

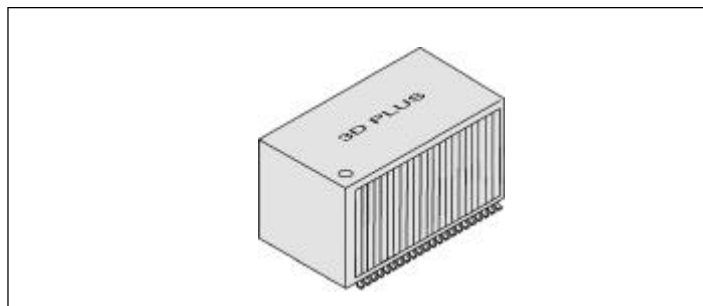


# MEMORY MODULE SDRam 128Mx16-SOP

## Synchronous Dynamic Ram MODULE

**MMSD16128808S-V**

2Gbit SDRam organized as 128Mx16, based on 32Mx8



### Features

- Stack of eight 256Mbit SDRam.
- Organized as 128Mx16-bit.
- Single +3.3V  $\pm$ 0.3V power supply.
- Fully synchronous ; all signals registered on positive edge of system clock.
- Internal pipelined operation ; column address can be changed every clock cycle.
- Programmable burst lengths ; 1, 2, 4, 8 or full page.
- Auto Precharge, includes Concurrent Auto Precharge, and Auto Refresh Modes.
- Self Refresh Modes.
- LVTTTL-compatible inputs and outputs.
- 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 MMSD16128808S-V is a high-speed highly integrated Synchronous Dynamic Random Access Memory containing 2,147,483,648 bits.

It is organized with four banks of 512 Mbit.

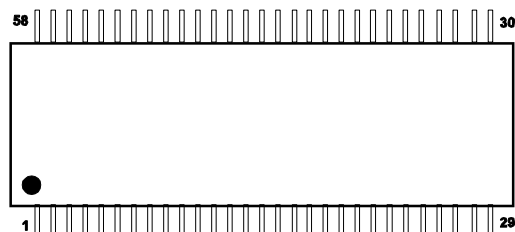
Each bank has a 16-bit interface and is selected with specific #CS CLK and CKE.

It is particularly well suited for use in high reliability, high performance and high density system applications, such as solid state mass recorder, server or workstation.

The MMSD16128808S-V is packaged in a 58 pin SOP.

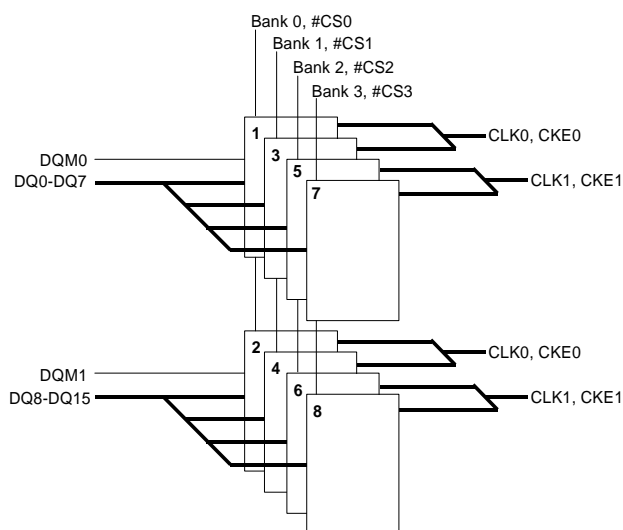
### Pin Assignment (Top View)

SOP 58 - (Pitch : 0.80 mm)



1	VDD	21	BA1	41	CKE0
2	DQ0	22	A10/AP	42	CLK0
3	VDDQ	23	A0	43	DQM0
4	DQ8	24	A1	44	DQM1
5	DQ1	25	A2	45	VSS
6	VSSQ	26	A3	46	DQ15
7	DQ9	27	VDD	47	VDDQ
8	DQ2	28	#CS2	48	DQ4
9	VDDQ	29	#CS3	49	DQ14
10	DQ10	30	CLK1	50	VSSQ
11	DQ3	31	CKE1	51	DQ5
12	VSSQ	32	VSS	52	DQ13
13	DQ11	33	A4	53	VDDQ
14	VDD	34	A5	54	DQ6
15	#CS1	35	A6	55	DQ12
16	#WE	36	A7	56	VSSQ
17	#CAS	37	A8	57	DQ7
18	#RAS	38	A9	58	VSS
19	#CS0	39	A11		
20	BA0	40	A12		

### FUNCTIONAL BLOCK DIAGRAM



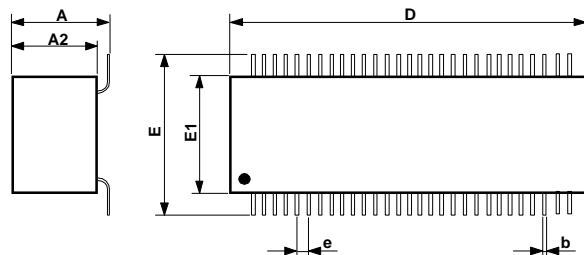
(All others signals are common to the eight memories)

## Synchronous Dynamic Ram MODULE

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### Mechanical Drawing



	Min	Max
A	11.55	12.15
A2	10.30	10.90
D	25.40	25.80
E	13.40	13.80
E1	10.85	11.05
b	0.30	
e	0.80	
Dimensions (mm)		
Max. weight : 6.95 gr.		

### Test Tools

MMSD16128808S-V	ENPLAS 64-08-04	Modified by 3D PLUS
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### DC Operating conditions and characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Supply voltage	V <sub>DD</sub>	3.0	3.3	3.6	V
Input logic high voltage	V <sub>IH</sub>	2.0	3.0	V <sub>DD</sub> +0.3	V
Input logic low voltage	V <sub>IL</sub>	-0.3	-	0.8	V
Output logic high Voltage	V <sub>OH</sub>	2.4	-	-	V
Output logic low voltage	V <sub>OL</sub>	-	-	0.4	V

### Absolute maximum ratings

Parameter	Symbol	Value	Unit
Voltage on any pin relative to VSS	V <sub>IN</sub> , V <sub>OUT</sub>	-1.0 ~ 4.6	V
Storage temperature	T <sub>STG</sub>	-55 ~ +150	°C
Power dissipation	P <sub>D</sub>	2	W
Short circuit current	I <sub>OS</sub>	50	mA

### DC Characteristics

Parameter	Symbol	Value	Unit
Operating current (One bank active)	I <sub>CC1</sub>	202	mA
Precharge standby current in power-down mode	I <sub>CC2P</sub>	24	mA
	I <sub>CC2PS</sub>	16	mA

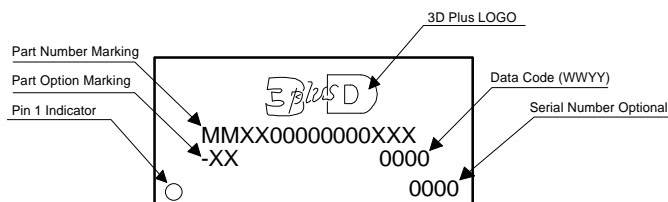
### MMSD16128808S-V

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Temperature Range  
**C** = (0°C to +70°C)  
**I** = (-40°C to +85°C)

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

### MODULE MARKING



### MAIN SALES OFFICE

	3D PLUS			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
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