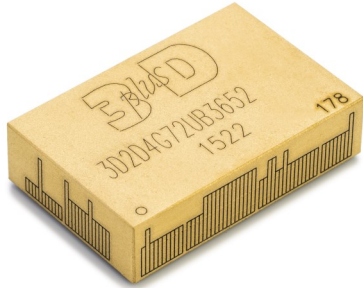


3D2D4G72UB3652



GENERAL DESCRIPTION

The 3D2D4G72UB3652 is a high-speed highly integrated DDR2 Synchronous Dynamic Ram Memory. It is organized with 4 chips of 1Gbit + 1 chip for ECC. It is particularly well suited for use in high reliability, high performance and high density system applications, such as servers or workstations.

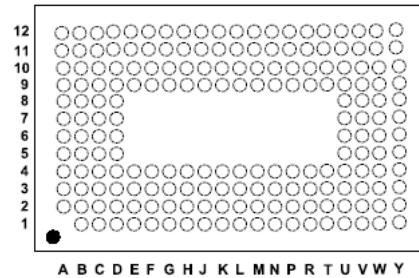
The 3D2D4G72UB3652 is packaged in a 191 balls BGA available with lead-free or leaded balls.

KEY FEATURES

- Organized as 64Mx72
- Supply voltage 1.8V +/- 0.1V
- Jedec standard 1.8V I/O (SSTL_18 compatible)
- Max Data rate = 667 Mbps
- Differential data strobe per byte
- 4n-bit prefetch architecture
- DLL to align DQ and DQS transitions with CK
- 8 internal banks per die for concurrent operation
- Programmable CAS Latency
- Posted CAS Additive Latency
- Write Latency = Read Latency - 1tck
- Programmable Burst Lengths: 4 or 8
- On-Die Termination
- 191 leaded or lead-free balls.
- Available temperature ranges:
 - 0°C to +70°C
 - -40°C to +85°C
 - Specific temperature range can be requested
- Available with screening option for high reliability application (Space, etc...)

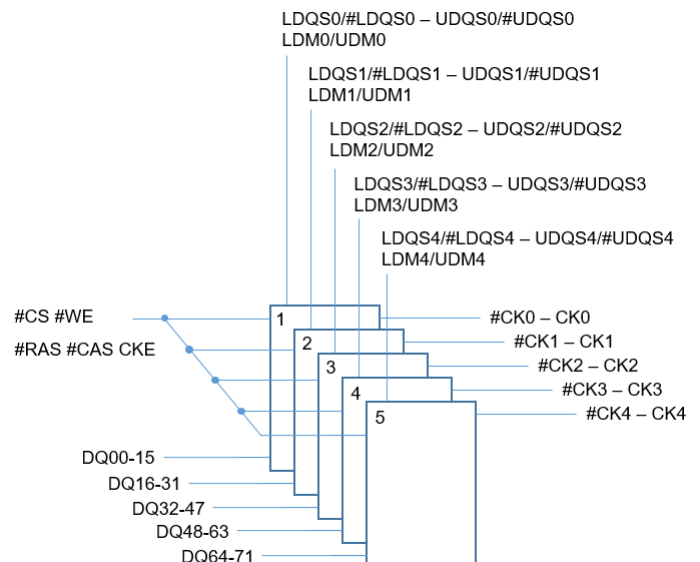
PIN ASSIGNMENT

BGA 191 - 12x20 - Pitch 1.27 mm

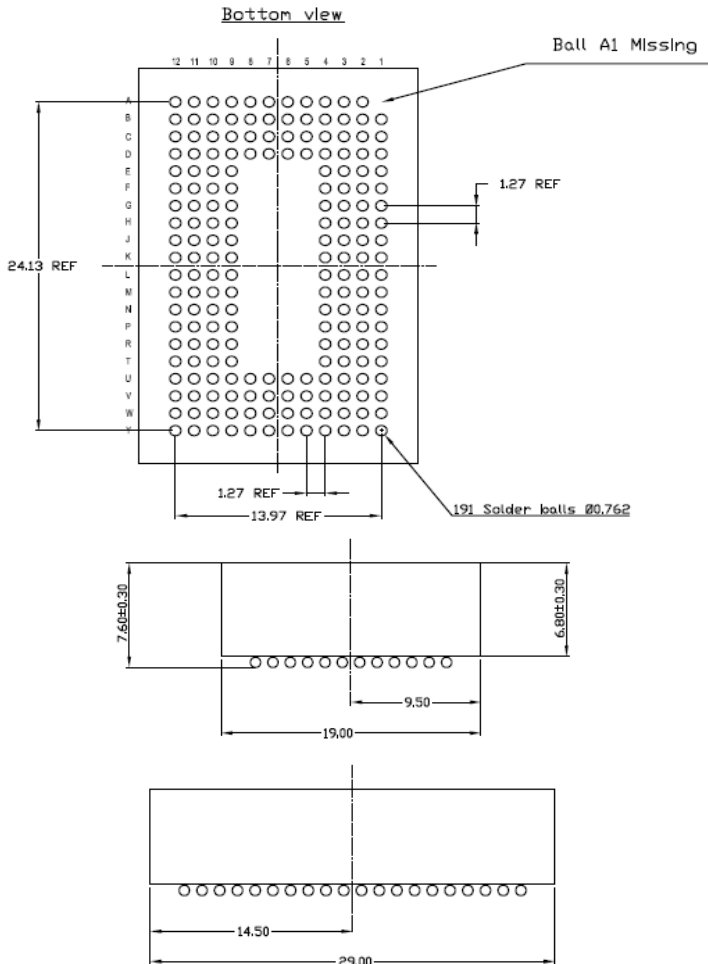


	1	2	3	4	5	6	7	8	9	10	11	12
A		CK3#	UDQS3#	VCC	NC	NC	VREF	DQ35	DQ44	VCC	LDM2	CK2#
B	CK3	DQ58	UDQS3	DQ61	LDQS3#	DQ50	GND	DQ33	DQ41	DQ46	DQ34	CK2
C	NC	UDM3	LDM3	NC	LDQS3	DQ48	DQ53	DQ38	GND	UDM2	LDQS2	DQ32
D	DQ52	DQ51	DQ49	DQ63	DQ56	DQ55	DQ36	DQ43	DQ42	DQ40	LDQS2#	VCC
E	DQ60	GND	DQ59	DQ54	-	-	-	-	VCC	UDQS2	UDQS2#	NC
F	NC	ODT	DQ62	DQ57	-	-	-	-	GND	DQ47	DQ45	DQ39
G	NC	A8	A4	GND	-	-	-	-	NC	DQ37	GND	A13
H	NC	A0	VCC	CS#	-	-	-	-	GND	CAS#	CKE	BA1
J	NC	RAS#	A2	A6	-	-	-	-	VCC	A1	A5	VCC
K	NC	BA2	A11	GND	-	-	-	-	NC	A3	A12	A7
L	NC	A9	A10	GND	-	-	-	-	NC	GND	BA0	WE#
M	CK1#	CK1	UDQS4	UDQS4#	-	-	-	-	CK4#	NC	NC	NC
N	NC	NC	DQ21	DQ23	-	-	-	-	CK4	LDM4	UDM4	GND
P	VCC	NC	DQ29	DQ31	-	-	-	-	NC	NC	DQ14	DQ9
R	LDM1	UDM1	UDQS1#	UDQS1	-	-	-	-	DQ1	DQ12	DQ11	DQ6
T	NC	DQ24	GND	DQ30	-	-	-	-	NC	DQ10	DQ4	VCC
U	DQ26	LDQS1	DQ27	DQ20	LDQS4#	DQ67	GND	UDM0	DQ15	NC	LDM0	DQ3
V	LDQS1#	DQ16	DQ22	DQ69	LDQS4	NC	DQ70	DQ0	LDQS0#	UDQS0#	UDQS0	CK0
W	DQ18	DQ25	DQ19	DQ71	VREF	DQ66	DQ68	DQ5	LDQS0	DQ13	GND	CK0#
Y	VCC	DQ28	DQ17	GND	DQ64	NC	DQ65	GND	DQ2	DQ7	VCC	DQ8

FUNCTIONAL BLOCK DIAGRAM



MECHANICAL DRAWING



DC operating conditions and characteristics

PARAMETER	SYMBOL	MIN	MAX	UNIT
Supply voltage	V_{CC}	1.7	1.9	V
Input high voltage	V_{IH}	$V_{REF}+0.125$	$V_{CC}+0.3$	V
Reference voltage	V_{REF}	$0.49 \times V_{CC}$	$0.51 \times V_{CC}$	V
Input low voltage	V_{IL}	-0.3	$V_{REF}-0.125$	V

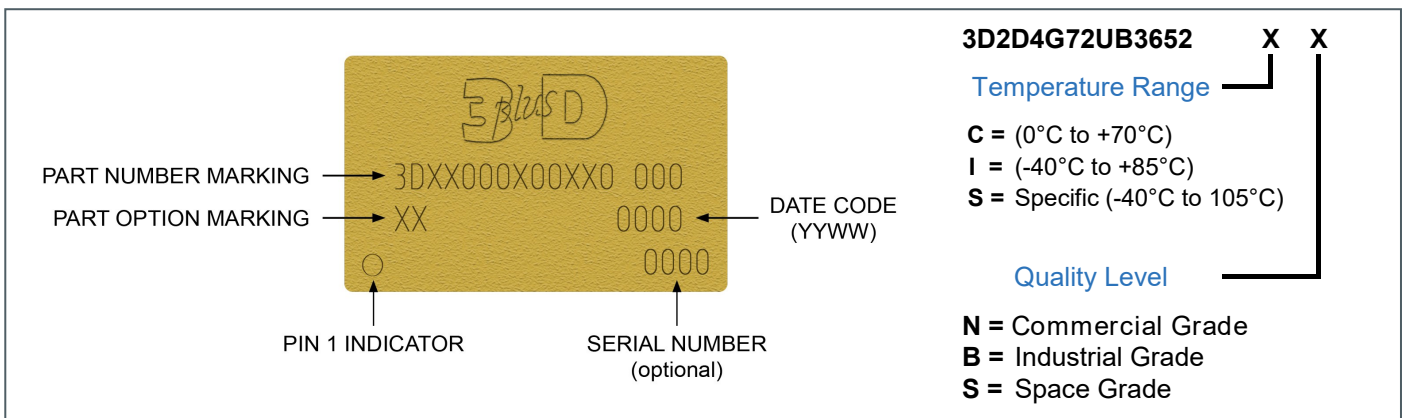
DC Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Operating Current (One bank active)	I_{CC1}	600	mA
Precharge power down current	I_{CC2P}	90	mA
Active fast power-down current	I_{CC3PF}	190	mA

Absolute maximum ratings

PARAMETER	SYMBOL	VALUE	UNIT
Voltage on any pin relative to GND	V_{in}, V_{OUT}	-0.5 ~ +2.3	V
Storage temperature	T_{STG}	-55 ~ +150	°C
Power dissipation	P_D	3	W
Power supply Voltage	V_{CC}	-1.0 to +2.3	V

MODULE MARKING



3D2D4G72UB3652 X X

Temperature Range

C = (0°C to +70°C)
I = (-40°C to +85°C)
S = Specific (-40°C to 105°C)

Quality Level

N = Commercial Grade
B = Industrial Grade
S = Space Grade

PART NUMBER MARKING → 3DXX000X00XX0 000

PART OPTION MARKING → XX

DATE CODE (YYWW) → 0000

SERIAL NUMBER (optional) → 0000

PIN 1 INDICATOR

3D PLUS SALES OFFICES

HEADQUARTERS (FRANCE)	TECHNICAL CENTER (USA)	DISTRIBUTOR
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