DATABOOK

1993 DEVICES

Systems Logic

Imaging

Storage

WESTERN DIGITAL

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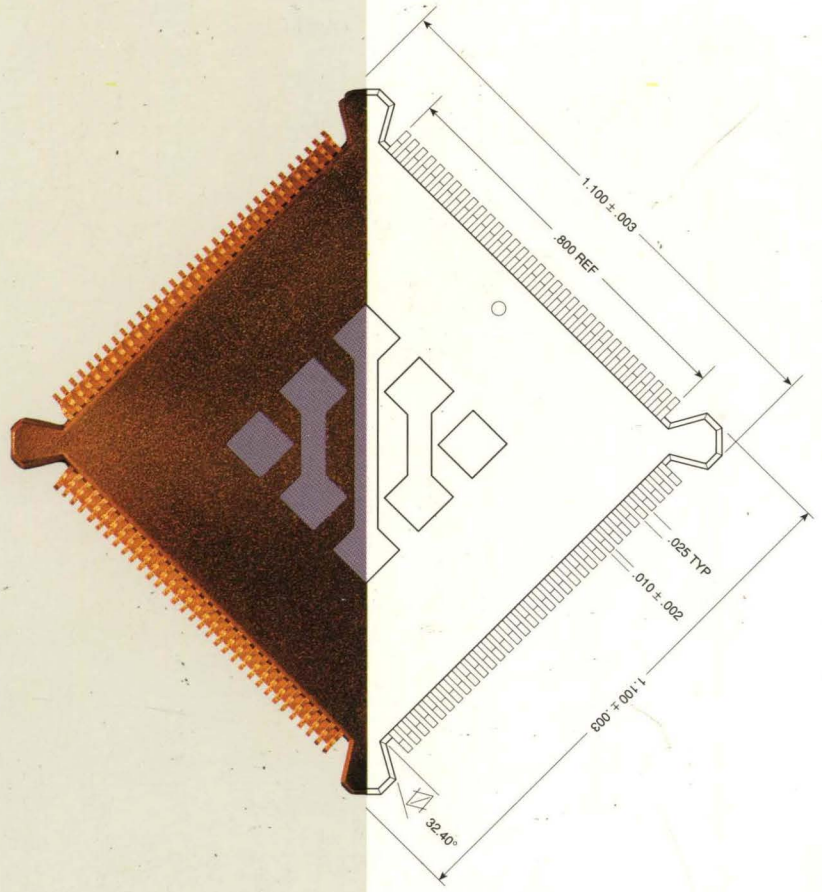

WESTERN DIGITAL

D A T A B O O K

1992 DEVICES

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Storage

Western Digital Corporation
Western Digital Plaza, 8105 Irvine Center Drive, Irvine, CA 92718

For Service and Literature, call:
714.932.4900

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Data Sheet Status Definitions

Status in Data Sheet Footer	Status	Definition
ADVANCED INFORMATION AND DATE	Preliminary Information	This data sheet contains preliminary information. Western Digital Corporation reserves the right to change specifications at any time without notice in order to improve overall design and operation.
DATE	Released Document	This data sheet contains final specifications. The information has been updated and published as of the date indicated. Western Digital Corporation reserves the right to change specifications at any time without notice in order to improve overall design and operation.

Western Digital Quality
Customer Satisfaction Through Relentless Improvement

From its manufacturing, assembly and test facilities throughout the world, Western Digital is committed to producing the highest quality semiconductor, board-level and intelligent disk drive products available.

The company's goal is to continually improve the reliability of our products through a variety of quality programs, using the most advanced evaluation and analysis tools, and a vast set of qualification and testing procedures. Accordingly, Western Digital can ensure that the quality and reliability of its designs are translated into products of similar quality for its OEM and end user customers.

The company implements its "Continuous Process Improvement" program for every chip, board and drive product, constantly working to reduce cycle time, while striving for superior customer service and technical support.

As one of the industry's most vertically-integrated manufacturers, Western Digital controls the entire manufacturing process, from design to final test. Ultimately, this ability allows us to yield a higher quality, more reliable product with greater functionality.

This vertical integration, our Interarchitecture approach and our unique set of worldwide resources – including a state-of-the-art, submicron wafer fabrication facility and a fully-robotic drive assembly plant – greatly contribute to our ability to design and build quality into our products.

Western Digital's Interarchitecture

Western Digital designs and manufactures a full range of VLSI products that control the fundamental functions of computing: storage, video, data communications, and systems logic. The coordinated design and manufacturing of our products is a process we term Interarchitecture™.

As a business approach, Interarchitecture means we consistently communicate with our customers about trends, technology and market requirements, then design our products and services to meet their needs.

We develop our Interarchitecture products together; the designer of the core logic works with the designer of the video and the intelligent disk drive. By co-designing across all our product lines, we provide full functionality in fewer chips and increase overall product quality, reliability and compatibility.

In practice, Western Digital's Interarchitecture process gets customers to market faster, more cost-effectively with a higher-performance product.

Interarchitecture Solutions For Desktop Systems

Components:

WD76C10A single-chip system controller

- 80286, 80C286, 80386SX interface
- .9 micron CMOS design
- 16, 20, 25, and 33 MHz operation
- 32 Mbytes of on-board DRAM
- integrated ISA DMA/INT timers

WD7855 single-chip system controller

- 80386SX interface
- .9 micron CMOS design
- 16, 20, 25, and 33 MHz operation
- comprehensive power management
- high-speed local video bus (VLBI)
- system management interrupt (SMI)

WD76C20 single-chip peripheral controller

- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA modes
- chip select logic generation

WD76C30 single-chip I/O controller

- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexer
- 1.25 micron CMOS design
- FIFO port operation

WD7615 desktop buffer manager

- ISA bus buffers with 24 mA drive, interrupt multiplexer, keyboard/mouse interrupt logic, fast A20 gate logic
- enables "super I/O" generic devices
- 1.0 micron CMOS design

WD90C31A single chip VGA controller

- fully integrated VGA video control
- .9 micron CMOS design
- optimized for Microsoft Windows
- true hardware cursor and bit block transfer
- 1024 by 768 by 256 colors at 72 Hz refresh rate (non-interlaced) for superior resolution

WD90C56 video local bus interface (VLBI)

- interfaces directly with the WD90C3X controllers to increase the data transfer speed from the CPU to the VGA subsystem
- compatible with both cache and non-cache based 80386DX or 80486SX/DX systems

Western Digital Interachitecture Intelligent Drives*

Caviar™ Drives:

- low profile, one-inch, 85, 125, 170, 212, and 340 Mbyte formatted capacities
- CacheFlow™, adaptive segmented cache
- automatic head parking, advanced defect management and embedded sector servo control
- guaranteed compatibility

* For more information on Western Digital's intelligent drives, call 1.714.932.4900.

Interarchitecture Solutions For Portable Systems

Components:

WD76C10ALP single-chip system controller

- 80286, 80C286, 80386SX interface
- extensive set of power management features, CPU sleep and auto speed switch modes
- .9 micron CMOS design
- 16, 20, 25, and 33 MHz operation
- 32 Mbytes of on-board DRAM
- integrated ISA DMA/INT timers

WD7855 single-chip system controller

- 80386SX interface
- .9 micron CMOS design
- 16, 20, 25, and 33 MHz operation
- comprehensive power management
- high-speed local video bus (VLBI)
- system management interrupt (SMI)

WD76C20 single-chip peripheral controller

- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA modes
- chip select logic generation

WD76C30 single-chip I/O controller

- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexer
- 1.25 micron CMOS design
- FIFO port operation

WD90C20, WD90C22, and WD90C20A single-chip video

- full VGA video support with laptop RAMDAC
- .9 micron CMOS design (WD90C20A)
- WD90C20/20A supports 32-color, gray-scale palette
- WD90C22 supports 64-color, gray-scale palette and delivers true hardware vertical expansion

WD90C55 VGA LCD interface

- directly interfaces with the WD90C2X series of VGA laptop controllers to expand support for the full range of color LCD panels
- power-down mode

Western Digital Interarchitecture Intelligent Drives*

Caviar™ Lite Drives:

- 2.5-inch, 170 Mbyte formatted capacities, sub-16 milliseconds
- 32 Kbyte buffer, CacheFlow, adaptive multi-segmented read cache and write cache
- low power modes of operation
- Automatic head parking, advanced defect management and embedded sector servo control

Caviar™ UltraLite Drive:

- 1.8-inch, 42 Mbyte formatted capacity, sub-19 milliseconds
- PCMCIA-ATA compatible
- 32 Kbyte buffer, CacheFlow, adaptive segmented cache
- Automatic head parking, advanced defect management and embedded sector servo control

* For more information on Western Digital's intelligent drives, call 1.714.932.4900.

Interarchitecture Solutions For Low Voltage (3.3V) Systems

Components:

WD7855LV single-chip system controller

- 3.3 volt operation or mixed 5.0/3.3 volt
- 80386SXL or 80486SLC interface
- .9 micron CMOS design
- 16, 20, 25, and 33 MHz operation
- comprehensive power management
- high-speed local video bus (VLBI)
- system management interrupt (SMI)

WD76C20ALV single-chip peripheral controller

- 3.3/5.0 volt level translation
- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA modes
- chip select logic generation

WD76C30ALV single-chip I/O controller

- 3.3/5.0 volt level translation
- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexer
- 1.25 micron CMOS design
- FIFO port operation

WD7625LV ISA portable buffer manager

- 3.3/5.0 volt level translation
- 1.25 micron CMOS design
- system address latches and buffers, two IDE data buffers, three system data buffers
- suspend/resume logic, DRQ/IRQ multiplexing

WD90C26A single-chip video

- 3.3 volt operation
- simultaneous CRT and LCD flat panel display with true 256 color support
- .9 micron CMOS design
- enhanced power management functions
- TFT built-in support

WD90C55 VGA LCD interface

- directly interfaces with the WD90C2X series of VGA laptop controllers to expand support for the full range of color LCD panels
- power-down mode

Western Digital Interarchitecture Intelligent Drives*

Caviar™ Lite Drives:

- 2.5-inch, 170 Mbyte formatted capacities, sub-16 milliseconds
- 32 Kbyte buffer, CacheFlow, adaptive multi-segmented read cache and write cache
- low power modes of operation
- Automatic head parking, advanced defect management and embedded sector servo control

Caviar™ UltraLite Drive:

- 1.8-inch, 42 Mbyte formatted capacity, sub-19 milliseconds
- PCMCIA-ATA compatible
- 32 Kbyte buffer, CacheFlow, adaptive segmented cache
- Automatic head parking, advanced defect management and embedded sector servo control

* For more information on Western Digital's intelligent drives, call 1.714.932.4900.