

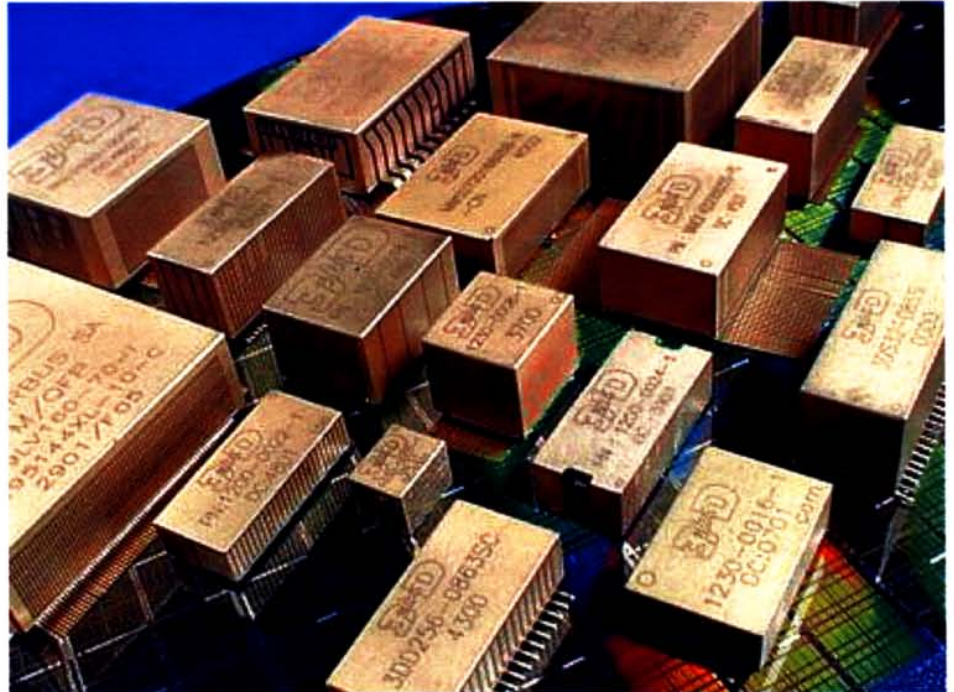


# MEMORY PRODUCTS SHORT FORM

is the leading company for the 3-D electronic packaging in Europe 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.

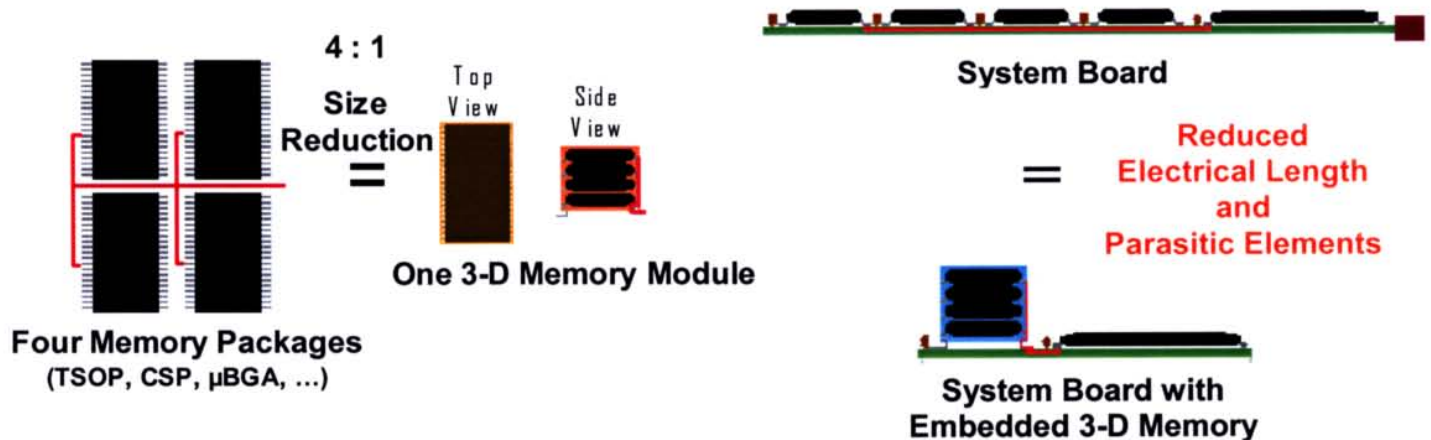
**3D PLUS** provides innovative solutions for high technology sectors in the commercial, industrial, military, medical and space markets.



## The Use of the 3<sup>rd</sup> Dimension

### 3D PLUS Concept and Technology

3D PLUS Concept and Technology for Memory Modules lead to more Performance in Smaller Spaces :



This technology allows to gain a factor of at least 10 on weight and volume of the components comparing to existing solutions.

Also, electronic performances are significantly improved, since parasitic effects (resistance, inductance and capacity) are reduced in the same proportions as the reduction in volume.

### 3D PLUS Memory Modules Benefits Overview

- Miniaturization (Save up to 80 % Space and weight in the design),
- Very High Density,
- Wide Bit Organization (x 32, x 48, x 64, x 72, ... and more if needed),
- High Operating Speed,
- High Signal Integrity and Immunity to Noise and Ground Bounce,
- Low-Power Consumption,
- Life Cycle Management (guaranteed Up-grades and long term availability),
- Robust to harsh environment for Industry, Avionics, Automotive, Military and Space applications.

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## 3D PLUS Memory Products Short Form

<b>SDRAM</b>	Capacity	Configuration	Voltage	Access/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
MMSD08128404S-G	1 Gb	128M x 8	3.3V	100-133 MHz	2CS/2CKE/2DQM	4L / SOP 54	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
MMSD16128808S-V	2 Gb	128M x 16	3.3V	100-133 MHz	2CLK/2CKE/4CS/2DQM	8L / SOP 58	C,I
MMSD08256408S-Z	2 Gb	256M x 8	3.3V	100-133 MHz	4CS/4CKE	8L / SOP 54	C,I
MMSD08256804S-C	2 Gb	256M x 8	3.3V	100-133 MHz	4CS	4L / SOP 54	C,I
MMSD08512808S-E	4 Gb	512M x 8	3.3V	100-133 MHz	8CS/8CKE	8L / SOP58	C,I
<b>DDRAM</b>	Capacity	Configuration	Voltage	Access/Clock	Inputs/Control	Package	Temperature
MMDD72016605BT2	1 Gb	16M x 72 (64+8ECC)	2.5V	133-266 MHz	1CS/3CLK/9DQM/9DQS	5L / BGA 164	C,I
MMDD72032604BT2	2 Gb	32M x 72 (64+8ECC)	2.5V	133-266 MHz	1CS/3CLK/9DQM/9DQS	5L / BGA 164	C,I
MMDD08256804STZ	2 Gb	256M x 8	2.5V	133-266 MHz	4CS / 4CKE	4L / SOP 66	C,I
MMDD08512408ST5	4 Gb	512M x 8	2.5V	133-266 MHz	4CS/4CKE/4CK/4#CK	8L / SOP 66	C,I
<b>SRAM</b>	Capacity	Configuration	Voltage	Access/Clock	Inputs/Control	Package	Temperature
MMSR16510802SCC	8 Mb	512K x 16	5V	17 ns	2CS	2L / SOP 64	C,I,M
MMSR32510604S-Y	16 Mb	512K x 32	3.3V	15, 17, 20 ns	2CS	4L / SOP 64	C,I,M
MMSR32510604B-C	16 Mb	512K x 32	3.3V	15, 17, 20 ns	4CS	4L / BGA 98	C,I,M
MMSR16001604S-C	16 Mb	1M x 16	3.3V	15, 17, 20 ns	4CS	4L / SOP 54	C,I,M
MMSR16001604SCC	16 Mb	1M x 16	5V	15, 17, 20 ns	4CS	4L / SOP 54	C,I,M
MMSR08002804S-C	16 Mb	2M x 8	3.3V	15, 17, 20 ns	4CS	4L / SOP 50	C,I,M
MMSR08002804B-C	16 Mb	2M x 8	3.3V	15, 17, 20 ns	4CS	4L / BGA 79	C,I,M
MMSR08002808S-CR	16 Mb	2M x 8	3.3V	40 ns	16CS1/8CS2	8L / SOP 64	C,I,M
MMSR16001808S-CR	16 Mb	1M x 16	3.3V	40 ns	8CS1/8CS2	8L / 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	55,70 ns	8CS	8L / SOP 54	C,I,M
<b>EEPROM</b>	Capacity	Configuration	Voltage	Access/Clock	Inputs/Control	Package	Temperature
MMEE08250802S-C	2 Mb	256K x 8	3.3V	150 ns	2CE	2L / SOP 40	C,I
MMEE08510804SCC	4 Mb	512K x 8	5V	130 ns	4CE	4L / SOP 40	C,I
MMEE32120804SCYD	4 Mb	128K x 32	5V	250 ns	1CE	4L / SOP 64	C,I
MMEE08001808SCC	8 Mb	1M x 8	5V	150 ns	8CE	8L / SOP 40	C,I
MMEE32250808S-YD	8 Mb	256K x 32	3.3V	250 ns	2CE	8L / SOP 64	C,I
<b>FLASH</b>	Capacity	Configuration	Voltage	Access/Clock	Inputs/Control	Package	Temperature
MMFL64002604B-D	128 Mb	2M x 64	3.3V	R : 70 ns, W : 70 ns *	4CE/4WE	4L / BGA 119	C,I,M
MMFN08512804S-C	4 Gb	512M x 8	3.3V	R : 50 ns, W : 45 ns *	4CE	4L / SOP 48	C,I,M
MMFN08512804B-C	4 Gb	512M x 8	3.3V	R : 50 ns, W : 45 ns *	4CE	4L / BGA 84	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
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

Unless otherwise specified, 3D PLUS components are available in three standard quality grades : N: Commercial, B: Industrial, S: Space; and three temperature ranges: C: Commercial (0°C to 70°C), I: Industrial (-40°C to +85°C), M: Military (-55°C to +125°C).

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

\* : Serial Access Time

Radiation Tolerant and Radiation Hardened version of these products are also available for Space applications.

Shouldn't you find the product you are looking for, do not hesitate to visit our Web Site at [www.3d-plus.com](http://www.3d-plus.com) or to contact us to discuss your needs.

 <p><b>The Use of The 3<sup>rd</sup> Dimension</b></p>	<b>France</b> 3D PLUS 641, rue Hélène Boucher ZI 78532 BUC Cedex Tel : +33 (0)1 30 83 26 50 Fax : +33 (0)1 39 56 25 89	e-mail : <a href="mailto:sales@3d-plus.com">sales@3d-plus.com</a> Web : <a href="http://www.3d-plus.com">www.3d-plus.com</a>
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