

DDR2 Synchronous Dynamic Ram MODULE

3D2D4G08UB2302

4Gbit DDR2 SDRam organized as 512Mx8, based on 256Mx8



Target application

- Embedded Systems
- Workstations
- Server
- Super computers
- Test systems

Features and Benefits

- JEDEC-standard 63 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 or Military temperature range.

General description

3D Plus offers a new 4Gbit DDR2 SDRAM cube with a compatible JEDEC standard package.

This cube embeds 2 chips with a capacity of 2Gb (256Mbx8) each. They can be addressed with separates CS, CKE and ODT. Our products are available at 200, 267and 333 clock speed which is equivalent to 400, 533 and 667 Mbps in Commercial, Industrial or Military 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.

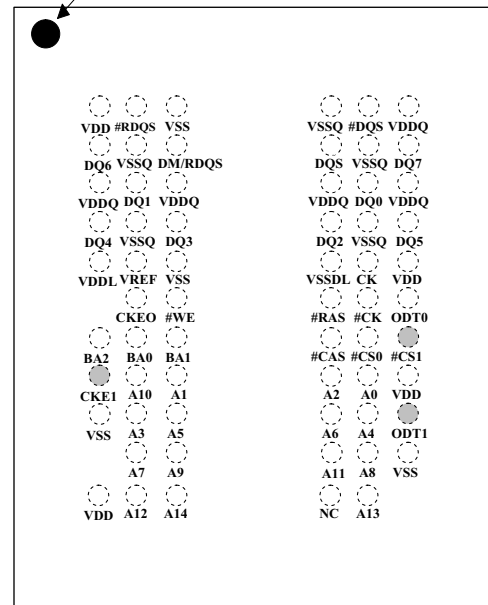
This device is ideal for high density memory applications that require high speed transfer and compatibility with standards servers and networking equipment.

Pin Assignment

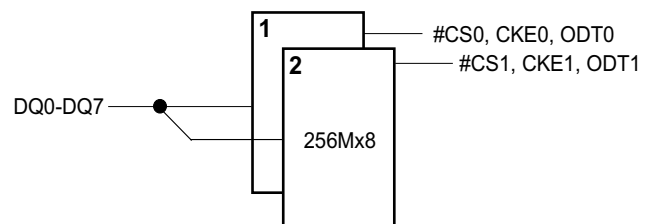
FBGA 63 (Pitch 0.80mm)

Top View
(Viewed by Transparency)

Pin Indicator



FUNCTIONAL BLOCK DIAGRAM



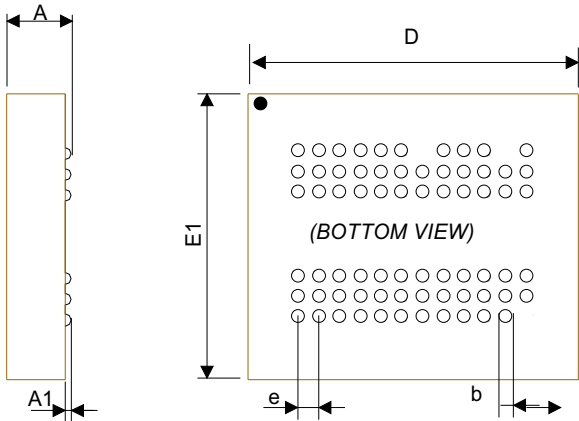
(All other signals are common to the two memories)

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Mechanical Drawing



	Min	Max
A	3.20	3.40
A1	0.17	0.20
D	14.60	14.80
E1	12.10	12.30
b	0.40	
e	0.80	
Dimensions (mm)		
Max. weight : 1.00 gr.		

DC Operating conditions and characteristics

Parameter	Symbol	Min	Max	Unit
Supply Voltage relative to VSS	V _{DD}	1.7	1.9	V
Supply voltage relative to VSSQ	V _{DDQ}	1.7	1.9	V
Supply voltage relative to VSSL	V _{DDL}	1.7	1.9	V
I/O Reference Voltage	V _{REF}	0.49xV _{DDQ}	0.51xV _{DDQ}	V
I/O Termination Voltage (syst.)	V _{TT}	V _{REF} -0.04	V _{REF} +0.04	V
Input High (Logic1) Voltage	V _{IH} (DC)	V _{REF} +0.125	V _{DDQ} +0.3	V
Input Low (Logic0) Voltage	V _{IL} (DC)	-0.3	V _{REF} -0.125	V

Absolute maximum ratings

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

DC Characteristics

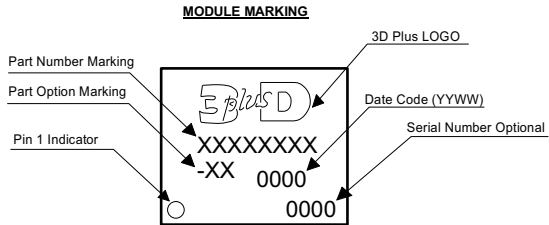
Parameter	Symbol	Value	Unit
Operating current (One bank active)	I _{DD1}	115	mA
Precharge power down current	I _{DD2P}	10	mA
Self refresh current	I _{DD6}	10	mA

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Temperature Range

C = (0°C to +70°C)
I = (-40°C to +85°C)
M = (-55°C to +125°C)

MODULE MARKING



Part Number Marking: XXXXXXXX
 Part Option Marking: -XX
 Pin 1 Indicator: 0000
 3D Plus LOGO: 3D PLUS
 Date Code (YYWW): 0000
 Serial Number Optional: 0000

MAIN SALES OFFICE

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DDR2 Memory Module

CELIA4G8

3D PLUS S.A. reserves the right to change or cancel products or specifications without notice
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