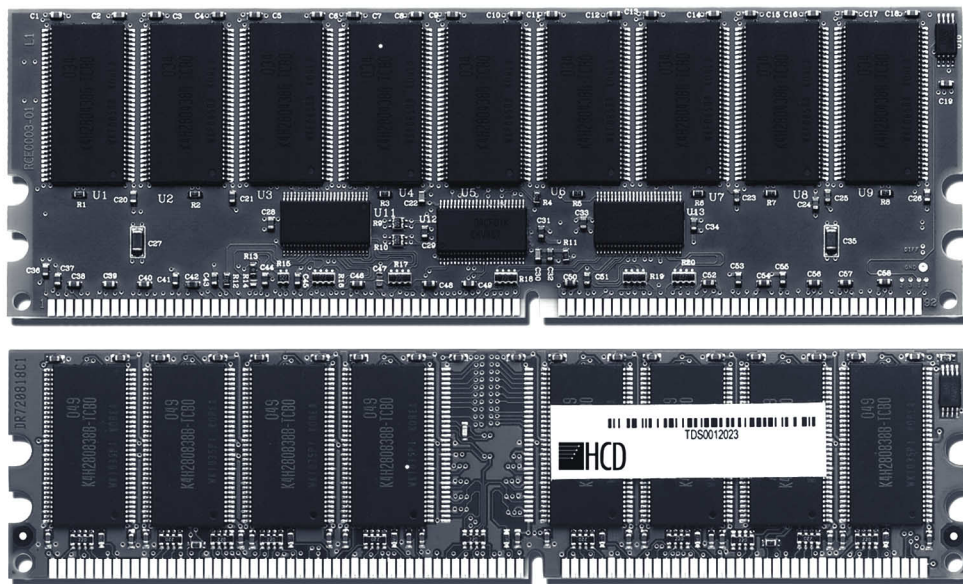




HCD DDR DIMM Products with x4, x8 and x16 Devices

*modular subsystems and
high frequency solutions*



*DDR DIMM modules (registered & unbuffered)
Modules not shown actual size*

Product Overview

FEATURES

*High Speed PC1600 and PC2100 DDR
Modular Subsystems*

JEDEC compliant

Two data accesses per clock cycle

Auto refresh and self refresh modes

Serial Presence Detect (SPD)

$V_{DD} = +2.5V \pm 0.2V$

Addressing high frequency module requirements, HCD offers a complete line of JEDEC compliant DDR DIMM and SO-DIMM products in both PC1600 and PC2100 speed grades. In a system with a 64-bit wide memory bus, DDR modules can reach a peak bandwidth of 2.13GB per second at 266MHz as compared to mainstream PC133 (SDRAM) modules, which offer a performance of 1.06GB per second.

HCD's DDR products are well suited for a broad range of applications, which include the server and network markets where the high memory capacity and speed are necessary to meet the performance demands of these products. The performance improvement achieved with DDR technology helps to ensure that memory stays in step with the constantly increasing performance of microprocessors.

Incorporating superior design and manufacturing control, HCD's products are highly reliable with proven system compatibility. In line with HCD's strong commitment to quality, all HCD modules are 100% tested to ensure performance and reliability.

HCD's comprehensive line of high performance DDR products comes in a variety of configurations and form factors to support today's diverse market driven requirements. HCD continuously adds to and improves upon its current line to provide innovative solutions for the ever-changing, competitive landscape.

HCD's DDR products are available in both Registered and Unbuffered configurations in either PC1600 or PC2100 speed grades. Module densities range from 128MB up to 1GB, using x4, x8 or x16 devices.

HCD DDR DIMM Product Guide

**See Ordering Information for part numbering guide

PRODUCT	E/N	Speed	Capacity	Model Number
Unbuffered DDR DIMM				
16Mx8 chip / 16Mx64 DIMM	Non	PC2100	128MB	HD41808U4SA
16Mx8 chip / 32Mx64 DIMM	Non	PC2100	256MB	HD51816U4SA
Registered DDR DIMM				
32Mx4 chip / 32Mx72 DIMM	ECC	PC2100	256MB	HD52418R4SA
32Mx4 chip / 32Mx72 DIMM	ECC	PC2100	256MB	HD52418R4S2
32Mx8 chip / 64Mx72 DIMM	ECC	PC2100	512MB	HD62818R8SA
32Mx8 chip / 64Mx72 DIMM	ECC	PC2100	512MB	HD62818R8S2
64Mx4 chip / 128Mx72 DIMM (stacked)	ECC	PC2100	1GB	HD72436R8SA
64Mx4 chip / 128Mx72 DIMM (stacked)	ECC	PC2100	1GB	HD72436R8S2
Unbuffered DDR SO-DIMM				
16Mx16 chip / 16Mx64 SO-DIMM	Non	PC2100	128MB	HE41604U4SA
16Mx16 chip / 16Mx64 SO-DIMM	Non	PC2100	128MB	HE41604U4S2
16Mx16 chip / 16Mx72 SO-DIMM	ECC	PC2100	128MB	HE42604U4SA
16Mx16 chip / 16Mx72 SO-DIMM	ECC	PC2100	128MB	HE42604U4S2

**Other speed-grades and/or configurations available upon request.

ORDERING INFORMATION

DDR Part Numbering System															
Name	Type/Foot Print	Module Address	Module Bus Width	Component Data Width	# of Devices	Register	Refresh/ Internal Bank	Cycle Time	CAS Latency	-	Fab	PCB Design	Device Package	Device Vendor	Device Rev.
H	D = DDR DIMM E = DDR SO-DIMM U = Custom	3 = 8M 4 = 16M 5 = 32M 6 = 64M 7 = 128M	1 = 64 2 = 72	4 = x4 8 = x8 6 = x16 2 = x32	02 = 2 03 = 3 04 = 4 05 = 5 08 = 8 09 = 9 16 = 16 18 = 18 32 = 32 36 = 36	U = Unbuffered R = Registered	<u>Standard</u> 1 = 1K/2bk 2 = 2K/4bk 3 = 2K/2bk 4 = 4K/4bk 5 = 4K/2bk 8 = 8K/4bk 6 = 16K/4bk <u>Low Power</u> A = 1K/2bk B = 2K/4bk C = 2K/2bk D = 4K/4bk E = 4K/2b F = 8K/4bk G = 16K/4bk <u>Self Refresh</u> L = 1K/2bk M = 2K/4bk N = 2K/2bk P = 4K/4bk Q = 4K/2bk R = 8K/4bk	6 = 6ns 166MHz 7 = 7ns 142MHz 8 = 8ns 125MHz A = 10ns 100MHz C = 12ns 83MHz F = 15ns 66MHz G = 7.5ns 133MHz H = CL2=10, CL2.5=7.5 P = PC100 Q = PC133 R = PC1600 S = PC2100	1 = CL1 2 = CL2 3 = CL3 5 = CL2&3 A = CL2.5 B = CL2&2.5		T = TW C = Celes S = Sel	B = IBM H = HCD M = Micron	3 = 300mil TSOP 4 = 400mil TSOP 6 = 600mil TSOP C = CSP	A = NanYa B = IBM F = Infineon K = OKI M = Micron N = NEC S = Samsung T = Toshiba Y = Hy undai	A B C D

For Sales and Distribution in your area, please contact:

HCD, Inc. Headquarters

1267 Borregas Avenue
 Sunnyvale, CA 94089-1308 USA
 p: (408) 743-9700
 f: (408) 743-9701
 standard.mod@hcd21.com

For more information on
 HIGH CONNECTION DENSITY, INC.
 products and development services,
 visit our website at:
www.hcdcorp.com

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High Connection Density, Inc., 1267 Borregas Avenue, Sunnyvale, CA 94089-1308 USA

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