



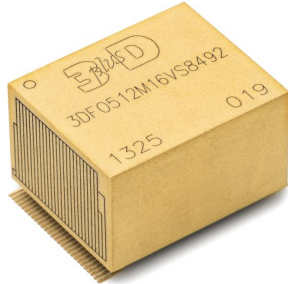
# MEMORY MODULE

## FLASH NOR

3DFO512M16VS8492

512 Mbit: 16-bit bus width, NOR Flash based on 4M x 16

### 3DFO512M16VS8492



## GENERAL DESCRIPTION

The 3DFO512M16VS8492 is a 3.0 V single power 512 Mbit Flash memory. The memory is organized in 8 banks of 64 Mbit with separate #CE (chip enable) signal controls. Each individual bank is a 4M x 16 bit device.

The simultaneous read/write operations allows data to be continuously read from one bank while executing erase/program in any other bank. Plus, there is no latency between read and write operations.

Hardware data protection measures include a low  $V_{CC}$  detector that automatically inhibits write operations during power transitions. Thanks to power management circuits, the memory can reduce its power consumption to nearly zero during inactive periods.

All these features enhanced by 3D PLUS technology, make this memory a cost-effective solution for low power and high-capacity data storage needs.

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

## KEY FEATURES

Single Power supply: 3.0 V for all operations

Simultaneous Read/Write operation

Data polling and toggle bits

High Performance

90 ns access time (120 ns for the MIL temp range)

4  $\mu$ s/word typ. program time with accelerate function

Top and bottom boot sectors in the same device

Any combination of sectors can be erased

Ultra low power consumption

Flexible bank architecture

Supports Common Flash Memory Interface (CFI)

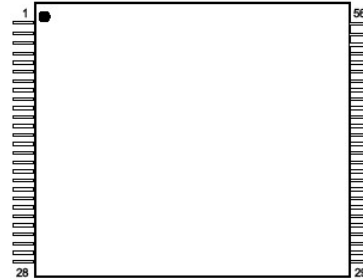
Endurance: 1 million Program/Erase Cycles per sector

Data Retention: 20 Years

ITAR free

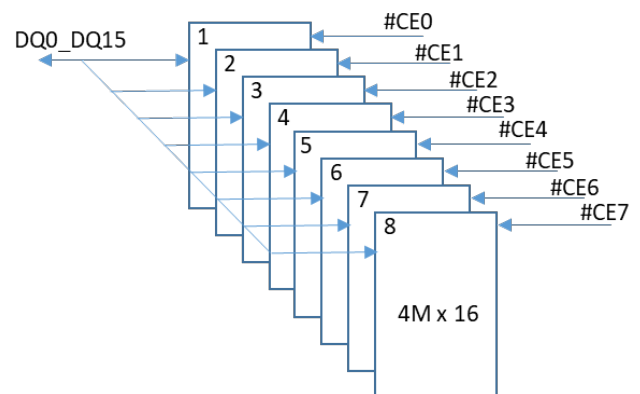
## PIN ASSIGNMENT (top view)

SOP 56 Pitch 0.50 mm



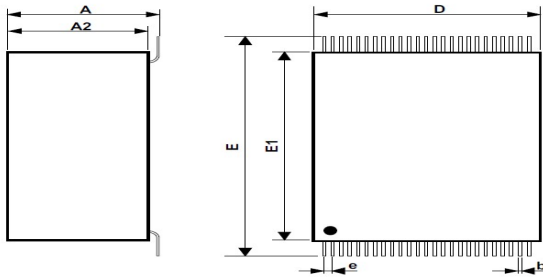
1	NC	20	A7	39	DQ2
2	#CE4	21	A6	40	DQ10
3	A15	22	A5	41	DQ3
4	A14	23	A4	42	DQ11
5	A13	24	A3	43	VCC
6	A12	25	A2	44	DQ4
7	A11	26	A1	45	DQ12
8	A10	27	#CE3	46	DQ5
9	A9	28	#CE5	47	DQ13
10	A8	29	#CE6	48	DQ6
11	A19	30	#CE2	49	DQ14
12	A20	31	A0	50	DQ7
13	#WE	32	#CE0	51	DQ15
14	#RESET	33	VSS	52	VSS
15	A21	34	#OE	53	#BYTE
16	#WP/ACC	35	DQ0	54	A16
17	RY/#BY	36	DQ8	55	#CE1
18	A18	37	DQ1	56	#CE7
19	A17	38	DQ9		

## FUNCTIONAL BLOCK DIAGRAM



All other signals are common to all memories

## MECHANICAL DRAWING



Dimensions (mm)

	Min	Max
A	11.50	12.20
A2	10.40	10.80
D	15.00	15.40
E	20.00	20.40
E1	18.60	18.80
b	0.20	
e	0.50	

Max. weight: 8.60 g

## DC Operating Conditions and Characteristics

Parameter	Symbol	Min	Max	Unit
Supply Voltage core	$V_{CC}$	2.70	3.60	V
Input logic High Voltage	$V_{IH}$	$0.70 \times V_{CC}$	$V_{CC} + 0.30$	V
Input logic Low Voltage	$V_{IL}$	-0.50	0.80	V

## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply voltage relative to $V_{SS}$	$V_{CC}, V_{IC}$	-0.5 to +4.0	V
Storage temperature	$T_{STG}$	-65 to +150	°C
Short circuit current	$I_{OS}$	200	mA


## DC Characteristics

Parameter	Symbol	Value	Unit
$V_{CC}$ active read current @ 5MHz	$I_{CC1}$	12	mA
Typical Standby Current ( $V_{CC}$ )	$I_{CC4}$	160	µA

**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

**3DFO512M16VS8492** X X

Temperature Range

**C** = (0°C to +70°C)

**I** = (-40°C to +85°C)

**M** = (-55°C to +125°C)

**S** = Specific

Quality Level

**N** = Commercial Grade

**B** = Industrial Grade

**S** = Space Grade

## 3D PLUS SALES OFFICES

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