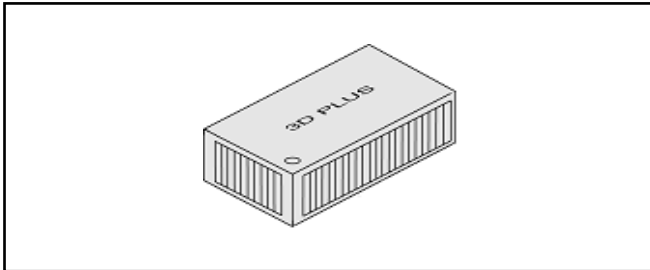


# DDR SDRAM MODULE

**3D1D4G72TB2729**

4Gbit DDR SDRAM organized as 64Mx72, based on 64Mx16

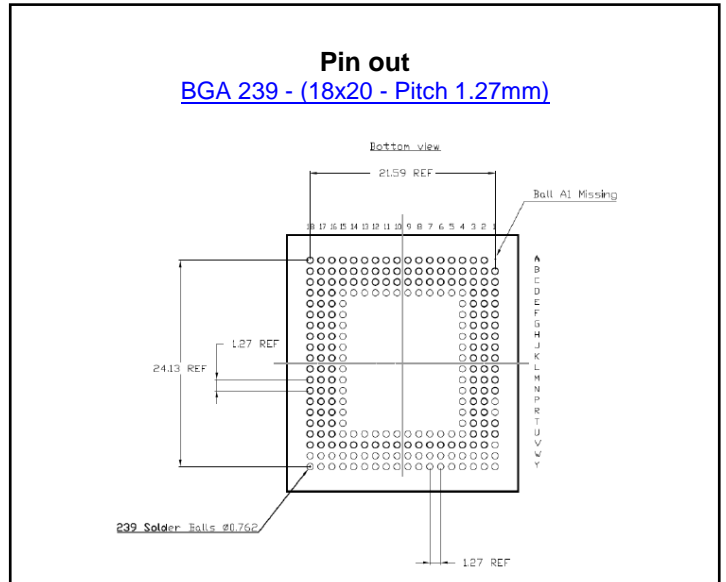


## Features

- Organized as 64Mx72b
- Power supply: Vdd, Vddq=2.5 ± 0.2V.
- Double-data-rate architecture; two data transfers per clock cycle.
- Internal pipelined operation; column address can be changed every clock cycle.
- Bidirectional data strobe.
- Differential Clock inputs
- DLL aligns DQ and DQS transition with CK transition.
- Programmable Read latency 2, 2.5 (clock)
- Programmable Burst length (2, 4, 8)
- Programmable Burst Type (sequential and interleave)
- Edge aligned data output, center aligned data input.
- Auto and self-refresh
- Available temperature range :  
0°C to +70°C  
-40°C to +85°C
- Available with screening option for high reliability application (Space, etc...)

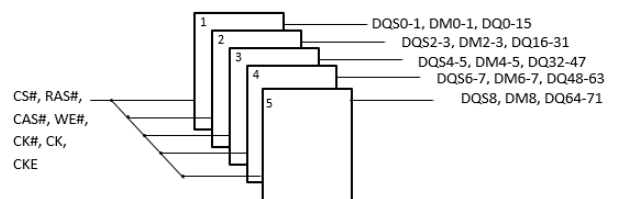
## General description

The 3D1D4G72TB2729 is a high-speed highly integrated DDR 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 3D1D4G72TB2729 is packaged in a 239 balls BGA available with lead-free or leaded balls.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18										
A	⊗	GND	DQ53	VDD	DQ55	GND	VDD	DQ17	DQ18	GND	DQ59	VDD	DQ58	GND	DQ56	VDD	DQ57	GND										
B	DQ52	DQ27	DQ26	DQ54	DQ53	DQ56	DQ63	DQ62	DQ61	DQ19	DQ20	DQ21	DQ22	DQ23	DM2	DM6	DQ52	VDD										
C	VDD	DQ51	DQ28	DQ25	DQ24	VDD	DQ16	VDD	GND	DQ60	GND	VDD	GND	DQ57	VDD	DM3	DM7	GND										
D	DQ29	DQ50	VDD	GND	GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	GND	A2	A3										
E	DQ30	DQ49	GND	GND											GND	VDD	A1	VDD										
F	GND	DQ31	GND	GND											GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	GND	A10	A0
G	GND	DQ48	GND	GND											GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	GND	BA1	GND
H	GND	VREF	VREF	GND											GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	GND	CS#	BA0
J	DQ58	DQ71	VDD	NC											GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	GND	RAS#	VDD
K	VDD	DQ70	DQ69	GND											GND	GND	GND	GND	NC	A13	CAS#	WE#	GND	GND	GND	GND	GND	GND
L	DQ67	DQ68	GND	GND											GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	CK#	GND
M	GND	DQ66	GND	GND											GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VDD	CK	VDD
N	VDD	DQ65	DQ64	GND											GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	CKE	A12	A11
P	DQ47	DQ0	VDD	GND											GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VDD	A9	GND
R	DQ46	DQ1	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A8	A7	VDD										
T	GND	DM8	DQ45	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A5	A6										
U	VDD	DQ2	VDD	GND	GND	GND	GND	GND	NC	GND	GND	GND	GND	GND	GND	VDD	A4	GND										
V	DQ3	DQ44	GND	VDD	DQ7	GND	DQ15	VDD	GND	DQ35	GND	VDD	GND	DQ38	GND	GND	DM1	DM4										
W	DQ43	DQ4	DQ42	DQ41	DQ50	DQ55	DQ32	DQ33	DQ34	DQ12	DQ11	DQ10	DQ9	DQ8	DM0	DM5	DQ51	VDD										
Y	GND	DQ5	DQ6	VDD	DQ40	GND	VDD	DQ14	DQ13	GND	DQ36	VDD	DQ37	GND	DQ39	VDD	DQ54	GND										

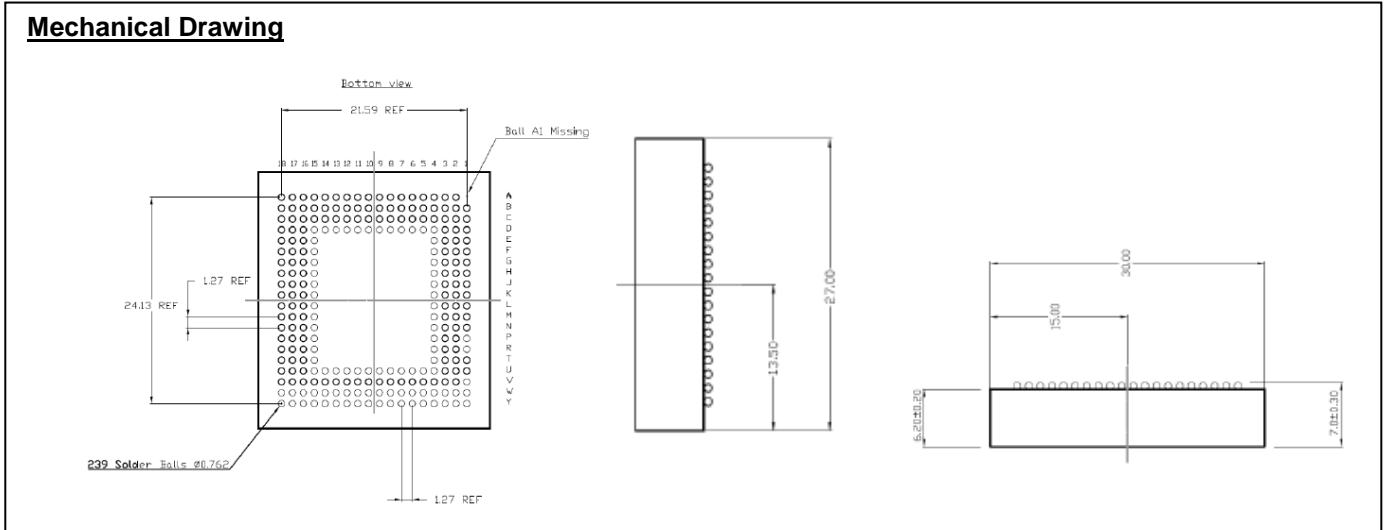
## FUNCTIONAL BLOCK DIAGRAM



# DDR SDRAM MODULE

## 3D1D4G72TB2729

4Gbit DDR SDRAM organized as 64Mx72, based on 64Mx16



### DC Operating conditions and characteristics

Parameter	Symbol	Min	Max	Unit
Supply voltage	V <sub>DD</sub> , V <sub>DDQ</sub>	2.3	2.7	V
Input logic high voltage	V <sub>IH</sub>	V <sub>REF</sub> +0.15	V <sub>DD</sub> +0.3	V
Input logic low voltage	V <sub>IL</sub>	-0.3	V <sub>REF</sub> -0.15	V
I/O reference voltage	V <sub>REF</sub>	0.49 * V <sub>DD</sub>	0.51 * V <sub>DD</sub>	V

### Absolute maximum ratings

Parameter	Symbol	Value	Unit
Supply Voltage	V <sub>DD</sub>	-1.0 to +3.6	V
Storage temperature	T <sub>STG</sub>	-55 ~ +150	°C
Power dissipation	P <sub>D</sub>	5	W
V <sub>REF</sub> and inputs voltage		-1.0 to +3.6	V

### DC Characteristics

Parameter	Symbol	Value	Unit
Operating Current (One bank active)	IDD1	1050	mA
Precharge power down standby current	IDD2P	50	mA
Active power-down current	IDD3P	175	mA

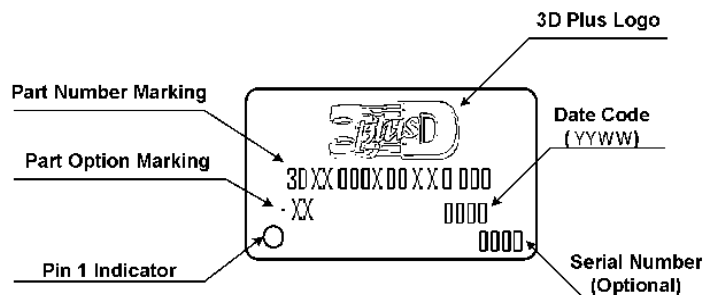
### 3D1D4G72TB2729

X X

Temperature Range  
**C** = 0°C ~ +70°C  
**I** = -40°C ~ +85°C  
**S** = Specific (-40°C ~ +105°C)

Quality Level  
**N** = Commercial Grade  
**B** = Industrial Grade  
**S** = Space Grade

### Module Marking



### Main Sales Office

FRANCE	3D PLUS 408, rue Hélène Boucher ZI. 78530 Buc	Tel : 33 (0)13 0 83 26 50	Fax : 33 (0)1 39 56 25 89	Web : <a href="http://www.3d-plus.com">www.3d-plus.com</a> e-mail : <a href="mailto:sales@3d-plus.com">sales@3d-plus.com</a>	DISTRIBUTOR
USA	3D PLUS USA Inc. 151 Callan Avenue Suite #310 San Leandro, CA 94577	Tel : (510) 824-5591		e-mail : <a href="mailto:sales@3d-plus.com">sales@3d-plus.com</a>	