

DDR2 Synchronous Dynamic Ram
MODULE

3D2D4G16UB2343

4Gbit DDR2 SDRam organized as 256Mx16, based on 256Mx8



Main applications:

- Embedded Systems
- Workstations
- Servers
- Super Computers
- Test Systems

Features and Benefits

- JEDEC standard 84 balls
- Vdd=VddQ = +1.8V +/-0.1V
- 4n-bit prefetch architecture
- DLL to align DQ and DQS transition with CK
- 8 internal banks per memory
- Programmable CAS latency
- Posted CAS additive latency
- Write Latency(WL) = Read Latency(RL)-1 t_{ck}
- Programmable burst lengths: 4 or 8
- Adjustable data-output drive strength
- Differential data-strobe
- 64ms, 8,192-cycle refresh
- On-die Termination (ODT)
- Data rate available : 400Mbps (CL3), 533Mbps (CL4) and 667Mbps (CL5)
- Commercial, industrial and military temperature range

General description

3D PLUS offers a new 4Gbit DDR2 SDRAM cube compatible with the JEDEC standard footprint.

This cube embeds 2 chips with a capacity of 2Gb (256Mx8) each.

Thanks to its unique x16 bits data bus, this module allows savings 50% PWB area against any other solution.

Our products are available at 200, 267 and 333 clock speed which is equivalent to 400, 533 and 667 Mbps in Commercial (0°C / 70°C), Industrial (-40°C / +85°C) and Military (-55°C +125°C) temperature range.

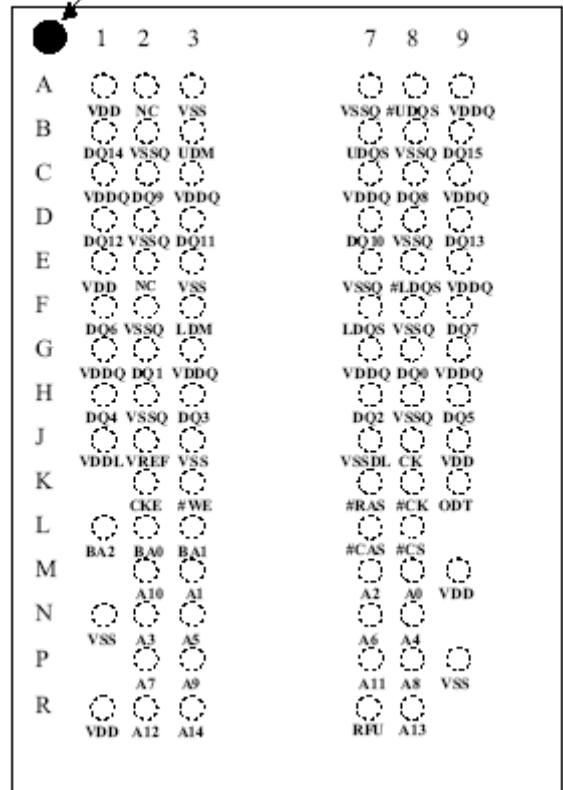
Thanks to the high density patented technology and the cold manufacturing process the memories are embedded in a small form factor cube without compromising electrical or thermal performance.

This device is ideal for high density memory applications that require high speed transfer and compatibility with standards servers and networking equipment.

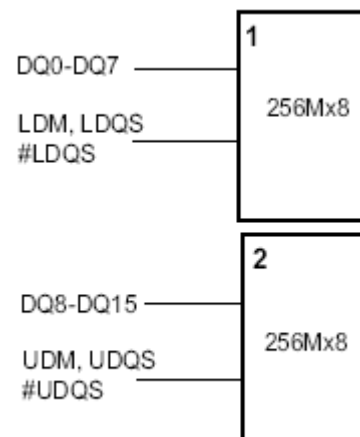
Pin Assignment (Top View)

FBGA 84 (Pitch : 0.80 mm)

Pin Indicator



FUNCTIONAL Block Diagram

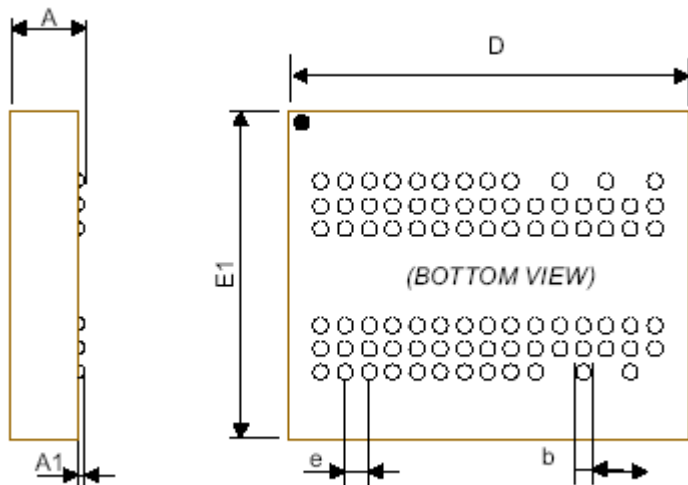


(All other signals are common to the devices)

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	Min	Max
A	3.30	3.55
A1	0.17	0.20
D	14.6	14.80
E1	12.10	12.30
b	0.40	
e	0.80	
Dimensions (mm)		

DC OPERATING CONDITIONS

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V _{DD}	1.7	1.9	V
I/O Supply Voltage	V _{DDQ}	1.7	1.9	V
Supply Voltage	V _{DDL}	1.7	1.9	V
I/O reference Voltage	V _{REF}	0.49xV _{DDQ}	0.51xV _{DDQ}	V
Input High Voltage	V _{IH} (DC)	V _{REF} +0.125	V _{REF} +0.3	V
Input Low Voltage	V _{IL} (DC)	-0.3	V _{REF} -0.125	V

Note :

Permanent device damage may occur if "ABSOLUTE MAXIMUM RATINGS" are exceeded.
Functional operation should be restricted to recommended operating condition.
Exposure to higher than recommended voltage for extended periods of time could affect device reliability

ABSOLUTE MAXIMUM DC RATINGS

Parameter	Symbol	Min	Max	Unit
Voltage on any ball relative to V _{SS}	V _{IN} , V _{OUT}	-0.5	+2.3	V
Storage temperature	T _{STG}	-55	+150	°C

Electrical Characteristics

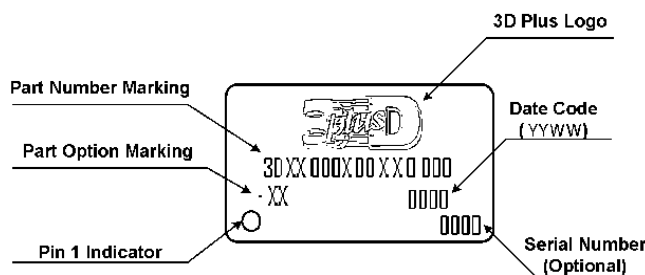
Parameter	Symbol	Value	Unit
Operating Current (one bank active)	I _{DD1}	170	mA
Precharge Power Down Current	I _{DD2P}	25	mA
Room Temp Self Refresh	I _{DD6}	25	mA

Module Marking

3D2D4G16UB2343

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Temperature Range
CN = 0°C ~ +70°C
IB = -40°C ~ +85°C
MB = -55°C ~ +125°C



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