

3D PLUS SPACE MEMORY MODULE P/N DECODER

	1	2	3	4	5	6	7	8	9	10	11	12	13
3D	<u>XX</u>	<u>000X</u>	<u>00</u>	<u>X</u>	<u>X</u>	<u>0</u>	<u>000</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>00</u>	<u>X</u>

Ex: 3DFN32G08US2845 IS R00M

1 Type

SR: Static RAM	PO: PROM	FN: Flash NAND
SD: Synchronous DRAM	EE: EEPROM	FO: Flash NOR
1D: DDR1	FR: FRAM	SS: Smart NAND Flash System
2D: DDR2	FS: Flash SPI	
3D: DDR3	MN: MNEMOSYNE	
4D: DDR4	MR: MRAM	

2 Density

nnnK: nnn Kilobit **nnnM:** nnn Megabit **nnnG:** nnn Gigabit **nnnT:** nnn Terabit

3 Bus width

01: x1 bit **08:** x8 bits **32:** x32 bits **48:** x48 bits **72:** x72 bits **nn:** xnn bits
04: x4 bits **16:** x16 bits **40:** x40 bits **64:** x64 bits **80:** x80 bits

4 Voltage supply

C: 5.00 V **V:** 3.30 V **S:** 2.80 V **T:** 2.50 V **U:** 1.80 V **W:** 1.50 V
Y: 1.35 V **L:** 1.20 V

For dual voltage modules, the lowest voltage supply is used.

5 Package

B: BGA **C:** Connector **F:** Flat Pack **J:** QFJ **L:** LGA **P:** PGA
Q: QFP **S:** SOP

6 Stacked layers

1: 1 layer **2:** 2 layers **4:** 4 layers **8:** 8 layers **A:** 10 layers **n:** n layers

7 Control Features

nnn: Product Flyer or Datasheet number

8 Temperature range

C: +0 °C to +70 °C
I: -40 °C to +85 °C
M: -55 °C to +125 °C
S: Specific

3D PLUS S.A.S. reserves the right to change without notice – 3DPI-0030-11 -Revision 27/11/2023.

I 9 Screening level

N: Commercial grade

B: Industrial grade

S: Space grade

I 10 Screening and LAT options

: The Space grade is derived from the ESA Qualified Quality Grade for Space applications (Category 1 hybrid Manufacturer as per ECSS-Q-ST-60-05C).

1: The Space grade is derived from the ESA Qualified Quality Grade for Space applications (Category 1 hybrid Manufacturer as per ECSS-Q-ST-60-05C and ECSS-Q-ST-60-13C).

P1: For Space grade modules, screening and qualification flow compliant with PEM-INST-001 Level 1 (for microcircuit plastic encapsulated only). The EEE-INST-002 can be applied as well on demand for other components than microcircuit plastic encapsulated

P2: For Space grade modules, screening and qualification flow compliant with PEM-INST-001 Level 2 (for microcircuit plastic encapsulated only). The EEE-INST-002 can be applied as well on demand for other components than microcircuit plastic encapsulated

H: Burn-in is performed according to MIL-STD-883 on industrial grade modules

C: Custom screening as per Custom Product Detail Specification

I 11 Radiation assurance for space grade modules

A: Generic radiation data available

R: Specific radiation data tested

I 12 Speed/access time

00: N/A	<u>MRAM</u>	<u>FRAM</u>	<u>DDR1 X X</u>	
	40: 40 ns	60: 60 ns	<u>X</u>	<u>X</u>
		55: 55 ns	5: 200 MHz	C: CL3
<u>SRAM</u>	<u>SDRAM</u>	<u>DDR2 X X</u>		<u>DDR3 X X</u>
10: 10 ns	60: 6.0 ns	<u>X</u>	<u>X</u>	<u>X</u>
12: 12 ns	70: 7.0 ns	4: 200 MHz	A: CL =3	H: 667 MHz
15: 15 ns	75: 7.5 ns	6: 333 MHz	E: CL =5	9: CL=9

I 13 Coating, tinning, shielding options

: No option by default

L: SnPb termination

A: "ARATHANE" finish

M: "MAPSIL" finish

T: Tantalum shielding