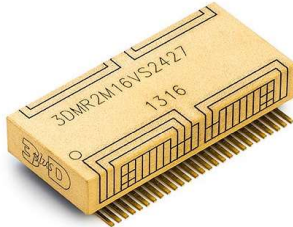


3DMR2M16VS2427



GENERAL DESCRIPTION

The Magneto-resistive Random Access Memory (MRAM) uses magnetic polarization rather than electric charges to store data bits. Therefore, the MRAM acts like a SRAM (rapid data buffers) while being non-volatile like a Flash.

The 3DMR2M16VS2427 is a high-speed, highly integrated 2 Mbit MRAM, organized with two banks of 1 Mbit. It has an 16-bit interface and can be accessed by activating the associated control signals: #WE, #OE, #CE0 and #CE1.

This MRAM is a cost-effective solution for processor's boot, program ROM and FPGA configuration memory. It can be used in variety of space applications such as: sciences and deep space missions, navigation, launchers and manned vehicles, etc. ...

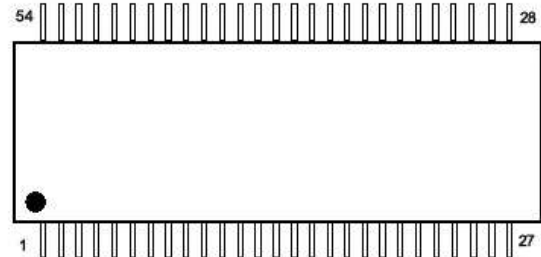
The module packaged in a SOP 54 is available for Commercial, Industrial or Specific temperature range. It is also available with screening options up to space grade level.

KEY FEATURES

- Memory Cell Array (128k x 16 bits)
- Single 3.3 V power supply operation
- Symmetrical high-speed read and write fast access: 35 ns
- Fully static operation (no clock or refresh required)
- SRAM compatible
- Reliable CMOS Floating-Gate Technology
 - Endurance: unlimited read/write operation
 - Data Retention: >10 Years
- SEU immune
- Available with screening up to Space grade

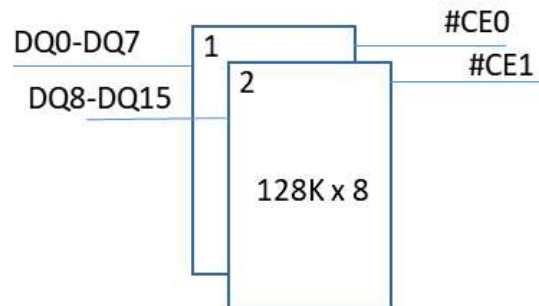
PIN ASSIGNMENT (top view)

SOP 54 - Pitch 0.80 mm



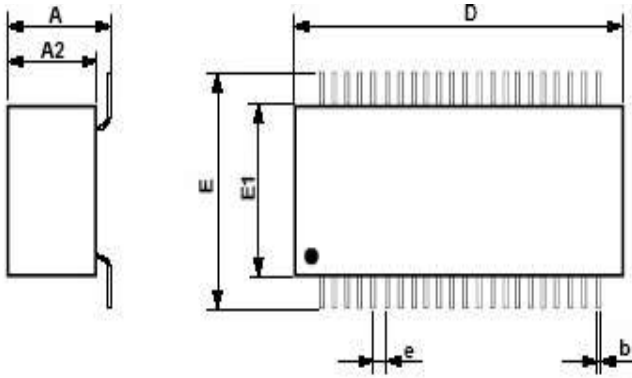
1	DQ9	19	A5	37	NC
2	DQ8	20	A6	38	DQ4
3	#CE1	21	A7	39	DQ5
4	NC	22	A8	40	VDD
5	NC	23	A9	41	VSS
6	A0	24	NC	42	DQ6
7	A1	25	NC	43	DQ7
8	A2	26	DQ11	44	#OE
9	A3	27	DQ10	45	A15
10	A4	28	DQ13	46	A16
11	#CE0	29	DQ12	47	NC
12	DQ0	30	NC	48	NC
13	DQ1	31	NC	49	NC
14	VCC	32	A10	50	NC
15	VSS	33	A11	51	NC
16	DQ2	34	A12	52	NC
17	DQ3	35	A13	53	DQ15
18	#WE	36	A14	54	DQ14

FUNCTIONAL BLOCK DIAGRAM



All other signals are common to both memories

MECHANICAL DRAWING



Dimensions (mm)

	MIN	MAX
A	4.90	5.60
A2	3.80	4.20
D	23.80	24.20
E	13.40	13.80
E1	10.85	11.05
b	0.35	
e	0.80	

Max. weight: 3.10 g

DC operating conditions and characteristics

PARAMETER	SYMBOL	MIN	MAX	UNIT
Supply Voltage	V_{DD}	3.0	3.6	V
Write inhibit Voltage	V_{WI}	2.5	3.0	V
Input logic High Voltage	V_{IH}	2.2	$V_{DD} + 0.3$	V
Input logic Low Voltage	V_{IL}	-0.3	0.8	V

Absolute maximum ratings

PARAMETER	SYMBOL	VALUE	UNIT
Supply voltage relative to V_{SS}	V_{DD}	-0.5 to +4.0	V
Storage temperature	T_{STG}	-55 to +150	°C
Voltage Input relative to V_{SS}	V_{IN}	-0.5 to $V_{DD} + 0.5$	V
Power dissipation	P_{DMAX}	1.0	W
Max. magnetic field during	H_{MAX_WRITE}	2000	A/m
Max. magnetic field during	H_{MAX_READ}	8000	A/m


DC Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Output Low Voltage ($I_{OL} = 4$ mA)	V_{OL}	0.4	V
Output High Voltage ($I_{OH} = -4$ mA)	V_{OH}	2.4	V

Note: Permanent device damage may occur if "Absolute maximum ratings" are exceeded. Functional operation should be restricted to recommended operating condition.

Exposure to higher than recommended voltage for extended periods of time could affect device reliability.

MODULE MARKING



PART NUMBER MARKING → 3DXX000X00XX0 000

PART OPTION MARKING → XX

PIN 1 INDICATOR

DATE CODE (YYWW) → 0000

SERIAL NUMBER (optional) → 0000

3DMR2M16VS2427 X X

Temperature Range

C = (0°C to +70°C)

I = (-40°C to +85°C)

S = (-55°C to +105°C)

Quality Level

N = Commercial Grade

B = Industrial Grade

S = Space Grade

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