points of contact provide smooth insertion and reliable connection.

### PCB Retention Peg

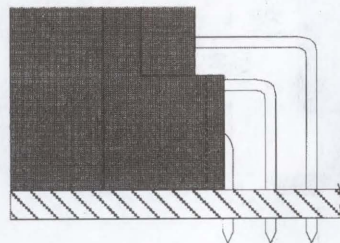


Optional metal hold-down provides secure retention during wave soldering.

### Dual Mounting Options



Edge-Mount Type



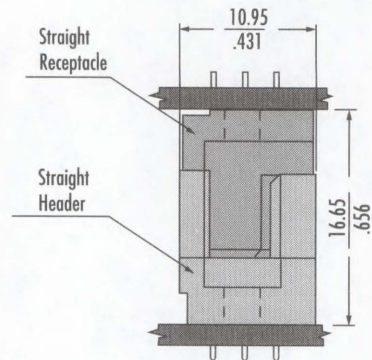
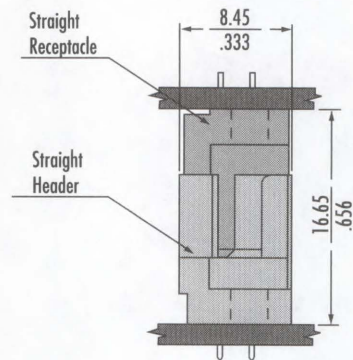
Face-Mount Type



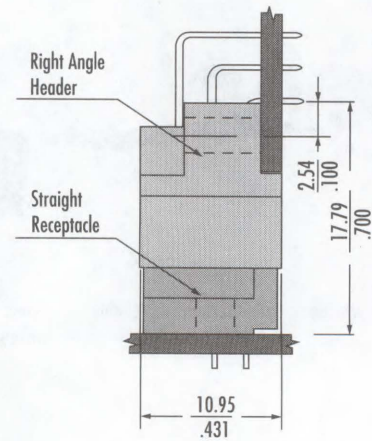
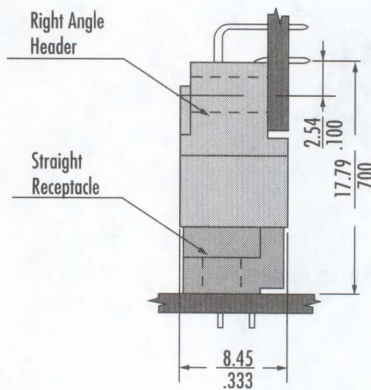
**Dual Row**

**Triple Row**

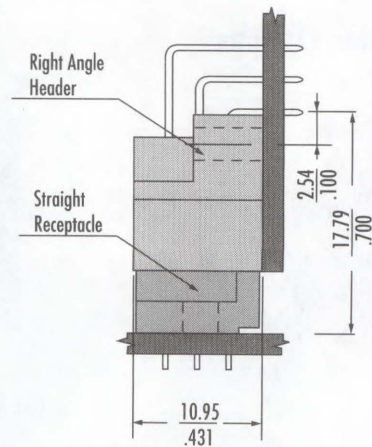
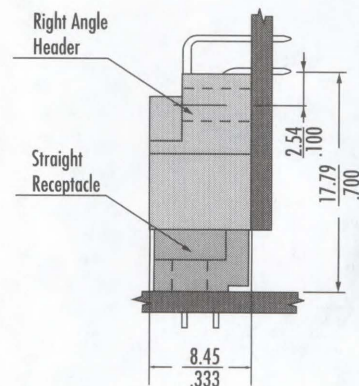
**Stacking**



**Right Angle  
Edge Mount**



**Right Angle  
Face Mount**

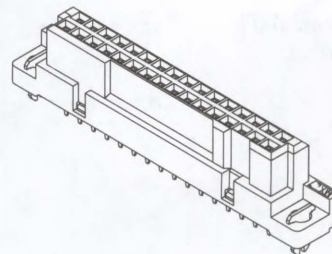




**2.54mm (.100") Pitch**  
**DIN 41612**  
**Receptacle**

**52299/52479/52482**

## Vertical



### Features and Benefits

- Sizes 16 to 64 circuits
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection
- The 52482 has slight dimensional differences from the 52299/52479, contact Molex for details

### Reference Information

Packaging: Tray  
UL File No.: E29179 (for 52299 and 52479)  
CSA File No.: LR19980  
Mates With: 53229, 53315, 53230, 53316, 53294  
and 53319  
Designed In: Millimeters

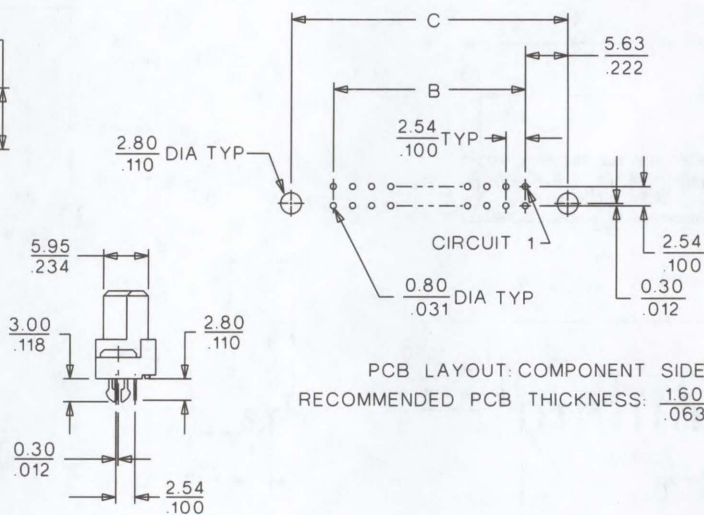
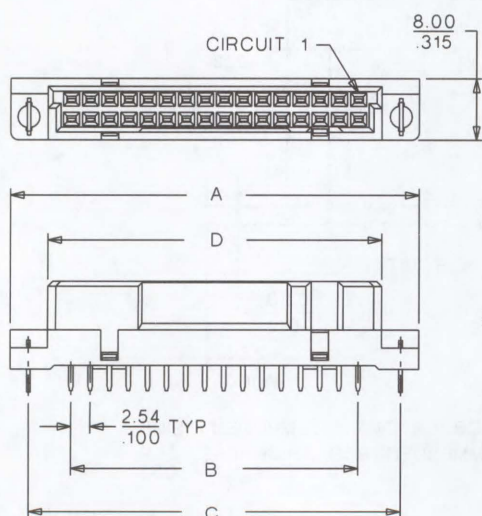
## Electrical

Voltage: 300V  
Current: 2.0A  
Contact Resistance: 20mΩ max.  
Dielectric Withstanding Voltage: 1000V AC  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

Housing: Glass-filled PBT, UL 94V-0  
Contact: Phosphor Bronze  
Metal Peg: Phosphor Bronze  
Plating: See Table  
Operating Temperature: -55 to +105°C

**CATALOG DRAWING (FOR REFERENCE ONLY)**



Note: 52479 shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits                        | Order No.         |                | Dimension     |               |               |               |
|---------------------------------|-------------------|----------------|---------------|---------------|---------------|---------------|
|                                 | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 10                              |                   | 52482-0100     | 26.22 (1.032) | 10.16 (.400)  | 21.42 (.843)  | 16.32 (.643)  |
| 16                              | 52299-016X        | 52479-016X     | 33.84 (1.332) | 17.78 (.700)  | 29.04 (1.143) | 23.94 (.943)  |
| 20                              | 52299-020X        | 52479-020X     | 38.92 (1.532) | 22.86 (.900)  | 34.12 (1.343) | 29.02 (1.143) |
| 32                              | 52299-032X        | 52479-032X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) | 44.26 (1.743) |
| 44                              | 52299-044X        | 52479-044X     | 69.40 (2.732) | 53.34 (2.100) | 64.60 (2.543) | 59.50 (2.343) |
| 50                              | 52299-050X        | 52479-050X     | 77.02 (3.032) | 60.96 (2.400) | 72.22 (2.843) | 67.12 (2.643) |
| 64                              | 52299-064X        | 52479-064X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) | 84.90 (3.343) |
| Replace X with plating no., 0-3 |                   |                |               |               |               |               |

Plating No. 0: 0.1 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 1: 0.3 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 2: 0.5 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 3: 0.76 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Sizes 16 to 64 circuits
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

## Reference Information

Packaging: Tray  
 UL File No.: E29179  
 CSA File No.: LR19980  
 Mates With: 52299 and 52479  
 Designed In: Millimeters

## Electrical

Voltage: 300V  
 Current: 2.0A  
 Contact Resistance: 20mΩ max.  
 Dielectric Withstanding Voltage: 1000V AC  
 Insulation Resistance: 10<sup>6</sup> MΩ min.

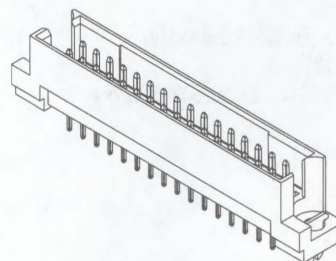
## Physical

Housing: Glass-filled PBT, UL 94V-0  
 Contact: Brass  
 Metal Peg: Phosphor Bronze  
 Plating: See Table  
 Operating Temperature: -55 to +105°C

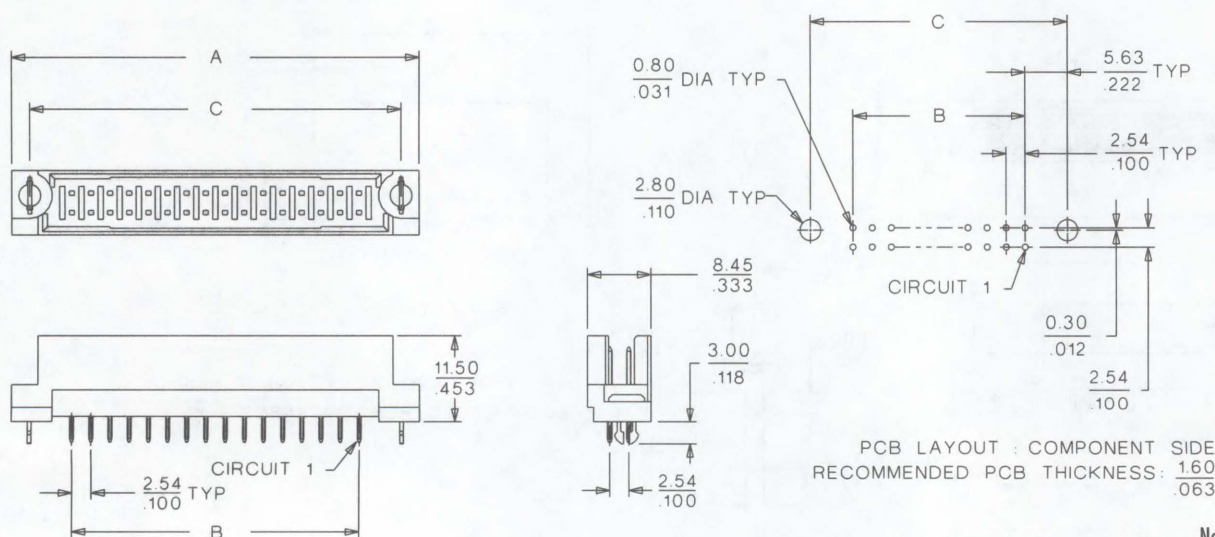
**molex®** 2.54mm (.100") Pitch  
 DIN 41612  
 Header

**53229/53315**

**Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



Note: 53315 shown

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             |
| 16       | 53229-016X        | 53315-016X     | 33.84 (1.332) | 17.78 (.700)  | 29.04 (1.143) |
| 20       | 53229-020X        | 53315-020X     | 38.92 (1.532) | 22.86 (.900)  | 34.12 (1.343) |
| 32       | 53229-032X        | 53315-032X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) |
| 44       | 53229-044X        | 53315-044X     | 69.40 (2.732) | 53.34 (2.100) | 64.60 (2.543) |
| 50       | 53229-050X        | 53315-050X     | 77.02 (3.032) | 60.96 (2.400) | 72.22 (2.843) |
| 64       | 53229-064X        | 53315-064X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 16 to 64 circuits
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Product Specification: PS-53230/PS-53316

Packaging: Tray

UL File No.: E29179 (for 53230 only)

CSA File No.: LR19980

Mates With: 52299 and 52479

Designed In: Millimeters

### Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V AC

Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

Housing: Glass-filled PBT, UL 94V-0

Contact: Brass

Metal Peg: Phosphor Bronze

Plating: See Table

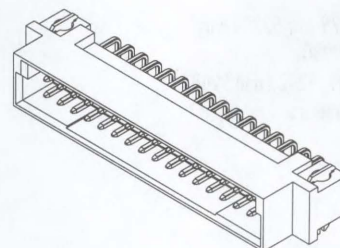
Operating Temperature: -55 to +105°C



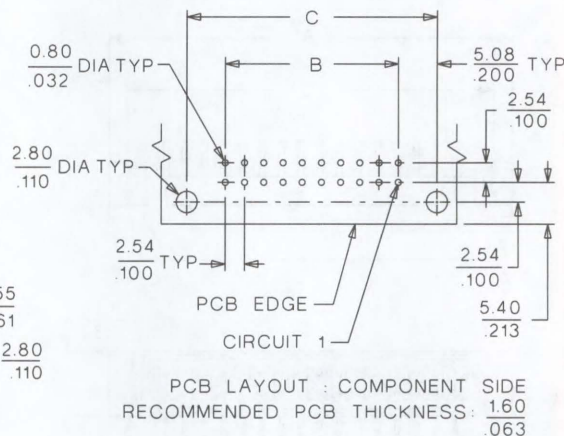
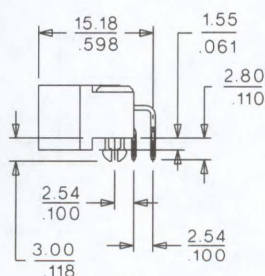
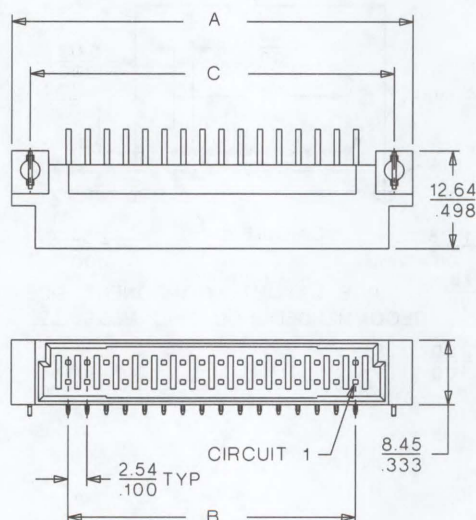
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53230/53316**

**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             |
| 16       | 53230-016X        | 53316-016X     | 32.84 (1.293) | 17.78 (.700)  | 27.94 (1.100) |
| 20       | 53230-020X        | 53316-020X     | 37.92 (1.493) | 22.86 (.900)  | 33.02 (1.300) |
| 32       | 53230-032X        | 53316-032X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) |
| 44       | 53230-044X        | 53316-044X     | 68.40 (2.693) | 53.34 (2.100) | 63.50 (2.500) |
| 50       | 53230-050X        | 53316-050X     | 76.02 (2.993) | 60.96 (2.400) | 71.12 (2.800) |
| 64       | 53230-064X        | 53316-064X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area



## FEATURES AND SPECIFICATIONS

## Features and Benefits

- Sizes 16 to 64 circuits
- Face mount for wave soldering applications
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

## Reference Information

Product Specification: PS-53294/PS-53319

Packaging: Tray

UL File No.: E29179 (for 53294 only)

CSA File No.: LR19980

Mates With: 52299, 52479 and 52482

Designed In: Millimeters

## Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V AC

Insulation Resistance: 10<sup>6</sup> MΩ min.

## Physical

Housing: Glass-filled PBT, UL 94V-0

Contact: Brass

Metal Peg: Phosphor Bronze

Plating: See Table

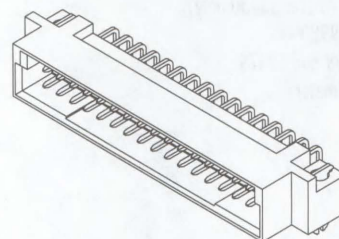
Operating Temperature: -55 to +105°C



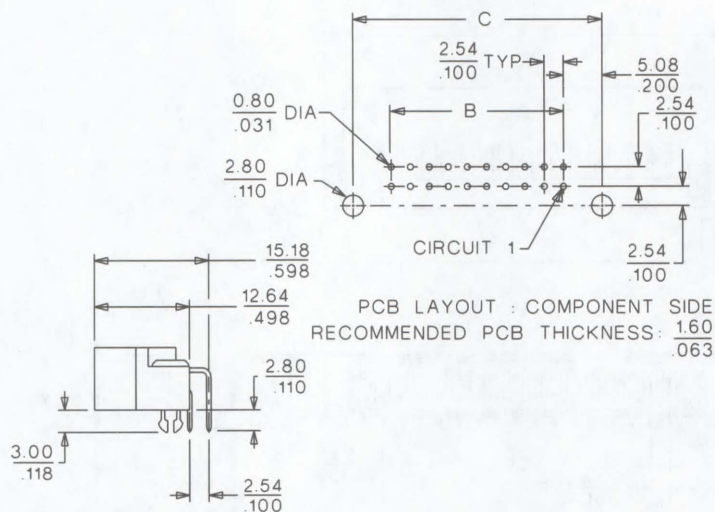
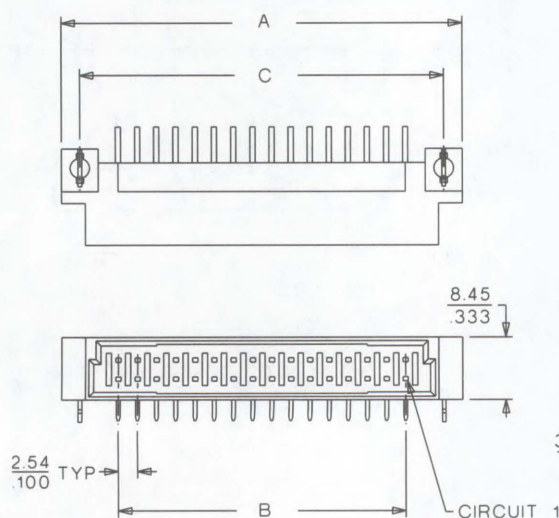
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53294/53319**

**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             |
| 10       |                   | 53319-0100     | 25.22 (.993)  | 10.16 (.400)  | 20.32 (.800)  |
| 16       | 53294-016X        | 53319-016X     | 32.84 (1.300) | 17.78 (.700)  | 27.94 (1.096) |
| 20       | 53294-020X        | 53319-020X     | 37.92 (1.493) | 22.86 (.900)  | 33.02 (1.300) |
| 32       | 53294-032X        | 53319-032X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) |
| 44       | 53294-044X        | 53319-044X     | 68.40 (2.693) | 53.34 (2.100) | 63.50 (2.500) |
| 50       | 53294-050X        | 53319-050X     | 76.02 (2.993) | 60.96 (2.400) | 71.12 (2.800) |
| 64       | 53294-064X        | 53319-064X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

### Features and Benefits

- ### Reference Information

**Packaging:** Tray

UL File No.: E29179

CSA File No.: LR19980

Mates With: 53233, 53317, 53234, 53318.

53296 and 53320

Designed In: Millimeters

## Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

**Dielectric Withstanding Voltage: 1000V AC**

Insulation Resistance:  $10^6$  M $\Omega$  min.

### Physical

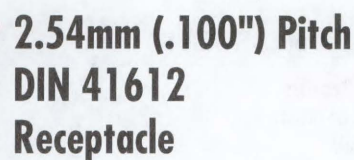
Housing: Glass-filled PBT, UL 94V-0

**Contact: Phosphor Bronze**

**Metal Peg: Phosphor Bronze**

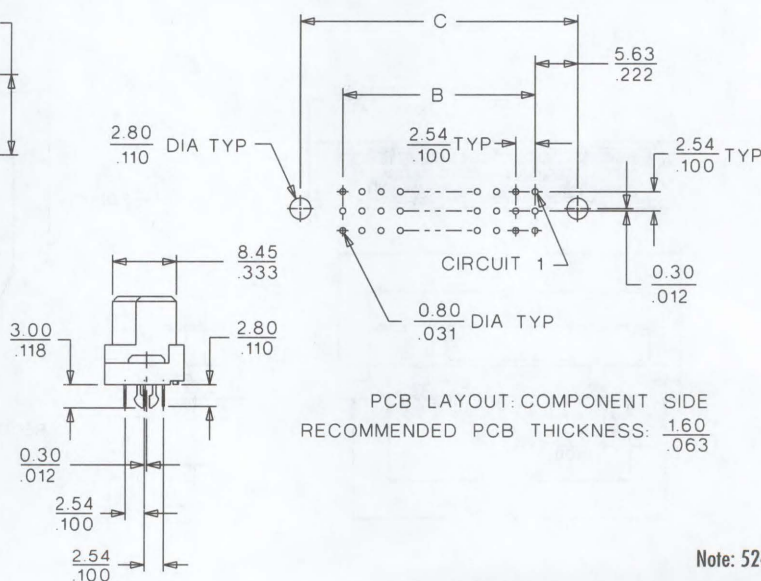
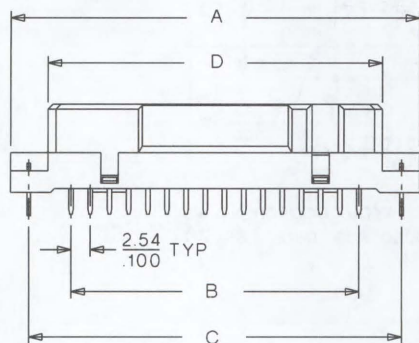
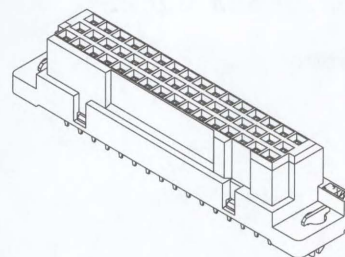
Plating: See Table

Operating Temperature: -55 to +105°C



52302/52480

## Triple Row Vertical



Note: 52480 shown

| Circuits                        | Order No.         |                | Dimension     |               |               |               |
|---------------------------------|-------------------|----------------|---------------|---------------|---------------|---------------|
|                                 | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 48                              | 52302-048X        | 52480-048X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) | 44.26 (1.743) |
| 96                              | 52302-096X        | 52480-096X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) | 84.90 (3.345) |
| Replace X with plating no., 0-3 |                   |                |               |               |               |               |

Plating No. 0: 0.1  $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5µm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.76 $\mu$ m Gold with Nickel underplate overall and Tin/Lead in solder area



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 32 and 64 circuits
- Center row void
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Packaging: Tray  
 UL File No.: E29179 (for 52379 only)  
 CSA File No.: LR19980  
 Mates With: 53297, 53321, 53298, 53322, 53299 and 53323  
 Designed In: Millimeters

### Electrical

Voltage: 300V  
 Current: 2.0A  
 Contact Resistance: 20mΩ max.  
 Dielectric Withstanding Voltage: 1000V AC/1 min.  
 Insulation Resistance: 10<sup>6</sup> MΩ min.

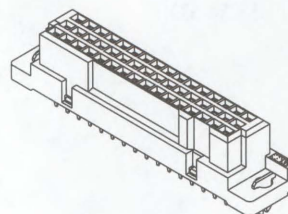
### Physical

Housing: Glass-filled PBT, UL 94V-0  
 Contact: Phosphor Bronze  
 Plating: See Table  
 Operating Temperature: -55 to +105°C

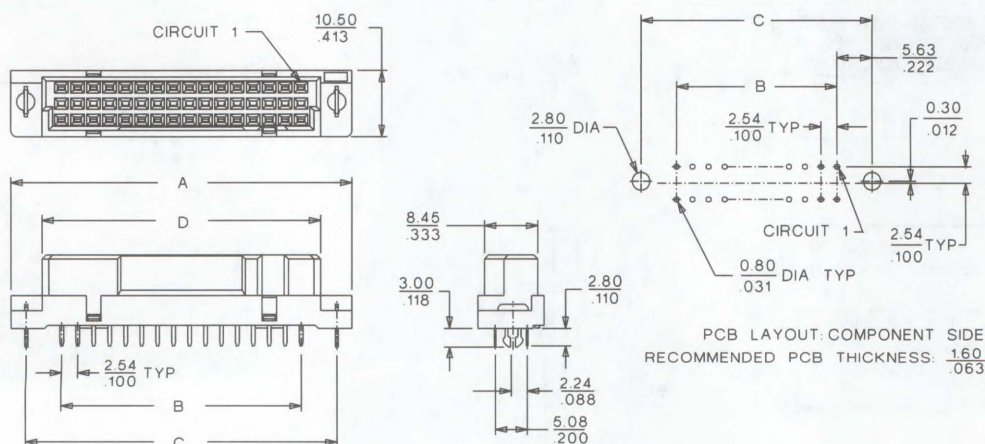
**molex®** 2.54mm (.100") Pitch  
**DIN 41612**  
**Receptacle**

**52379/52481**

**Triple Row**  
**Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 32       | 52379-032X        | 52481-032X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) | 44.26 (1.743) |
| 64       | 52379-064X        | 52481-064X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) | 84.90 (3.343) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area  
 Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area  
 Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area  
 Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 48 and 96 circuits
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Product Specification: PS-53233/PS-53317

Packaging: Tray

UL File No.: E29179 (for 53233 only)

CSA File No.: LR19980

Mates With: 52302 and 52480

Designed In: Millimeters

### Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V AC

Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

Housing: Glass-filled PBT, UL 94V-0

Contact: Brass

Metal Peg: Phosphor Bronze

Plating: See Table

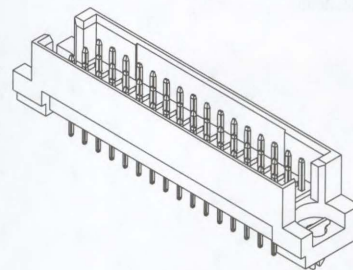
Operating Temperature: -55 to +105°C



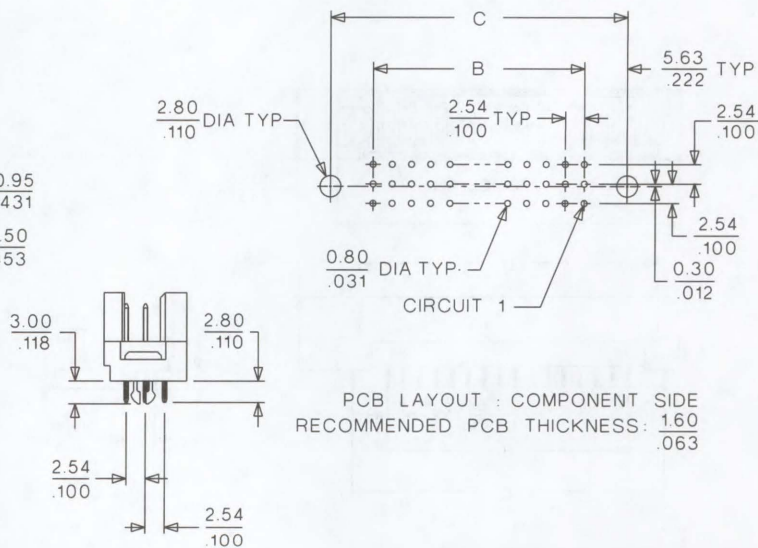
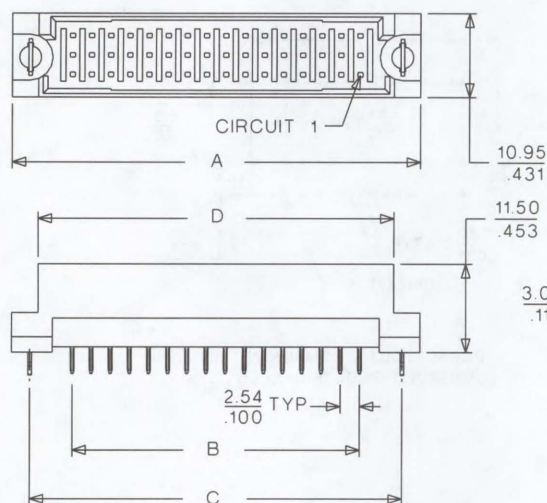
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53233/53317**

**Triple Row**  
**Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 48       | 53233-048X        | 53317-048X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) | 47.16 (1.857) |
| 96       | 53233-096X        | 53317-096X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) | 87.80 (3.457) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 32 and 64 circuits
- Center row void
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Packaging: Tray  
CSA File No.: LR19980  
Mates With: 52379 and 52481  
Designed In: Millimeters

### Electrical

Voltage: 300V  
Current: 2.0A  
Contact Resistance: 20mΩ max.  
Dielectric Withstanding Voltage: 1000V AC/1 min.  
Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

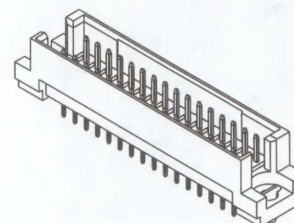
Housing: Glass-filled PBT, UL 94V-0  
Contact: Brass  
Plating: See Table  
Operating Temperature: -55 to +105°C



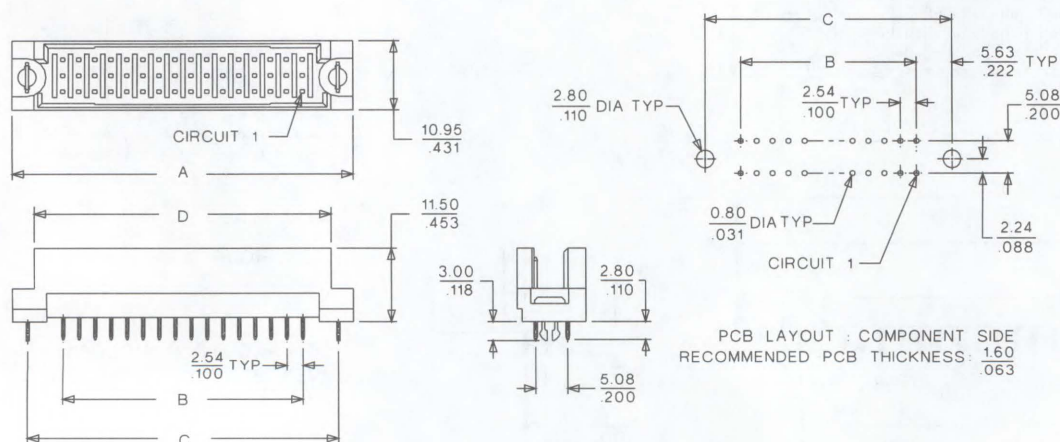
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53297/53321**

**Triple Row**  
**Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 32       | 53297-032X        | 53321-032X     | 54.16 (2.132) | 38.10 (1.500) | 49.36 (1.943) | 47.16 (1.857) |
| 64       | 53297-064X        | 53321-064X     | 94.80 (3.732) | 78.74 (3.100) | 90.00 (3.543) | 87.80 (3.457) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 48 and 96 circuits
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Product Specification: PS-53234/PS-53318

Packaging: Tray

UL File No.: E29179 (for 53234 only)

CSA File No.: LR19980

Mates With: 52302 and 52480

Designed In: Millimeters

### Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V AC

Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

Housing: Glass-filled PBT, UL 94V-0

Contact: Brass

Metal Peg: Phosphor Bronze

Plating: See Table

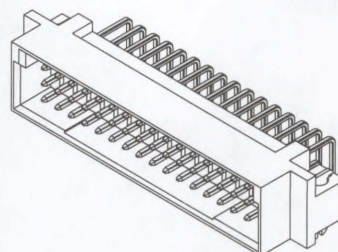
Operating Temperature: -55 to +105°C



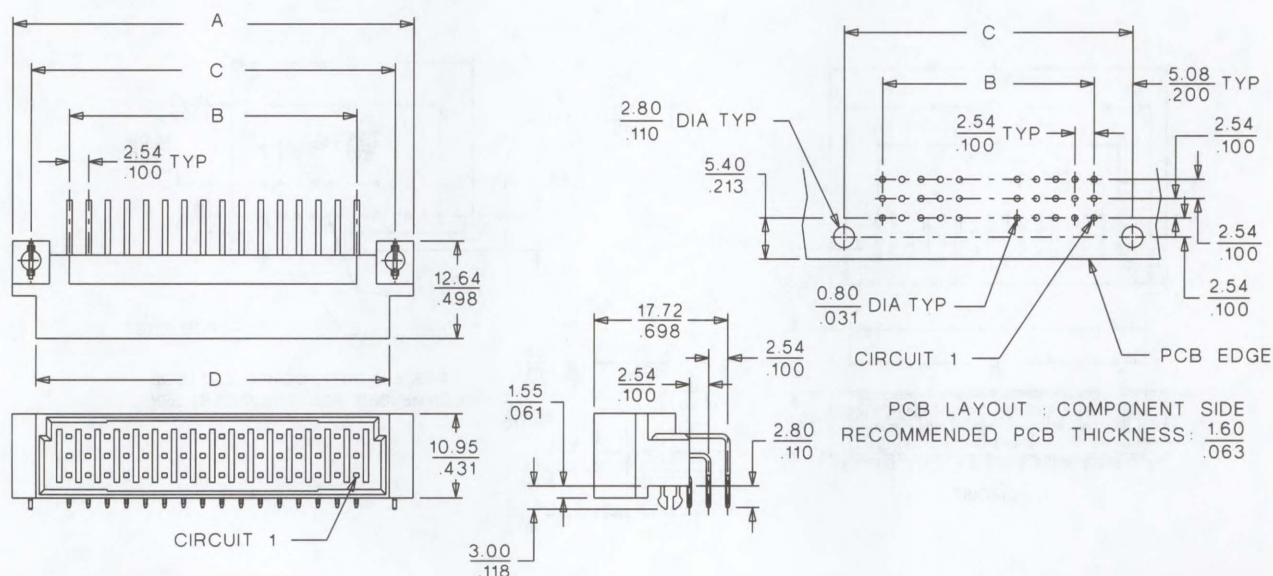
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53234/53318**

**Triple Row**  
**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 48       | 53234-048X        | 53318-048X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) | 46.86 (1.845) |
| 96       | 53234-096X        | 53318-096X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) | 87.50 (3.445) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area



# FEATURES AND SPECIFICATIONS

## Features and Benefits

- Sizes 32 and 64 circuits
- Center row void
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

## Reference Information

Packaging: Tray  
CSA File No.: LRT19980  
Mates With: 52379 and 52481  
Designed In: Millimeters

## Electrical

Voltage: 300V  
Current: 2.0A  
Contact Resistance: 20mΩ max.  
Dielectric Withstanding Voltage: 1000V AC/1 min.  
Insulation Resistance: 10<sup>6</sup> MΩ min.

## Physical

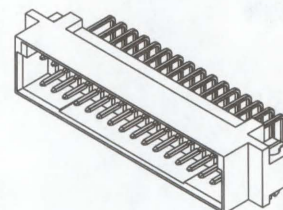
Housing: Glass-filled PBT, UL 94V-0  
Contact: Brass  
Plating: See Table  
Operating Temperature: -55 to +105°C



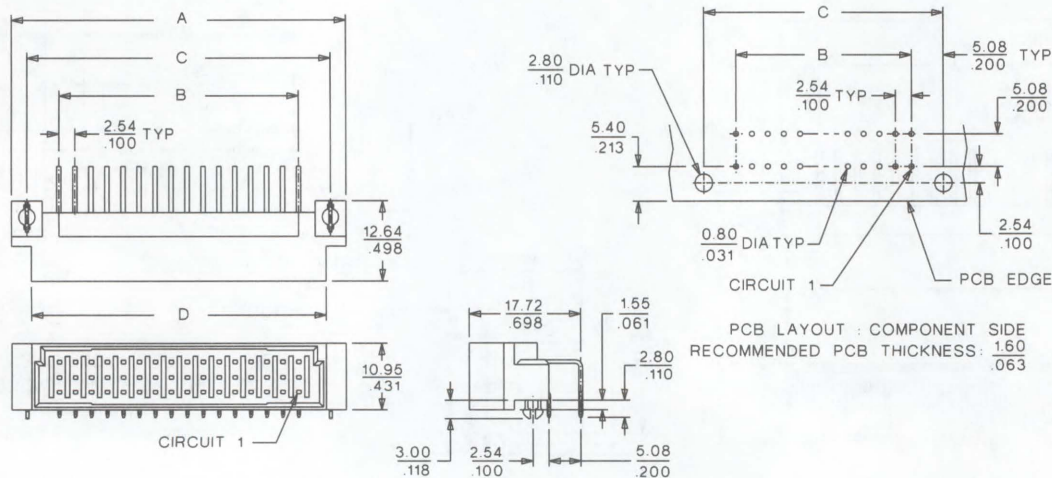
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53298/53322**

**Triple Row**  
**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 32       | 53298-032X        | 53322-032X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) | 46.86 (1.845) |
| 64       | 53298-064X        | 53322-064X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) | 87.50 (3.445) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 48 and 96 circuits
- Face mount for wave soldering applications
- DIN 41612 and IEC 603-2 compatible
- Two points of contact provide low insertion force and reliable connection

### Reference Information

Product Specification: PS-53296/PS-53320

Packaging: Tray

UL File No.: E29179 (for 53296 only)

CSA File No.: LR19980

Mates With: 52302 and 52480

Designed In: Millimeters

### Electrical

Voltage: 300V

Current: 2.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V AC

Insulation Resistance: 10<sup>6</sup> MΩ min.

### Physical

Housing: Glass-filled PBT, UL 94V-0

Contact: Brass

Metal Peg: Phosphor Bronze

Plating: See Table

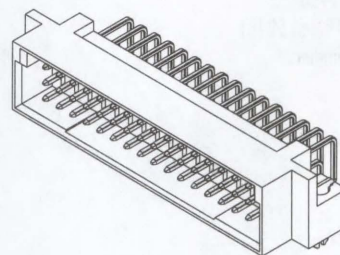
Operating Temperature: -55 to +105°C



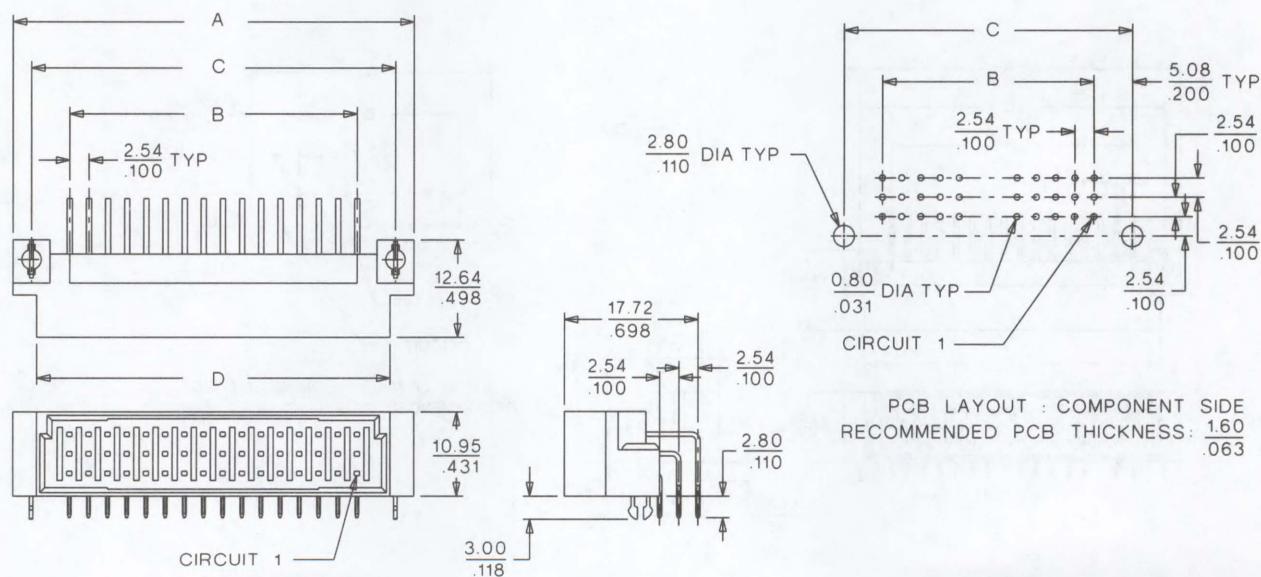
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53296/53320**

**Triple Row**  
**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 48       | 53296-048X        | 53320-048X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) | 46.86 (1.845) |
| 96       | 53296-096X        | 53320-096X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) | 87.50 (3.445) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area

Plating No. 3: 0.7μm Gold with Nickel underplate overall and Tin/Lead in solder area



# FEATURES AND SPECIFICATIONS

## Features and Benefits

- Sizes 32 and 64 circuits
- Center row void
- DIN 41612 and IEC 603-2 compatible
- Face-mount for wave-soldering applications
- Two points of contact provide low insertion force and reliable connection

## Reference Information

Packaging: Tray  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 52379 and 52481  
Designed In: Millimeters

## Electrical

Voltage: 300V  
Current: 2.0A  
Contact Resistance: 20mΩ max.  
Dielectric Withstanding Voltage: 1000V AC/1 min.  
Insulation Resistance: 10<sup>6</sup> MΩ min.

## Physical

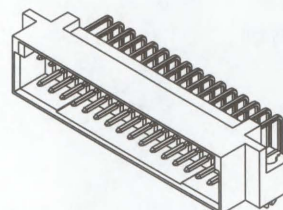
Housing: Glass-filled PBT, UL 94V-0  
Contact: Brass  
Plating: See Table  
Operating Temperature: -55 to +105°C



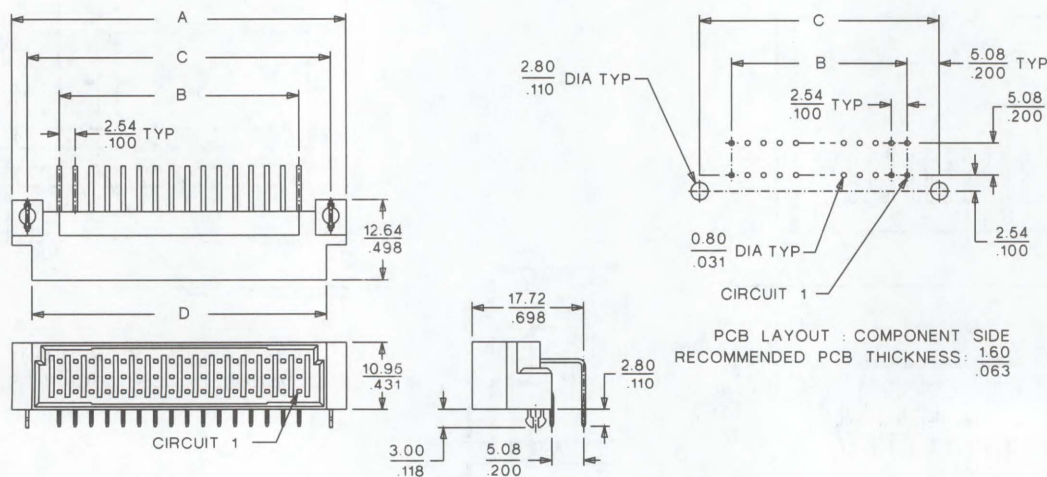
**2.54mm (.100") Pitch**  
**DIN 41612**  
**Header**

**53299/53323**

**Triple Row**  
**Right Angle**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.         |                | Dimension     |               |               |               |
|----------|-------------------|----------------|---------------|---------------|---------------|---------------|
|          | Without Metal Peg | With Metal Peg | A             | B             | C             | D             |
| 32       | 53299-032X        | 53323-032X     | 53.16 (2.093) | 38.10 (1.500) | 48.26 (1.900) | 46.86 (1.845) |
| 64       | 53299-064X        | 53323-064X     | 93.80 (3.693) | 78.74 (3.100) | 88.90 (3.500) | 87.50 (3.445) |

Replace X with plating no., 0-3

Plating No. 0: 0.1μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 1: 0.3μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 2: 0.5μm Gold with Nickel underplate overall and Tin/Lead in solder area  
Plating No. 3: 0.76μm Gold with Nickel underplate overall and Tin/Lead in solder area

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Patented, high-performance, Low Force Helix terminal with contact layout .075 x .075"
- High cycle life from controlled plating and contact surfaces
- Suitable for high-density and high-performance applications
- Molded-in guiding features for blind mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-71631

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980

Mates With: 71633

Designed In: Inches

### Electrical

Voltage: 40V

Current: 1.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 100 MΩ min.

### Mechanical

Contact Insertion Force: 84g max.

Mating Force: 60g nom.

Unmating Force: 20g min.

Durability: 5000 cycles

### Physical

Housing: Glass-filled polymer, UL 94V-0

Contact: Beryllium Copper Alloy

Plating:

Terminals—30μ" min. Gold over Nickel in contact area,

100μ" min. Tin/Lead over Nickel in PC tail area

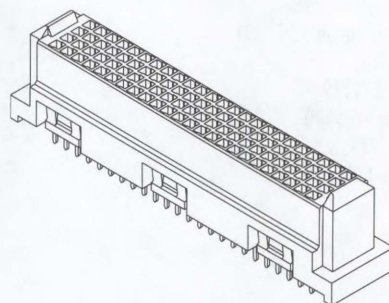
Operating Temperature: -20 to +80°C



## 1.90mm (.075") Pitch LFH™ Matrix 75 Unshielded Receptacle

**71631**

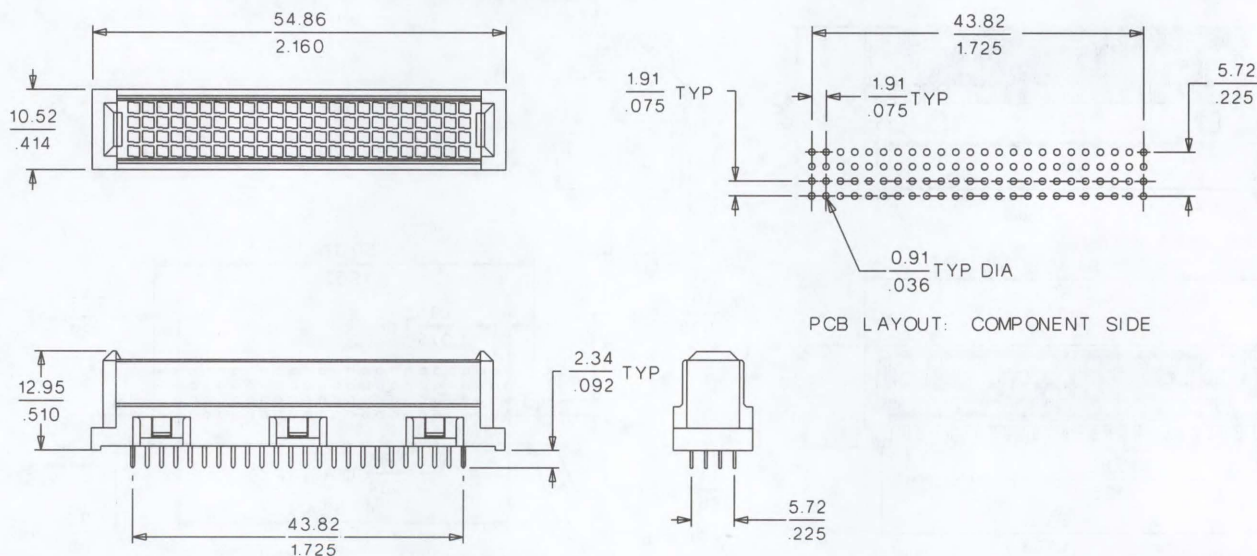
**96 Circuit, Vertical**



Backplane Connector Systems

J

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Stacking Height When Mated With: |                        |
|----------|------------|----------------------------------|------------------------|
|          |            | 71633 Vertical Plug              | 71633 Right Angle Plug |
| 96       | 51-26-0041 | 18.57 (.731)                     | See Drawing            |

• US Standard Product, available through Molex franchised distributors





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Patented, high-performance, Low Force Helix terminal with contact layout .075 x .075"
- High cycle life from controlled plating and contact surfaces
- Suitable for high-density and high-performance applications
- Molded-in guiding features for blind mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-71631

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980

Mates With: 71631

Designed In: Inches

### Electrical

Voltage: 40V

Current: 1.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 100 MΩ min.

### Mechanical

Contact Insertion Force: 84g max.

Mating Force: 60g nom.

Unmating Force: 20g min.

Durability: 5000 cycles

### Physical

Housing: Glass-filled polymer, UL 94V-0

Contact: Phosphor Bronze Alloy

Plating:

Terminals—30μ" min. Gold over Nickel in contact area,

100μ" min. Tin/Lead over Nickel in PC tail area

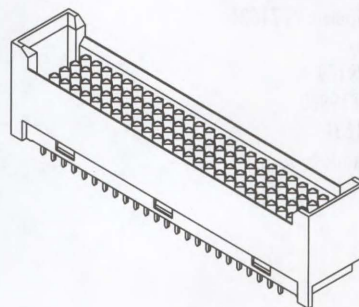
Operating Temperature: -20 to +80°C



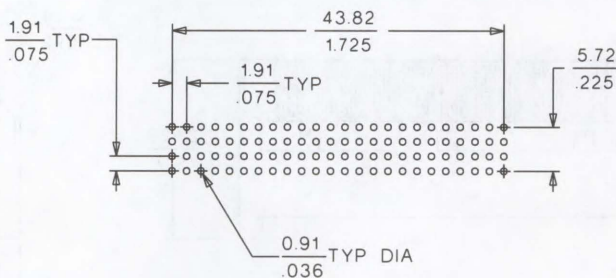
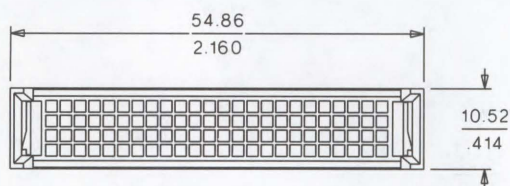
**1.90mm (.075") Pitch**  
**LFH™ Matrix 75**  
**Unshielded Plug**

**71633**

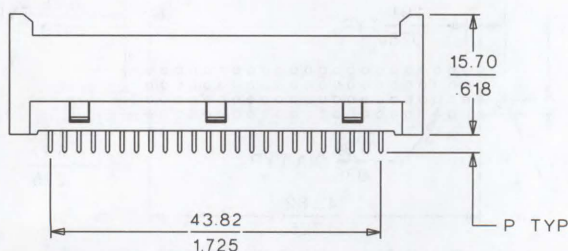
**96 Circuit, Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Stacking Height When Mated With: |                              | Dimension P |
|----------|------------|----------------------------------|------------------------------|-------------|
|          |            | 71631 Vertical Receptacle        | 71631 Right Angle Receptacle |             |
| 96       | 51-26-0051 | 18.57 (.731)                     | See Drawing                  | 2.34 (.092) |
|          | 71633-1002 | 18.57 (.731)                     | See Drawing                  | 3.68 (.145) |





## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Patented, high-performance, Low Force Helix terminal with contact layout .075 x .075"
- High cycle life from controlled plating and contact surfaces
- Suitable for high-density and high-performance applications
- Optional center screw and threaded insert facilitate board stacking
- Surface Mount Compatible

### Reference Information

Product Specification: PS-71536  
 Packaging: Tray  
 UL File No.: E29179  
 CSA File No.: LR19980  
 Mates With: 71537  
 Designed In: Inches

### Electrical

Voltage: 40V  
 Current: 1.0A  
 Contact Resistance: 20mΩ max.  
 Dielectric Withstanding Voltage: 1000V  
 Insulation Resistance: 100 MΩ min.

### Mechanical

Contact Insertion Force: 84g max.  
 Mating Force: 60g nom.  
 Unmating Force: 20g min.  
 Durability: 5000 cycles

### Physical

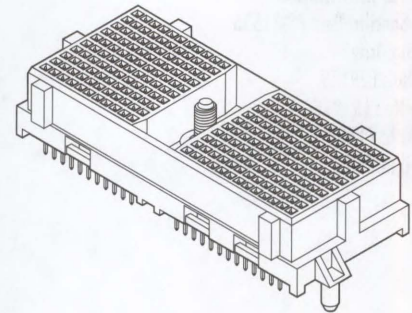
Housing: Glass-filled polymer, UL 94V-0  
 Contact: Beryllium Copper Alloy  
 Plating:  
 Terminals—30μ" min. Gold over Nickel in contact area,  
 100μ" min. Tin/Lead over Nickel in PC tail area  
 Operating Temperature: -20 to +80°C



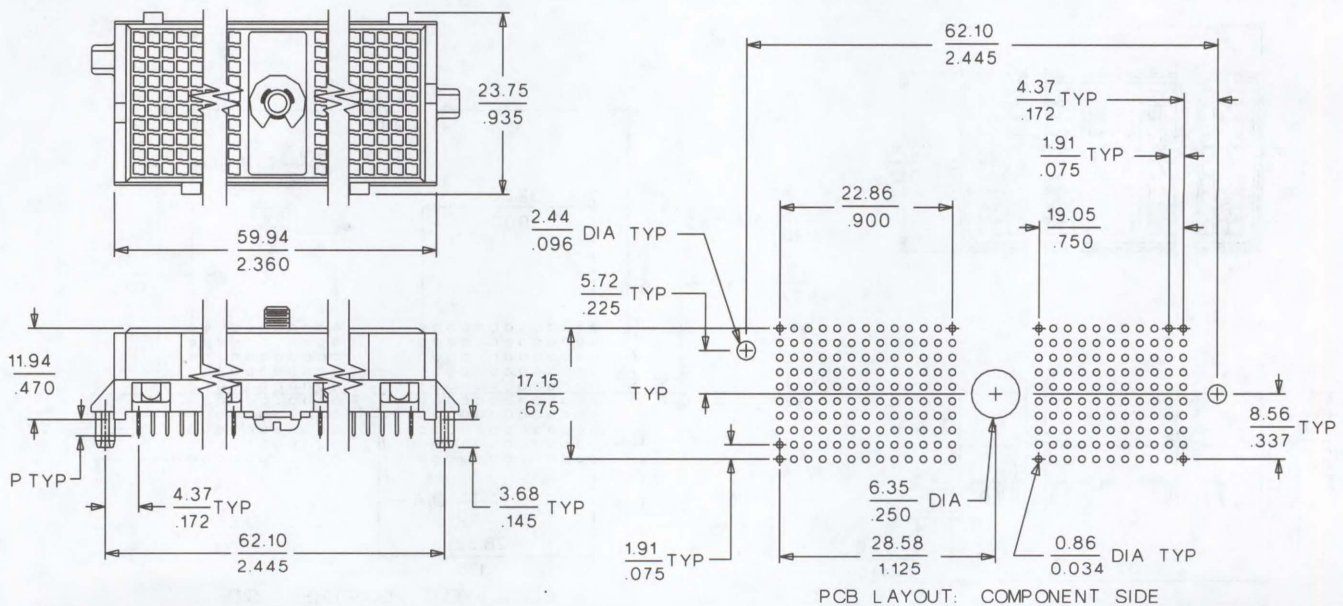
## 1.90mm (.075") Pitch LFH™ Matrix 75 Unshielded Receptacle

**71536**

**240 Circuit, Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension P | Stacking Height When Mated with 71537 Vertical Plug |
|----------|------------|-------------|-----------------------------------------------------|
| 240      | 15-92-3240 | 2.16 (.085) | 18.80 (.740)                                        |
|          | 15-92-3242 | 5.08 (.200) |                                                     |
|          | 15-92-3244 | 3.18 (.125) |                                                     |



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Patented, high-performance, Low Force Helix terminal with contact layout .075 x .075"
- High cycle life from controlled plating and contact surfaces
- Suitable for high-density and high-performance applications
- Center screw and threaded insert facilitate board stacking
- Surface Mount Compatible

### Reference Information

Product Specification: PS-71536

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980

Mates With: 71536

Designed In: Inches

### Electrical

Voltage: 40V

Current: 1.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 100 MΩ min.

### Mechanical

Contact Insertion Force: 84g max.

Mating Force: 60g nom.

Unmating Force: 20g min.

Durability: 5000 cycles

### Physical

Housing: Glass-filled polymer, UL 94V-0

Contact: Phosphor Bronze Alloy

Plating:

Terminals—30μ" min. Gold over Nickel in contact area,

100μ" min. Tin/Lead over Nickel in PC tail area

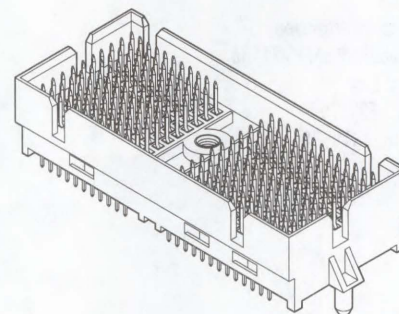
Operating Temperature: -20 to +80°C



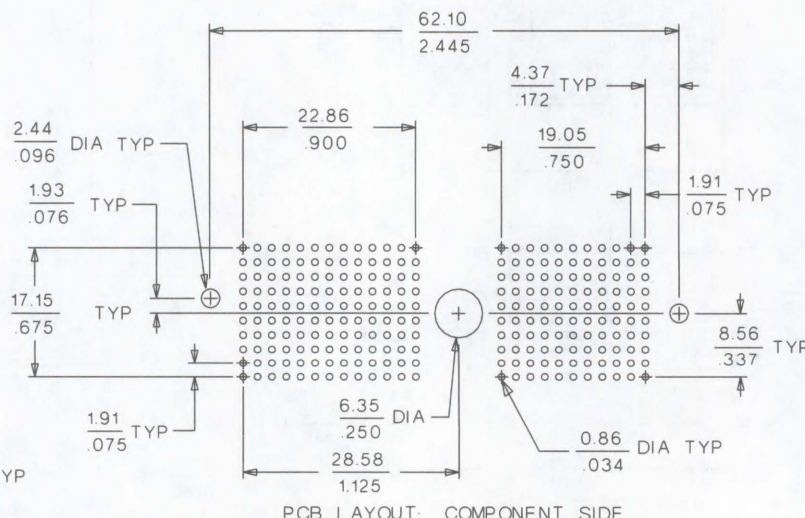
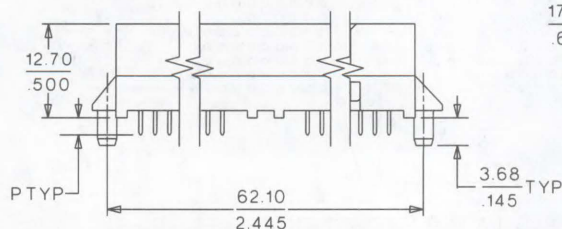
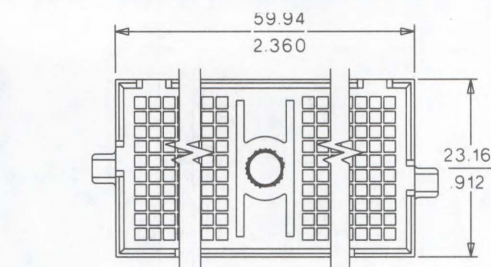
## 1.90mm (.075") Pitch LFH™ Matrix 75 Unshielded Plug

**71537**

**240 Circuit, Vertical**



## CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE

## ORDERING INFORMATION AND DIMENSIONS

| Circuits | Order No.  | Dimension P | Stacking Height When Mated with 71536 Vertical Receptacle |
|----------|------------|-------------|-----------------------------------------------------------|
| 240      | 15-92-2240 | 2.16 (.085) | 18.80 (.740)                                              |
|          | 15-92-2242 | 5.08 (.200) |                                                           |
|          | 15-92-2244 | 3.18 (.125) |                                                           |



## Ordering Instructions

In order to insert a typical row of connectors (excluding the Daughtercard modules), it is necessary to select the individual insertion tools and then pick the appropriate tooling holder (See also examples below):

1. Determine the combination of signal modules and power modules to be inserted.
2. Select the proper insertion modules from the tooling list and descriptions that appear before the repair tools in this section. Remember to include the appropriate alignment block(s).
3. In the description of each tool is the tool length; write down the length of each tool selected (IF YOU REQUIRE 4 OF A PARTICULAR TOOL, MAKE SURE YOU WRITE DOWN ITS LENGTH 4 TIMES).

4. Total up these lengths.
5. Using the length just calculated, select the next largest tooling holder. The tooling holder can be shorter than the total tooling but not more than 0.50mm (.020") per side.
6. All of the tools selected above must be ordered separately.

### Ordering Daughtercard Tooling

1. Do steps 1, 3 and 4 above.
2. Using the total length just calculated, select the next longest daughtercard insertion tool.

## EXAMPLES

The following are some examples showing how to select the proper tooling:

### Example 1

To be inserted: 1 No. 74059-2501 6 by 25 backplane signal module (with locating pins on one end).

1. Look at the tooling list that appears before the repair tools in this section and find the required tool. In this case it would be 62201-0901.
2. Since the connector has locating pins on one end, an alignment block will also be required. From the list, pick the 6 row alignment block, Order No. 62201-1002.
3. From the descriptions of these tools get the lengths; 62201-0901 = 50.00mm (1.968") and 62201-1002 = 7.00mm (.275")
4. Add these two values for a total of 57.00mm (2.244")
5. From the 6 Row Tooling Holder description pick the 65.00mm (2.559") long holder, Order No. 62201-0900.
6. The order to Molex should thus include the following:

| Quantity | Order No.  | Description                                |
|----------|------------|--------------------------------------------|
| 1        | 62201-0901 | 6 by 25 Header Insertion Module            |
| 1        | 62201-1002 | 6 Row Alignment Block                      |
| 1        | 62201-0900 | 6 Row 65.00mm (2.559") Long Tooling Holder |

Figure A shows the assembled unit.

### Example 2

The following combination is to be inserted:

- 1 74058-2501 6 by 25 Signal Module, locating pins on left
- 1 74059-1001 6 by 10 Signal Module, locating pins on right
- 4 74029-6000 6 Row Power Modules.

1. From the tooling list pick two 62201-1002, one for each signal module since both have locating pins.
2. Next pick a 62201-0901 for the first module.
3. A 62201-1001 will be needed for the second module.
4. Now pick four (4) 62201-1601 power module tools.
5. Get the length information from the descriptions.
6. Total up the lengths:

|            |                  |                           |
|------------|------------------|---------------------------|
| 62201-1002 | 7.00mm (.276")   | Total = 105.60mm (4.157") |
| 62201-0901 | 50.00mm (1.968") |                           |
| 62201-1001 | 20.00mm (.787")  |                           |
| 62201-1002 | 7.00mm (.276")   |                           |
| 62201-1601 | 5.40mm (.213")   |                           |
| 62201-1601 | 5.40mm (.213")   |                           |
| 62201-1601 | 5.40mm (.213")   |                           |
| 62201-1601 | 5.40mm (.213")   |                           |

7. Using this total length, pick the 62201-1100 Tooling Holder, as this is 115.00mm (4.528") long.
8. Therefore the purchase order should contain the following:

| Quantity | Order No.  | Description                                  |
|----------|------------|----------------------------------------------|
| 2        | 62201-1002 | 6 Row Alignment Block                        |
| 1        | 62201-0901 | 6 by 25 Header Insertion Module              |
| 1        | 62201-1001 | 6 by 10 Header Insertion Module              |
| 4        | 62201-1601 | 6 Row Power Module Inserter                  |
| 1        | 62201-1100 | 6 Row, 115.00mm (4.528") Long Tooling Holder |

Figure B shows the assembled insertion tooling.

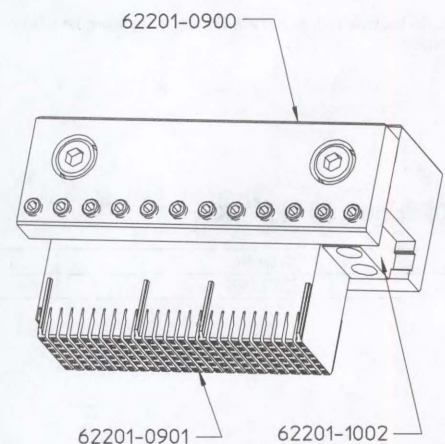


Figure A

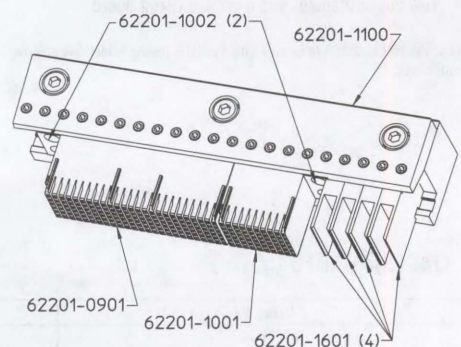


Figure B



FEATURES AND SPECIFICATIONS

Features

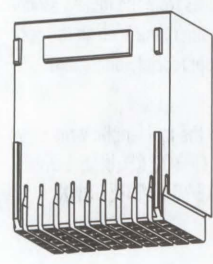
- This tool is for inserting the 74057, 74058 and 74059 series, 6 row, 10 terminals to a row, connector into a printed circuit board

Specifications

Length: 20.00mm (.787")

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

6 by 10 Header Insertion Module



ORDERING INFORMATION

| Order No.  | Description                     |
|------------|---------------------------------|
| 62201-1001 | 6 by 10 Header Insertion module |

FEATURES AND SPECIFICATIONS

Features

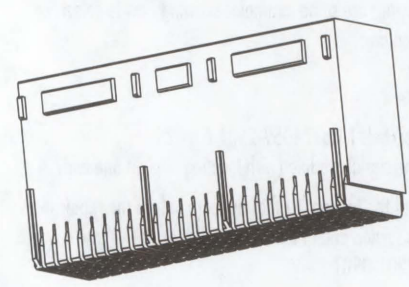
- This tool is for inserting the 74057, 74058 and 74059 series, 6 row, 25 terminals to a row, connector into a printed circuit board

Specifications

Length: 50.00mm (1.970")

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

6 by 25 Header Insertion Module



ORDERING INFORMATION

| Order No.  | Description                     |
|------------|---------------------------------|
| 62201-0901 | 6 by 25 Header Insertion module |

FEATURES AND SPECIFICATIONS

Features

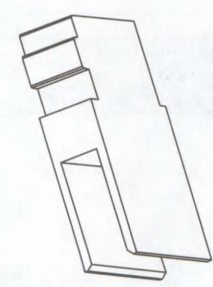
- This module is used for inserting the 74029-6XXX series 6 row power modules into a printed circuit board

Specifications

Length: 5.40mm (.213")

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

6 Row Power Module Inserter



ORDERING INFORMATION

| Order No.  | Description                 |
|------------|-----------------------------|
| 62201-1601 | 6 Row Power Module Inserter |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.

## FEATURES AND SPECIFICATIONS

### Features

- This module is used together with a 6 row module above for inserting the 74058 and 74059 series 6 row connectors with locating pins, into a printed circuit board

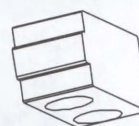
### Specifications

Length: 7.00mm (.276")



## Application Tooling VHDM\*

### 6 Row Alignment Block



## ORDERING INFORMATION

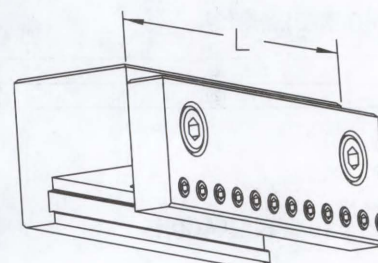
| Order No.  | Description           |
|------------|-----------------------|
| 62201-1002 | 6 Row Alignment Block |

## FEATURES AND SPECIFICATIONS

### Features

- These holders are used to hold the various insertion modules required for a particular application. See below for more detail.

### 6 Row Tooling for Header Insertion Modules



## ORDERING INFORMATION

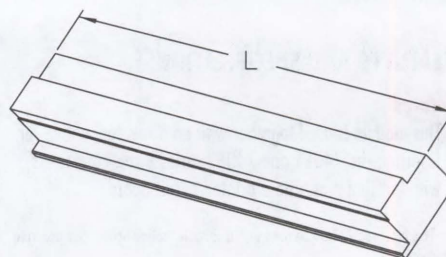
| Order No.  | Description         | Dimension (L)  |
|------------|---------------------|----------------|
| 62201-0900 | 6 Row Module Holder | 65.00 (2.560)  |
| 62201-1000 | 6 Row Module Holder | 36.00 (1.420)  |
| 62201-1100 | 6 Row Module Holder | 115.00 (4.530) |

## FEATURES AND SPECIFICATIONS

### Features

- These tools are used to press in 74030-XXXX daughtercard assemblies (composed of 74031 wafers, 74037 guidance and 74026 power modules) to a printed circuit board

### 6 Row Daughtercard Press-In Tool



## ORDERING INFORMATION

| Order No.  | Description                   | Dimension (L)   |
|------------|-------------------------------|-----------------|
| 62201-1602 | 6 Row Daughtercard Press Tool | 305.00 (12.000) |
| 62201-1603 | 6 Row Daughtercard Press Tool | 254.00 (10.000) |
| 62201-1604 | 6 Row Daughtercard Press Tool | 203.00 (7.990)  |
| 62201-1605 | 6 Row Daughtercard Press Tool | 152.50 (6.000)  |
| 62201-1606 | 6 Row Daughtercard Press Tool | 101.50 (3.990)  |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

**Features**

- This tool is for inserting the 74060, 74061 and 74062 series, 8 row, 10 terminals to a row, connector into a printed circuit board

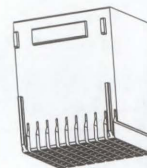
Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

**Specifications**

Length: 20.00mm (.787")

**molex**® Application Tooling  
**VHDM\***

## 8 by 10 Header Insertion Module



## ORDERING INFORMATION

| Order No.  | Description                     |
|------------|---------------------------------|
| 62201-1301 | 8 by 10 Header Insertion module |

## FEATURES AND SPECIFICATIONS

**Features**

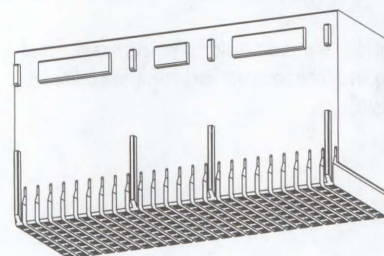
- This tool is for inserting the 74060, 74061 and 74062 series, 8 row, 25 terminals to a row, connector into a printed circuit board

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

**Specifications**

Length: 50.00mm (1.970")

## 8 by 25 Header Insertion Module



## ORDERING INFORMATION

| Order No.  | Description                     |
|------------|---------------------------------|
| 62201-1201 | 8 by 25 Header Insertion module |

## FEATURES AND SPECIFICATIONS

**Features**

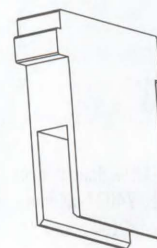
- This module is for inserting the 74029-8XXX series 8 row power modules into a printed circuit board

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

**Specifications**

Length: 5.40mm (.213")

## 8 Row Power Module Inserter



## ORDERING INFORMATION

| Order No.  | Description                 |
|------------|-----------------------------|
| 62201-1401 | 8 Row Power Module Inserter |

## FEATURES AND SPECIFICATIONS

**Features**

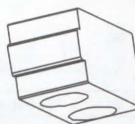
- This module is used together with an 8 row tool above for inserting the 74061 and 74062 series 8 row connectors with locating pins, into a printed circuit board

Note: This tool module is to be used with a suitable tooling holder. See ordering instructions.

**Specifications**

Length: 7.00mm (.276")

## 8 Row Alignment Block



## ORDERING INFORMATION

| Order No.  | Description           |
|------------|-----------------------|
| 62201-1302 | 8 Row Alignment Block |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



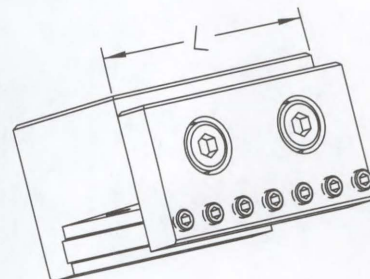
## FEATURES AND SPECIFICATIONS

### Features

- These tools are used to hold the various insertion tools required for a particular application. See below for more detail.

## molex® Application Tooling VHDM\*

### 8 Row Tooling Holder for Header Insertion Modules



## ORDER INFORMATION

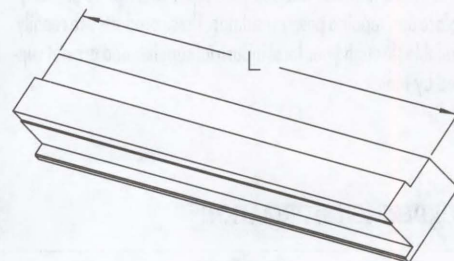
| Order No.  | Description    | Dimension (L)  |
|------------|----------------|----------------|
| 62201-1200 | Tooling Holder | 65.00 (2.560)  |
| 62201-1300 | Tooling Holder | 36.00 (1.420)  |
| 62201-1800 | Tooling Holder | 115.00 (4.530) |

## FEATURES AND SPECIFICATIONS

### Features

- These tools are used to press in 74040-XXXX daughtercard assemblies (composed of 74041 wafers, 74039 guidance, and 74026 power modules) to a printed circuit board

### 8 Row Daughtercard Press-In Tool



## ORDERING INFORMATION

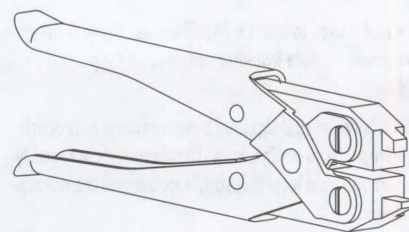
| Order No.  | Description                   | Dimension (L)   |
|------------|-------------------------------|-----------------|
| 62201-1402 | 8 Row Daughtercard Press Tool | 305.00 (12.000) |
| 62201-1403 | 8 Row Daughtercard Press Tool | 254.00 (10.000) |
| 62201-1404 | 8 Row Daughtercard Press Tool | 203.00 (7.990)  |
| 62201-1405 | 8 Row Daughtercard Press Tool | 152.50 (6.000)  |
| 62201-1406 | 8 Row Daughtercard Press Tool | 101.50 (3.990)  |

## FEATURES AND SPECIFICATIONS

### Features

- These tools are used to insert joiner modules onto the daughtercards after they have been pressed into a printed circuit board.

### Manual Insertion Tooling for VHDM Joiner Modules



## ORDERING INFORMATION

| Ordering No. |
|--------------|
| 62100-3800   |

## TOOLING LIST

| Connector Order No.       | Description                     | Insert Tool |
|---------------------------|---------------------------------|-------------|
| 74057, 74058 and 74059    | 6 by 10 Signal Module           | 62201-1001  |
| 74073                     | 6 by 11 Signal Module (Special) | 62201-1101  |
| 74057, 74058 and 74059    | 6 by 25 Signal Module           | 62201-0901  |
| 74060, 74061, 74062       | 8 by 10 Signal Module           | 62201-1301  |
| 74060, 74061, 74062       | 8 by 25 Signal Module           | 62201-1201  |
| 74029-6XXX                | 6 Row Power Module              | 62201-1601  |
| 74029-8XXX                | 8 Row Power Module              | 62201-1401  |
| 74058 and 74059 with Pins | 6 Row Alignment Block           | 62201-1002  |
| 74061 and 74062 with Pins | 8 Row Alignment Block           | 62201-1302  |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.



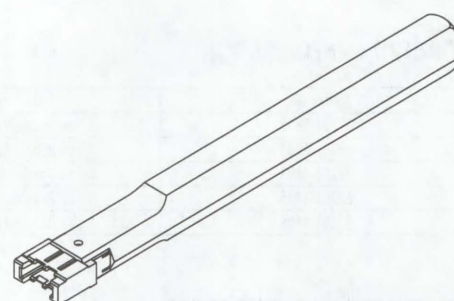
**INTRODUCTION TO VHDM\* REPAIR TOOLS**

Molex has developed a line of VHDM repair tools. These repair tools are used to remove and replace individual VHDM parts that may have been damaged at any point in the board assembly and/or handling process. With these repair tools, a VHDM user will not have to reject an entire connector and/or PC board. Users will have the ability to repair an individual connector, which will reduce scrap, plus save time and money.

**Application Tooling  
VHDM\*****VHDM  
Repair Tools****FEATURES AND SPECIFICATIONS**

This repair tool is used to insert a 74029 series, 6 row, 2 circuit, backplane power module insulator onto pins, on a printed circuit board.

Note: Plastic hammer and slip joint pliers required to properly replace and repair a power insulator. These products are readily available through your local industrial supplier and are not supplied by Molex.

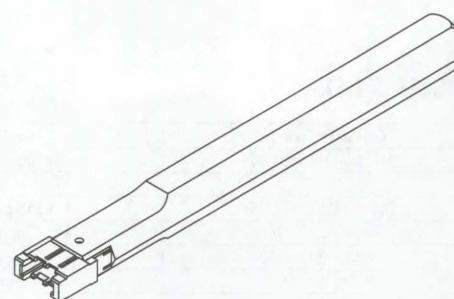
**6 Row  
Power Insulation Inserter  
Repair Tool****ORDERING INFORMATION**

| Order Number | Description                       |
|--------------|-----------------------------------|
| 62100-3500   | 6 Row Power Insulator Repair Tool |

**FEATURES AND SPECIFICATIONS**

This repair tool is used to insert a 74029 series, 8 row, 3 circuit, backplane power module insulator onto pins, on a printed circuit board.

Note: Plastic hammer and slip joint pliers required to properly replace and repair a power insulator. These products are readily available through your local industrial supplier and are not supplied by Molex.

**8 Row  
Power Insulation Inserter  
Repair Tool****ORDERING INFORMATION**

| Order Number | Description                       |
|--------------|-----------------------------------|
| 62100-3600   | 8 Row Power Insulator Repair Tool |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.

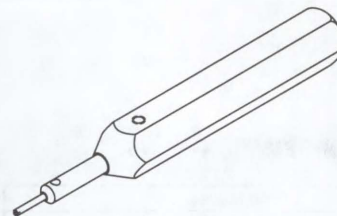
## FEATURES AND SPECIFICATIONS

This repair tool is used to insert an individual signal pin into a VHDM backplane header.

Note: Miniature needle nose pliers and tweezers required to properly replace and repair single pins. These products are readily available through your local industrial supplier and are not supplied by Molex.

**molex**® Application Tooling  
**VHDM\***

## Single Pin Inserter Repair Tool



## ORDERING INFORMATION

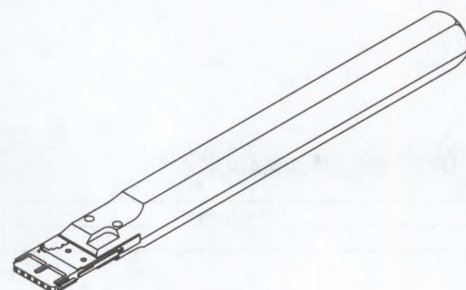
| Order Number | Description                      |
|--------------|----------------------------------|
| 62201-5700   | Single Pin Insulator Repair Tool |

## FEATURES AND SPECIFICATIONS

This repair tool is used to insert multiple signal pins and/or individual shields into a 6 row VHDM backplane header.

Note: Plastic hammer required to properly insert shields. This product is readily available through your local industrial supplier and is not supplied by Molex.

## 6 Row Pin and Shield Repair Tool



## ORDERING INFORMATION

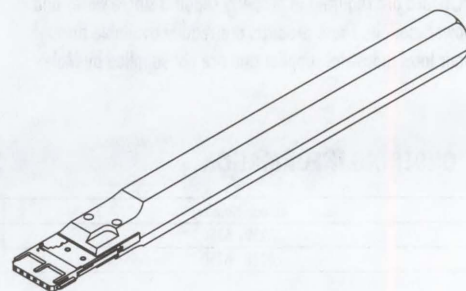
| Order Number | Description                      |
|--------------|----------------------------------|
| 62201-5800   | 6 Row Pin and Shield Repair Tool |

## FEATURES AND SPECIFICATIONS

This repair tool is used to insert multiple signal pins and/or individual shields into a 8 row VHDM backplane header.

Note: Plastic hammer required to properly insert shields. This product is readily available through your local industrial supplier and is not supplied by Molex.

## 8 Row Pin and Shield Repair Tool



## ORDERING INFORMATION

| Order Number | Description                      |
|--------------|----------------------------------|
| 62201-5900   | 8 Row Pin and Shield Repair Tool |

\* Very High Density Metric and VHDM are trademarks of Teradyne, Inc.

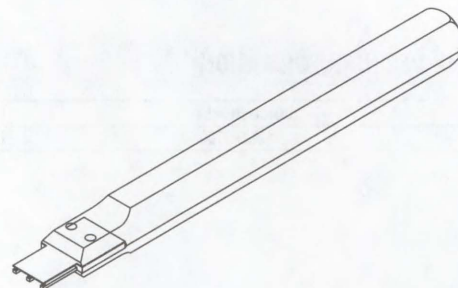


**FEATURES AND SPECIFICATIONS**

This repair tool is used to remove damaged shields from 6 row VHDM backplane headers.



## 6 Row Shield Extraction Repair Tool

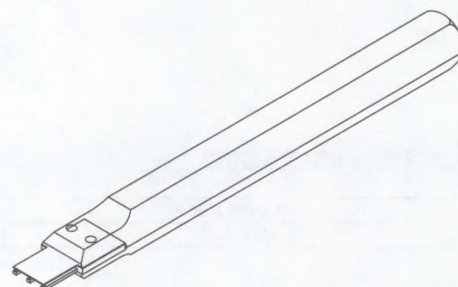
**ORDERING INFORMATION**

| Order Number | Description                         |
|--------------|-------------------------------------|
| 62201-6000   | 6 Row Shield Extraction Repair Tool |

**FEATURES AND SPECIFICATIONS**

This repair tool is used to remove damaged shields from 8 row VHDM backplane headers.

## 8 Row Shield Extraction Repair Tool

**ORDERING INFORMATION**

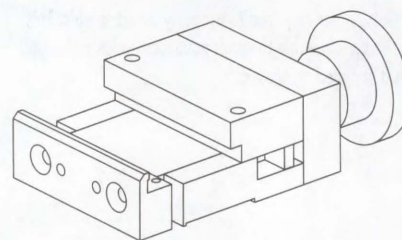
| Order Number | Description                         |
|--------------|-------------------------------------|
| 62201-6100   | 8 Row Shield Extraction Repair Tool |

**FEATURES AND SPECIFICATIONS**

These repair tools are used to remove and replace the stiffener from, and repair the VHDM daughtercard and power module receptacles assemblies.

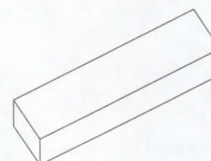
Note: Plastic hammer, miniature needle nose pliers, two starrett feeler gauges .004 thick x 4" long and a pallet to support the PC board are required to properly repair a single wafer and power module. These products are readily available through your local industrial supplier and are not supplied by Molex.

## Stiffener Press Repair Tool

**ORDERING INFORMATION**

| Order Number | Description                 |
|--------------|-----------------------------|
| 62201-6200   | Stiffener Press Repair Tool |
| 62201-6250   | Press Block Repair Tool     |

## Press Block Repair Tool



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## FEATURES AND SPECIFICATIONS

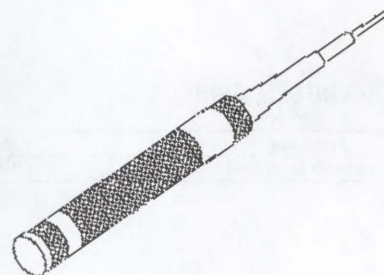
### Features and Benefits

- Inserts a single HDM backplane signal contact into a backplane module mounted to a PC board
- Intended use for field repairs of damaged backplane contacts

### Specifications

Size: Diameter—15.00mm (.590")  
Length—122.02mm (4.80")  
Weight: .4kg (1 lb)

## Manual Backplane Single Contact Insertion Tool for HDM\*



## ORDERING INFORMATION

| Description                   | Order No.  | Product No.                                                                                                                  |
|-------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------|
| Single Contact Insertion Tool | 62100-1400 | 73642, 73643, 73644, 73942, 73943, 73944, 73797, 73798, 73799, 73769, 73770, 73771, 73781, 73782, 73783, 73800, 73801, 73802 |

## FEATURES AND SPECIFICATIONS

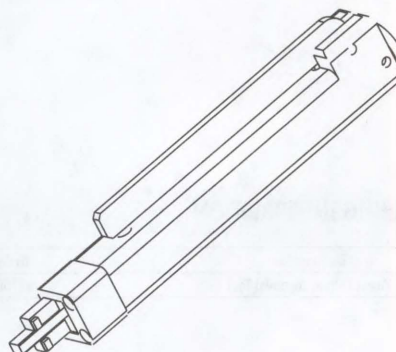
### Features and Benefits

- Separates modules from the stiffener assembly

### Specifications

Size: Diameter—19.00mm (.750")  
Length—150.00mm (6.00")  
Height—32.00mm (1.25")  
Weight: .7kg (1.5 lb)

## Manual Daughtercard Module Removal Tool for HDM



## ORDERING INFORMATION

| Description                      | Order No.  | Product No. |
|----------------------------------|------------|-------------|
| Daughtercard Module Removal Tool | 62100-1300 | 73670       |

## FEATURES AND SPECIFICATIONS

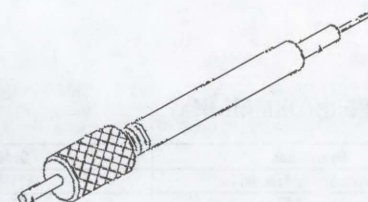
### Features and Benefits

- For the removal of backplane signal contacts from the PC board

### Specifications

Size: Diameter—8.00mm (.300")  
Length—80.00mm (3.00")  
Weight: .1kg (.2 lb)

## Manual Backplane Signal Pin Knockout Tool for HDM



## ORDERING INFORMATION

| Description              | Order No.  | Product No.                                                                                                                  |
|--------------------------|------------|------------------------------------------------------------------------------------------------------------------------------|
| Signal Pin Knockout Tool | 62100-1000 | 73642, 73643, 73644, 73942, 73943, 73944, 73797, 73798, 73799, 73769, 73770, 73771, 73781, 73782, 73783, 73800, 73801, 73802 |

\* High Density Metric and HDM<sup>PLUS</sup> are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

**Features**

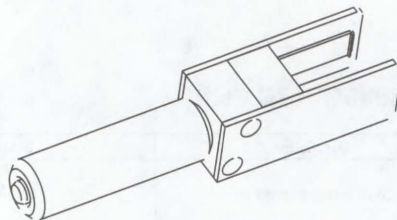
- For removal of the backplane power module insulator

**Specifications**

Size: Length—83.00mm (3.20")  
 Width—15.00mm (.600")  
 Height—18.00mm (.700")  
 Weight: .2kg (.4 lb)

**molex®** Application Tooling

## Manual Backplane Power Module Removal Tool for HDM\*



## ORDERING INFORMATION

| Description               | Order No.  | Product No. |
|---------------------------|------------|-------------|
| Power Module Removal Tool | 62100-1100 | 73656       |

## FEATURES AND SPECIFICATIONS

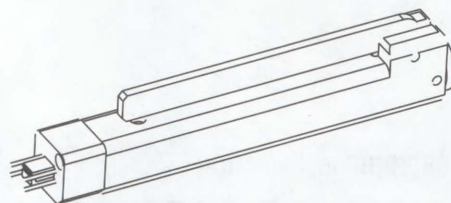
**Features**

- Removes the backplane power contact after the insulator is removed

**Specifications**

Size: Length—150.00mm (6.00")  
 Width—19.00mm (.750")  
 Height—32.00mm (1.25")  
 Weight: 7kg (1.5lb)

## Manual Backplane Power Contact Removal Tool for HDM



## ORDERING INFORMATION

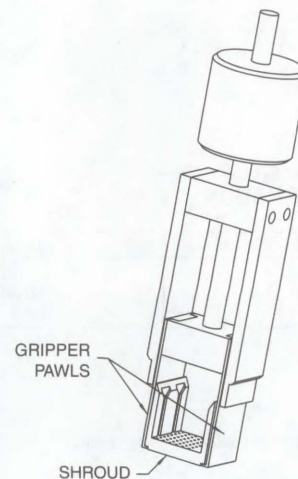
| Description                | Order No.  | Product No. |
|----------------------------|------------|-------------|
| Power Contact Removal Tool | 62100-1200 | 73656       |

## FEATURES AND SPECIFICATIONS

**Features**

- Hand operated repair tool designed to remove shrouds from damaged HDM connectors so that repairs can be made to the connector

## Manual Shroud Removal Tool for HDM



## ORDERING INFORMATION

| Description                     | Order No.  | Product No. |
|---------------------------------|------------|-------------|
| 48 Position Shroud Removal Tool | 62100-3300 | 73087-0     |
| 72 Position Shroud Removal Tool | 62100-3400 | 73087-0     |

\* High Density Metric and HDM are trademarks of Teradyne, Inc.



## FEATURES AND SPECIFICATIONS

### Features and Benefits

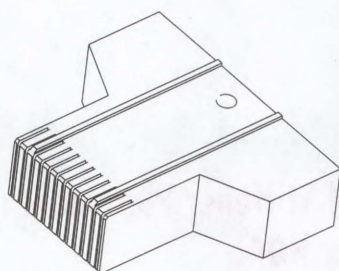
- Inserts HDM connector to PC board
- For use with Press 62200-6400, 62200-8200, 62201-3800 or standard Arbor press

### Specifications

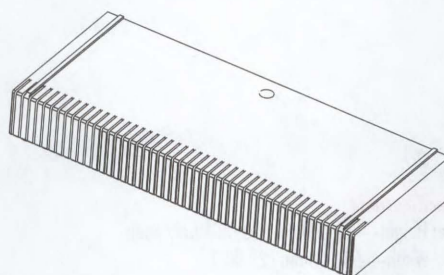
Size: Length—100.00mm (4.00")  
Width—14.00mm (.550")  
Height—41.00mm (1.60")  
Weight: .9kg (2 lb)

## ORDERING INFORMATION

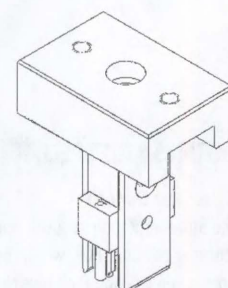
| Description                 | Order No.  | For Use with Product No.                                                                                                             |
|-----------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Power Module Insertion Tool | 62200-5711 | 73642, 73643, 73644, 73656, 73942, 73943, 73944, 73797, 73798, 73799, 73769, 73770, 73771, 73781, 73782, 73783, 738800, 73801, 73802 |
| 288 Position Insertion Tool | 62200-5705 |                                                                                                                                      |
| 144 Position Insertion Tool | 62200-5703 |                                                                                                                                      |
| 72 Position Insertion Tool  | 62200-5704 |                                                                                                                                      |



62200-5704



62200-5705



62200-5711

62200-5703

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Variable speed AC drive
- Accommodates PCB sizes 600 by 760mm
- Handles board thickness from 1.27 (.050") to 6mm (.236")
- Accuracy within 0.05mm
- Touch screen control system
- PCB surface sensor to prevent board damage
- Optional features available: position sensing controls, data acquisition interface, load sensing controls, x-table or x-y table

### Specifications

Size: Length—2006.00mm (79.00")  
Width—965.00mm (38.00")  
Height—2235.00mm (88.00")  
Weight: 2497kg (5500 lb)  
Electrical: 240V AC, 3-Phase, 50/60 Hz, 30A  
Rate: 240 terminations per hour depending on operator skill

## ORDERING INFORMATION

| Description           | Order No.     |
|-----------------------|---------------|
| Electric Press—15 Ton | Contact Molex |

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Ram guide for upper tooling plate
- Anti-rotation feature
- Mounting holes tapped for Molex tooling options
- Anti-tie down feature
- "CE" certified

### Specifications

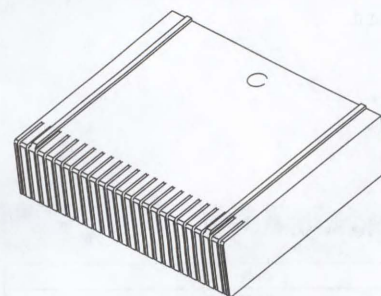
Size: Length—762.00mm (30.00")  
Width—762.00mm (30.00")  
Height—1676.00mm (66.00")  
Weight: 1589kg (3500 lb)  
Electrical: 110V AC  
Air: 6.3kgf/cm<sup>2</sup> (90psi), 6 BAR  
Rate: 240 terminations per hour depending on operator skill

## ORDERING INFORMATION

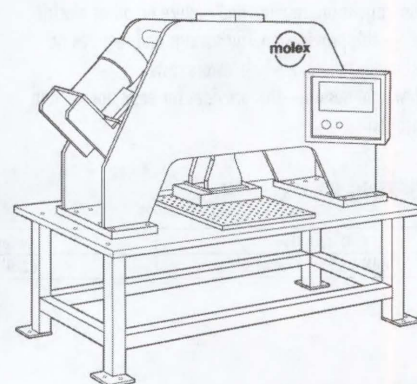
| Description           | Order No.  |
|-----------------------|------------|
| Pneumatic Press—8 Ton | 62200-8200 |
| HDM Tool Kit          | 62201-3700 |
| Press with Tool Kit   | 62201-3800 |

\* High Density Metric and HDM<sup>TM</sup> are trademarks of Teradyne, Inc.

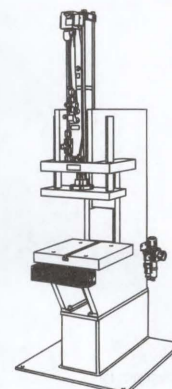
## Backplane Insertion Tools



## Electric Press for HDM\*



## Pneumatic Press for HDM

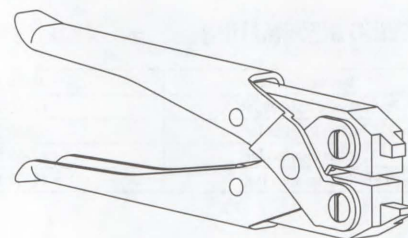




## FEATURES AND SPECIFICATIONS

**Features**

- These tools are used to insert joiner modules onto the daughtercards after they have been pressed into a printed circuit board.

 **Application Tooling**
**Manual Insertion Tooling for HDM\* Joiner Modules**

## ORDERING INFORMATION

| Order No.  |
|------------|
| 62100-3800 |

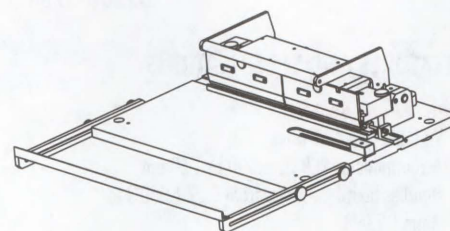
## FEATURES AND SPECIFICATIONS

**Features and Benefits**

- The Stiffener Repair Tool will remove and replace a stiffener rail on a PCB, which requires an operator to obtain and use one tool, plus reduces their overall cost and learning curve
- Accommodates printed circuit boards up to 457.00 x 457.00mm (18.00" x 18.00") allowing for a wide range of repair capability
- Can remove and replace rails up to 406.40mm (16.00") long, providing repair flexibility
- All operations are manual and require no air or electric feeds—this provides energy savings and requires no machine installation, which lowers costs
- Lightweight design—this provides for easy storage and relocation

**Specifications**

Size: Height—254.00mm (10.00") fully open  
 Width—584.00mm (23.00")  
 Depth—445.00mm (17.50") base plate  
 635.00mm (25.00") with support rail  
 fully extended  
 Unpacked Weight: 21.30kg (47 lb)

**Manual Stiffener Placement Tool for HDM**

## ORDERING INFORMATION

| Description               | Order No.  | For Use with Product No. |
|---------------------------|------------|--------------------------|
| HDM Stiffener Repair Tool | 62201-5600 | 73670                    |

\* High Density Metric and HDM are trademarks of Teradyne, Inc.

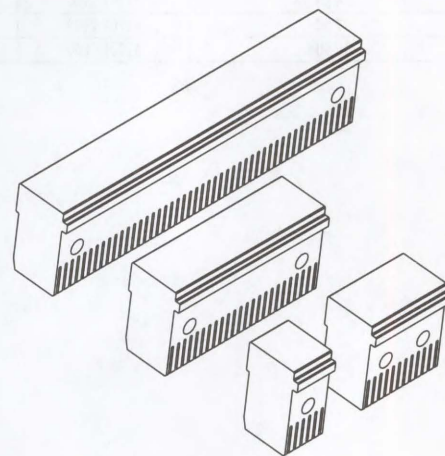
## ORDERING INFORMATION AND DIMENSIONS

| Description           | Length          | Order No.  | Product No. |
|-----------------------|-----------------|------------|-------------|
| 4 by 6 (24 circuit)   | 12.00mm (.480)  | 62202-9541 | 54473       |
| 5 by 6 (30 circuit)   | 12.00mm (.480)  | 62201-9505 | 54884       |
| 4 by 12 (48 circuit)  | 24.00mm (.940)  | 62201-9542 | 54473       |
| 5 by 12 (60 circuit)  | 24.00mm (.940)  | 62201-9506 | 54884       |
| 4 by 24 (96 circuit)  | 48.00mm (1.890) | 62201-9543 | 54473       |
| 5 by 24 (120 circuit) | 48.00mm (1.890) | 62201-9507 | 54884       |
| 4 by 48 (192 circuit) | 96.00mm (3.780) | 62201-9544 | 54473       |
| 5 by 48 (240 circuit) | 96.00mm (3.780) | 62201-9508 | 54884       |



**Application Tooling**  
**MFB™ (Futurebus+)**

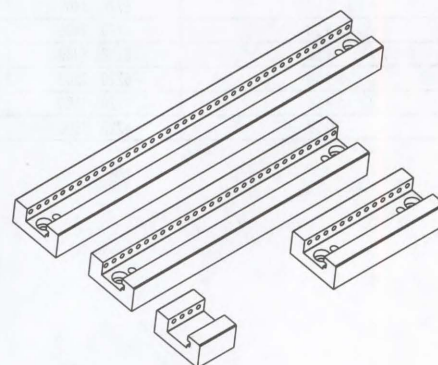
## Header Insertion Modules



## ORDERING INFORMATION AND DIMENSIONS

| Description      | Length           | Order No.  |
|------------------|------------------|------------|
| 60 circuit max.  | 24.00mm (.940)   | 62201-9501 |
| 180 circuit max. | 72.00mm (2.830)  | 62201-9502 |
| 390 circuit max. | 156.00mm (6.140) | 62201-9503 |
| 540 circuit max. | 216.00mm (8.500) | 62201-9504 |

## Module Holders



Backplane Connector Systems

J

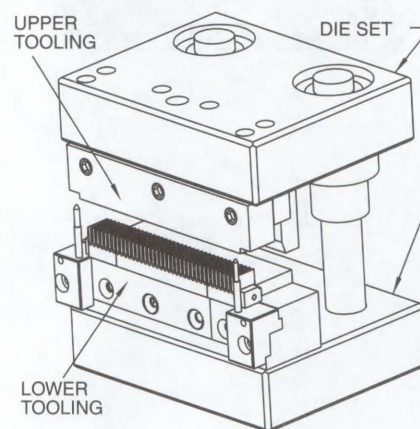


Preferred Version In the US

**molex®** Application Tooling  
**Omnigrid®**

**Female Connector  
Complete Assembly**

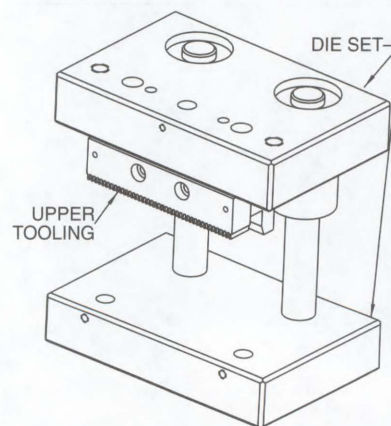
| Description | Order No.  | Product No.         |
|-------------|------------|---------------------|
| 1 SU        | 62201-2000 | 85100, 85150        |
| 2 SU        | 62201-2100 | 85102, 85152        |
| 2.3 SU      | 62201-2200 | 85301               |
| 4 SU        | 62201-2300 | 85104, 85124, 85154 |
| 5.4 SU      | 62201-2400 | 85301               |
| 9 SU        | 62201-2500 | 85106, 85126, 85156 |
| 10 SU       | 62201-2600 | 85108, 85158        |



ORDERING INFORMATION AND DIMENSIONS

| Description | Order No.  | Product No.         |
|-------------|------------|---------------------|
| 1 SU        | 62201-3400 | 85100, 85150        |
| 2 SU        | 62201-3400 | 85102, 85152        |
| 2.3 SU      | 62201-3400 | 85301               |
| 4 SU        | 62201-3400 | 85104, 85124, 85154 |
| 5.4 SU      | 62201-3500 | 85301               |
| 9 SU        | 62201-3500 | 85106, 85126, 85156 |
| 10 SU       | 62201-3500 | 85108, 85158        |

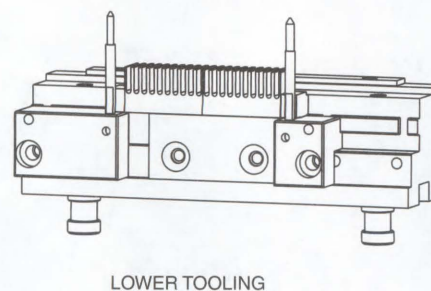
**Female Connector  
Upper Tooling Only**



ORDERING INFORMATION AND DIMENSIONS

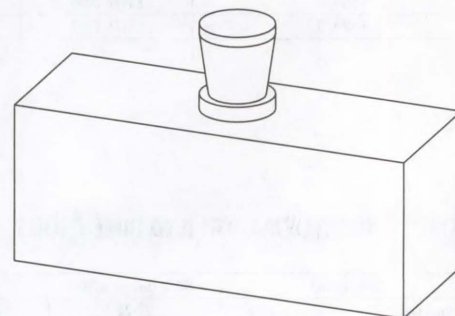
| Description | Order No.  | Product No.         |
|-------------|------------|---------------------|
| 1 SU        | 62201-2700 | 85100, 85150        |
| 2 SU        | 62201-2800 | 85102, 85152        |
| 2.3 SU      | 62201-2900 | 85301               |
| 4 SU        | 62201-3000 | 85104, 85124, 85154 |
| 5.4 SU      | 62201-3100 | 85301               |
| 9 SU        | 62201-3200 | 85106, 85126, 85156 |
| 10 SU       | 62201-3300 | 85108, 85158        |

**Female Connector  
Lower Tooling Only**



| Description         | Order No.  | Product No. |
|---------------------|------------|-------------|
| 4 SU by 22mm high   | 85170-0001 | 85171       |
| 4 SU by 18.5mm high | 85170-0002 | 85171       |
| 2 SU by 22mm high   | 85170-0003 | 85171       |
| 2 SU by 18.5mm high | 85170-0004 | 85171       |
| 1 SU by 22mm high   | 85170-0005 | 85171       |
| 1 SU by 18.5mm high | 62201-6400 |             |

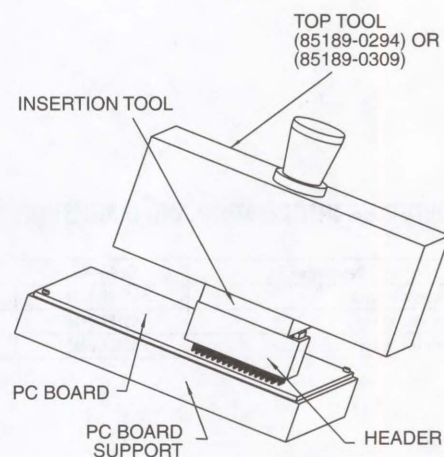
## Vertical Female Connector Tooling



## ORDERING INFORMATION AND DIMENSIONS

| Description | Order No.  | Product No.         |
|-------------|------------|---------------------|
| 1 SU        | 85189-0294 | 85101, 85151        |
| 2 SU        | 85189-0294 | 85103, 85153        |
| 2.3 SU      | 85189-0294 |                     |
| 4 SU        | 85189-0294 | 85105, 85125, 85155 |
| 5.4 SU      | 85189-0309 |                     |
| 9 SU        | 85189-0309 | 85107, 85127, 85157 |
| 10 SU       | 85189-0309 | 85109, 85159        |

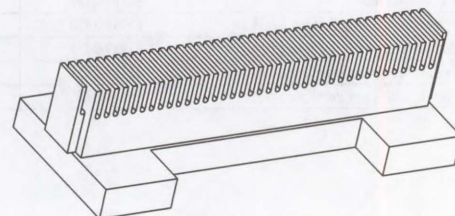
## Male Connector Header Top Tool



## ORDERING INFORMATION AND DIMENSIONS

| Description | Order No.  | Product No.         |
|-------------|------------|---------------------|
| 1 SU        | 85189-0206 | 85101, 85151        |
| 2 SU        | 85189-0218 | 85103, 85153        |
| 2.3 SU      | 85189-0256 |                     |
| 4 SU        | 85189-0220 | 85105, 85125, 85155 |
| 5.4 SU      | 85189-0268 |                     |
| 9 SU        | 85189-0232 | 85107, 85127, 85157 |
| 10 SU       | 85189-0244 | 85109, 85159        |

## Male Connector Header Press Tool





## Preferred Version In the US

| Header Size     | Order No.  | Product No. |
|-----------------|------------|-------------|
| 1 SU standard   | 85178-0000 | 88117       |
| 2 SU standard   | 85178-0001 | 88117       |
| 4 SU standard   | 85178-0002 | 88117       |
| 5.4 SU standard | 85178-0003 | 88117       |
| 1 SU I/O        | 85178-0004 |             |
| 2 SU I/O        | 85178-0005 |             |
| 4 SU I/O        | 85178-0006 |             |
| 5.4 SU I/O      | 85178-0007 |             |

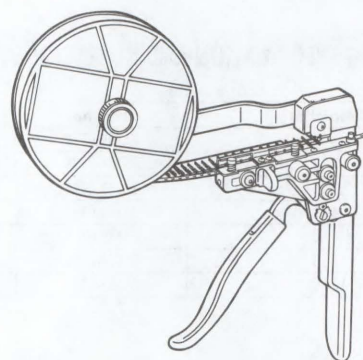
**molex®** Application Tooling  
Omnigrid®

**Right Angle Header  
Complete Die Set  
Press Tooling**

## ORDERING INFORMATION AND DIMENSIONS

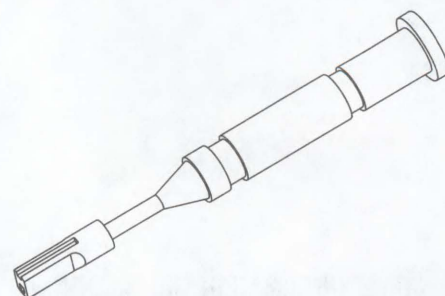
| Description               | Wire Gauge AWG | Order No.  | Product No. |
|---------------------------|----------------|------------|-------------|
| Hand tool                 | 22-26          | 69008-1051 | 85311       |
| Hand tool                 | 26-30          | 69008-1050 | 85311       |
| Insertion/Extraction Tool |                | 85189-0634 | 85311       |
| Mini-Mac applicator       | 22-26          | 69037-1093 | 85311       |
| Mini-Mac applicator       | 26-30          | 69037-1094 | 85311       |

## Crimp Tools



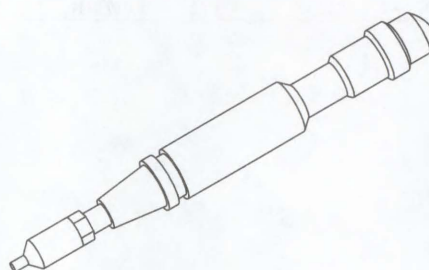
## ORDERING INFORMATION AND DIMENSIONS

| Description                       | Order No.  | Product No. |
|-----------------------------------|------------|-------------|
| Pin insertion tool                | 85189-0402 | 85189       |
| Pin removal tool                  | 85189-0426 | 85189       |
| Male coding key installation tool | 85189-0763 | 85323       |

Repair Tools for  
Male Connector

## ORDERING INFORMATION AND DIMENSIONS

| Description                         | Order No.  | Product No. |
|-------------------------------------|------------|-------------|
| Pin removal tool                    | 85189-0529 | 85189       |
| Peg removal punch, 2.40mm (.094")   | 85999-2320 | 85189       |
| Peg removal punch, 1.80mm (.071")   | 85999-2321 | 85189       |
| Female coding box installation tool | 85189-0751 | 85323       |
| Female coding key installation tool | 85189-0775 | 85323       |

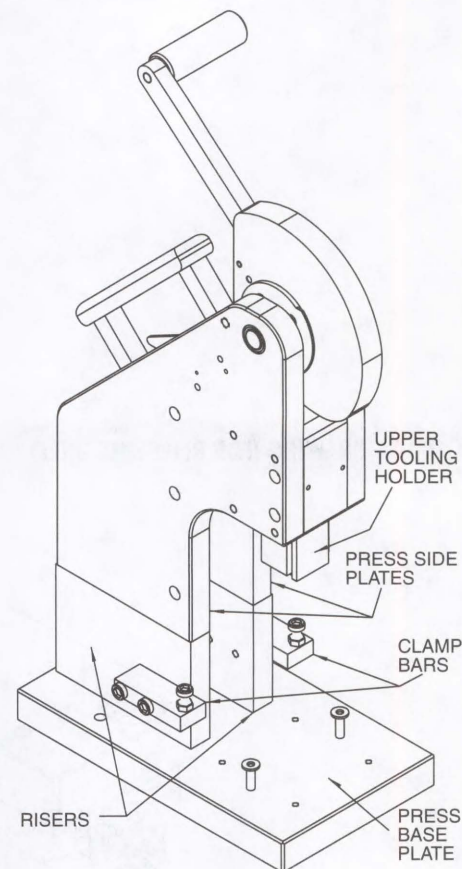
Repair Tools for  
Female Connectors

## Preferred Version in the US

| Description                                                | Order No.  |
|------------------------------------------------------------|------------|
| Molex standard manual press                                | 11-31-6356 |
| Molex standard manual press with Omnigrid modification kit | 62200-6100 |
| Omnigrid modification kit for Molex standard manual press  | 62200-7500 |
| 1 SU die set for Molex standard manual press               | 85189-0000 |
| 2 SU die set for Molex standard manual press               | 85189-0012 |
| 4 SU die set for Molex standard manual press               | 85189-0024 |
| 2.3 SU die set for Molex standard manual press             | 85189-0050 |

**molex®** Application Tooling  
**Omnigrid®**

## Molex Manual Press, Modification Kit and Die Sets



Backplane Connector Systems

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## ORDERING INFORMATION AND DIMENSIONS

| Description      | Order No.  | Product No. |
|------------------|------------|-------------|
| Single-turn tool | 85189-0426 | 85311       |
| Multi-turn tool  | 85189-0438 | 85311       |

## Rear I/O Shroud Tools



Preferred Version in Europe—Not Available in the US



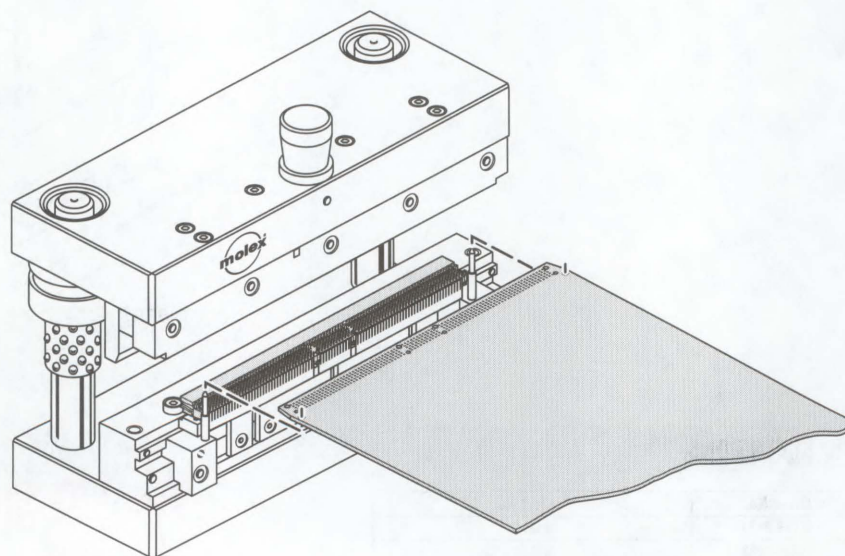
# Application Tooling Omnigrid® Press Tool Female PCB Connectors

85189

## Features and Benefits

- Press tools for 1 SU through 10 SU
- Complete die set minimizes set-up and improves quality
- Location pins orient board precisely to connector
- Upside down operation makes operator control easy
- Modular inserts for future-proof investments
- Precision ball cage columns for planar force distribution
- Adapts any press up to 4 tons (4 SU) or 7 tons (10 SU)

## CATALOG DRAWING (FOR REFERENCE ONLY)



## FEMALE APPLICATION TOOLING

| Description    | Order No.                        |                                  |
|----------------|----------------------------------|----------------------------------|
|                | Complete application tooling kit | Comfort application tooling kit  |
| 1 SU           | 85189-0000                       |                                  |
| 2 SU           | 85189-0012                       |                                  |
| 4 SU           | 85189-0024                       |                                  |
| 4 SU + 2 Power | 85189-0610                       |                                  |
| 4 SU + 4 Power | 85189-0622                       |                                  |
| 9 SU           | 85189-0036                       | Scorecard 4 x 2 SU<br>85189-0543 |
| 9 SU + 2 Power | 85189-0608                       | 85189-0593                       |
| 10 SU          | 85189-0048                       | 85189-0133                       |

## INSERTS FOR LOCATOR PIN HOLE

| Description                | Order No.  |
|----------------------------|------------|
| Locator pin PCB 2.0mm dia. | 85919-0529 |
| Locator pin PCB 2.5mm dia. | 85919-0025 |

## REPAIR TOOLS FOR FEMALE EXTRACTION

| Description             | Order No.  |
|-------------------------|------------|
| Contact extraction tool | 85189-0529 |
| Punch 1,8 dia.          | 85999-2321 |
| Punch 2,4 dia.          | 85999-2320 |

Preferred Version in Europe—Not Available in the US



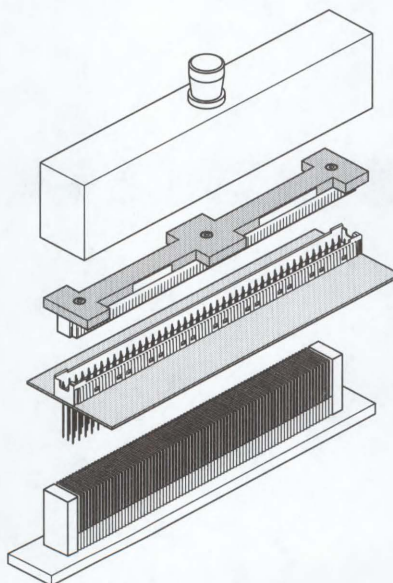
# Application Tooling Omnigrid® Press Tool Male Backplane Connectors

85189

## Features and Benefits

- Press tools for 1 SU thru 10 SU, bottom parts 4 and 10 SU
- Separate top tool with handle makes operator's work easy
- No special tools for power contacts necessary
- Adapts any press up to 4 tons (4 SU) or 10 tons (10 SU)

## CATALOG DRAWING (FOR REFERENCE ONLY)



## MALE APPLICATION TOOLING

| Description        | Order No.  |            |                             |                           |            |
|--------------------|------------|------------|-----------------------------|---------------------------|------------|
|                    | 1 SU       | 2 SU       | 4 SU or<br>4 SU + 2/4 power | 9 SU or<br>9 SU + 2 power | 10 SU      |
| Top mounting plate |            | 85189-0294 |                             | 85189-0309                |            |
| Upper comb         | 85189-0206 | 85189-0218 | 85189-0220                  | 85189-0232                | 85189-0244 |
| Lower comb         |            | 85189-0189 |                             | 85189-0191                |            |

## REPAIR TOOLS FOR MALE EXTRACTION

| Description         | Order No.  |
|---------------------|------------|
| Pin insertion tool  | 85189-0402 |
| Pin extraction tool | 85189-0414 |

Backplane Connector Systems

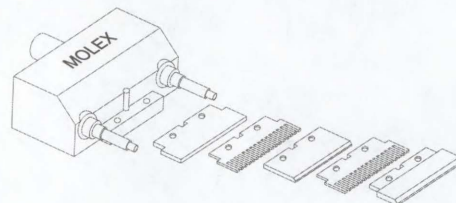
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**ORDERING INFORMATION**

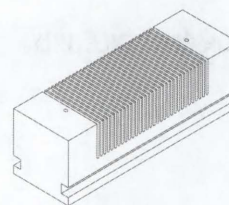
| Description                | Order No.  |
|----------------------------|------------|
| Press Tool Q/2, 32 Circuit | 85089-1043 |
| Press Tool R/2, 48 Circuit | 85089-1055 |
| Press Tool R, 96 Circuit   | 85089-1079 |
| Press Tool R+, 128 Circuit | 85089-1081 |
| Press Tool R, 9 Circuit    | 85089-0490 |

## Manual Male Press Tools for DIN 41612 Connectors

**ORDERING INFORMATION**

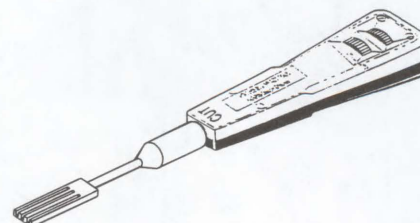
| Description            | Order No.  |
|------------------------|------------|
| Support 2, 54 Steel    | 85089-1093 |
| Support 2, 54 Aluminum | 85089-0139 |

## Manual Support Tools for DIN 41612 Connectors

**ORDERING INFORMATION**

| Description                  | Order No.  |
|------------------------------|------------|
| Handle (No Tooling)          | 62100-1500 |
| Insertion Tip (Needs Handle) | 62100-1600 |
| Removal Tip (Needs Handle)   | 62100-1700 |
| Contact Removal Tool         | 85089-0323 |

## Manual Repair Tools for DIN 41612 Connectors

**ORDERING INFORMATION**

| Description             | Order No.  |
|-------------------------|------------|
| Press Adapter Kit       | 62200-8000 |
| Press with Adapter Kit* | 62200-8100 |
| Standard Manual Press   | 11-31-6356 |

\* 62200-8100 requires support 85089-1093, 0139 or customer supplied board support

## Manual Standard Presses for DIN 41612 Connectors

