

# INDUSTRIAL PRODUCTS SHORT FORM STACKED MEMORY MODULES

**3D PLUS** is the leading company for the 3-D electronic packaging and is recognized as a high performance innovator for the design and manufacturing of miniaturized 3-D modules for Active, Passive, Opto-electronics and MEMS/MOEMS components packaging.

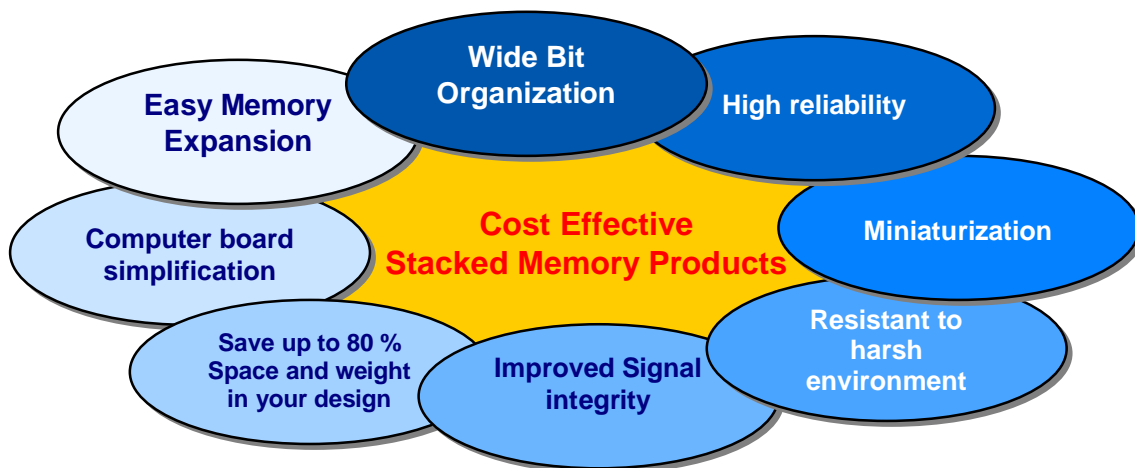
**3D PLUS** offers standard products, custom and semi-custom solutions based on its 3-D technology patented portfolio.

**3D PLUS** provides innovative solutions for high technology sectors in the commercial, industrial, defence, and medical markets.



*Innovating for More Electronics in Less Space*

## 3D PLUS Memory Modules Benefits Overview



- Very High Density,
- High Operating Speed,
- High Signal Integrity and Immunity to Noise and Ground Bounce,
- Low-Power Consumption.

## 3D PLUS Applications



Rugged computers, memory module manufacturers, data storage, embedded systems, high end and blade servers, workstations, Networking switchers and routers, test and measurement equipments...

[www.3d-plus.com](http://www.3d-plus.com)

## 3D PLUS Industrial Products Short Form - Stacked Memory Modules

<i>DDR 2</i>	Capacity	Configuration	Voltage	Clock	Inputs/Control	Layer/Package	Temperature
MMD208128802BUP	1 Gb	128M x 8	1.8V	200-333 MHz	2CS / 2CKE / 2ODT	2L / BGA 95	C,I
MMD216064602BUP	1 Gb	64M x 16	1.8V	200-333 MHz	2CS / 2CKE / 2ODT	2L / BGA 95	C,I
<i>DDR</i>	Capacity	Configuration	Voltage	Clock	Inputs/Control	Package	Temperature
MMDD04256402BTZ	1 Gb	256Mx4	2.5V	100-200 MHz	2CS / 2CKE	2L / BGA 62	C,I
MMDD64016604BT2	1 Gb	16M x 64	2.5V	100-200 MHz	1CS/2CLK/8DQM/8DQS	4L / BGA 164	C,I
MMDD72016605BT2	1 Gb	16M x 72 (64+8ECC)	2.5V	100-200 MHz	1CS/3CLK/9DQM/9DQS	5L / BGA 164	C,I
MMDD04512404BTZ	2 Gb	512Mx4	2.5V	100-200 MHz	4CS / 4CKE	4L / BGA 66	C,I
MMDD08256804STZ	2 Gb	256Mx8	2.5V	100-200 MHz	4CS / 4CKE	4L / SOP 66	C,I
MMDD64032604BT2	2 Gb	32Mx64	2.5V	100-200 MHz	1CS/2CLK/8DQM/8DQS	4L / BGA 164	C,I
MMDD72032605BT2	2 Gb	32M x 72 (64+8ECC)	2.5V	100-200 MHz	1CS/3CLK/9DQM/9DQS	5L / BGA 164	C,I
MMDD08512408ST5	4 Gb	512Mx8	2.5V	100-200 MHz	4CS / 4CKE / 4CLK	8L / SOP 66	C,I
<i>DDR SODIMM</i>	Capacity	Configuration	Voltage	Clock	Inputs/Control	Package	Temperature
SODD72064818DT	1 GB	128M x 72	2.5V	133-200 MHz	2 banks	200 pins SODIMM	C,I
<i>SDRAM</i>	Capacity	Configuration	Voltage	Clock	Inputs/Control	Package	Temperature
MMSD72016605B-R	1 Gb	16M x 72 (64+8ECC)	3.3V	100-133 MHz	2CS/2CKE/2CLK/9DQM	5L / BGA 134	C,I
MMSD72032605B-R	2 Gb	32M x 72 (64+8ECC)	3.3V	100-133 MHz	2CS/2CKE/2CLK/9DQM	5L / BGA 134	C,I
MMSD08512808S-E	4 Gb	512M x 8	3.3V	100-133 MHz	8 CS / 8CKE	8L / SOP 58	C,I
<i>SRAM</i>	Capacity	Configuration	Voltage	Access Time	Inputs/Control	Package	Temperature
MMSR32250602S-C	8 Mb	256K x 32	3.3V	15, 17, 20 ns	2CS	2L / SOP 64	C,I,M
MMSR16001604S-C	16 Mb	1M x 16	3.3V	15, 17, 20 ns	4CS	4L / SOP 54	C,I,M
MMSR32510604S-Y	16 Mb	512K x 32	3.3V	15, 17, 20 ns	2CS	4L / SOP 64	C,I,M
MMSR32001608S-0	32 Mb	1M x 32	3.3V	15, 17, 20 ns	8CS/2BS	8L / SOP 68	C,I,M
MMSR16004608S-C	64 Mb	4M x 16	3.3V	60,75 ns	8CS	8L / SOP 54	C,I,M
<i>FLASH High Temp.</i>	Capacity	Configuration	Voltage	Access Time	Inputs/Control	Package	Temperature
MMFL16016604S-C	256 Mb	16M x 16	3.0V	90,120 ns	4CE	4L / SOP 54	C,I,M,HT
MMFL16048603P-C	768 Mb	48M x 16	3.0V	55,70,90,120 ns	3CE	3L / PGA 57	C,I,M,HT
<i>FLASH NOR</i>	Capacity	Configuration	Voltage	Access Time	Inputs/Control	Package	Temperature
MMFO08256804S-C	2 Gb	256M x 8	3 V	110 ns	4CE	4L / SOP 56	C,I,M
MMFO08512808S-C	4 Gb	512M x 8	3 V	110 ns	8CE	8L / SOP 60	C,I,M
<i>FLASH NAND</i>	Capacity	Configuration	Voltage	Access Time	Inputs/Control	Package	Temperature
MMFN08512804S-C	4 Gb	512M x 8	3.3V	R : 50 ns, W : 45 ns *	4CE	4L / SOP 48	C,I,M
MMFN08102808S-F	8 Gb	1G x 8	3.3V	R : 50 ns, W : 50 ns *	8CE/8RB/8RE/8WE	8L / SOP 50	C,I,M
MMFN08102808B-F	8 Gb	1G x 8	3.3V	R : 50 ns, W : 50 ns *	8CE/8RB/8RE/8WE	8L / BGA 84	C,I,M
MMFN64128604B-F	8 Gb	128M x 64	3.3V	R : 50 ns, W : 50 ns *	4CE/4RB/4RE/4WE	4L / BGA 119	C,I,M
MMFN08204808S-F	16 Gb	2G x 8	3.3V	R : 50 ns, W : 50 ns *	8CE/8RB/8RE/8WE	8L / SOP 50	C,I,M
MMFN16102604S-F	16 Gb	1G x 16	3.3V	R : 50 ns, W : 50 ns *	4CE/4RB/4RE/4WE	4L / SOP 48	C,I,M
MMFN08408808S-F	32 Gb	4G x 8	3.3V	R : 50 ns, W : 50 ns *	8CE/8RB/8RE/8WE	8L / SOP 50	C,I,M
<i>EEPROM</i>	Capacity	Configuration	Voltage	Access Time	Inputs/Control	Package	Temperature
MMEE08250802S-C	2 Mb	256K x 8	3.3V	250 ns	2CE	2L / SOP 40	C,I
MMEE08510804S-C	4 Mb	512K x 8	3.3V	250 ns	4CE	4L / SOP 40	C,I
MMEE08001808S-C	8 Mb	1M x 8	3.3V	250 ns	8CE	8L / SOP 40	C,I

\* : Serial Access Time

HT : 155°C

Unless otherwise specified, 3D PLUS components are available with three temperature ranges :

**C** : Commercial (0°C to 70°C), **I** : Industrial (-40°C to +85°C) or **M** : Military (-55°C to +125°C)

Specific temperature range and custom quality grade can be envisaged on demand.

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