

# **VDIC EEPROM MEMORY**

## **VDEE1M08XS40XX1V250-II USER MANUAL**

**Version : A0**

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# VDIC-EEPROM

## 3.3V 128K × 8bit

### 1 Description

The VDEE1M08XS40XX1V250-II is a 1,31,072 words of 8-bit. Electrically Erasable and Programmable CMOS ROM . It is organized with one bank of 1Mbit . This module operates at high speed, low power consumption and high reliability by employing advanced MNOS memory technology and CMOS process and circuitry technology. It is particularly well suited for use in high reliability, high performance and high density system applications.

The VDEE1M08XS40XX1V250-II is packaged in a 40 pins SOP.

### 2 Features

- Single 3.3 V supply: 2.7 V to 3.6 V
- Access time: 250 ns (max)
- Power dissipation
  - Active: 20 mW/MHz, (typ)
  - Standby: 110 μW (max)
- On-chip latches: address, data, # CE0, #OE, #WE
- Automatic byte write: 10 ms (max)
- Automatic page write (128 bytes): 10 ms (max)
- Data polling and RDY/#Busy
- Reliable CMOS with MNOS cell technology
- 10<sup>4</sup>erase/write cycles (in page mode)
- 10 years data retention
- Software data protection
- Write protection by #RES pin

### 3 Block Diagram

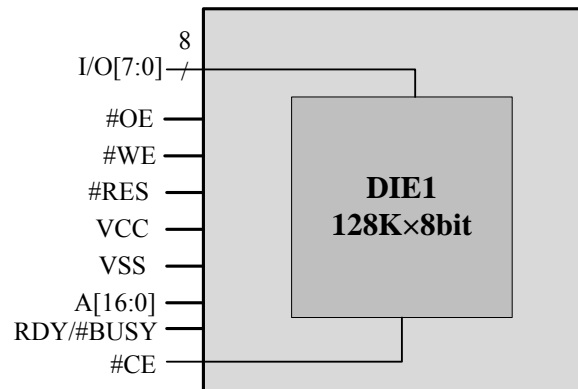


Figure 1 Block diagram

### 4 Pin Descriptions

Pin Id	Pin #		Pin Id
VSS	1	40	NC
NC	2	39	NC
A11	3	38	#OE
A9	4	37	A10
A8	5	36	#CE0
A13	6	35	I/O7
#WE	7	34	I/O6
#RES	8	33	I/O5
A15	9	32	I/O4
VCC	10	31	I/O3
RDY/#BUSY	11	30	VSS
A16	12	29	I/O2
A14	13	28	I/O1
A12	14	27	I/O0
A7	15	26	A0
A6	16	25	A1
A5	17	24	A2
A4	18	23	A3
NC	19	22	NC
NC	20	21	NC

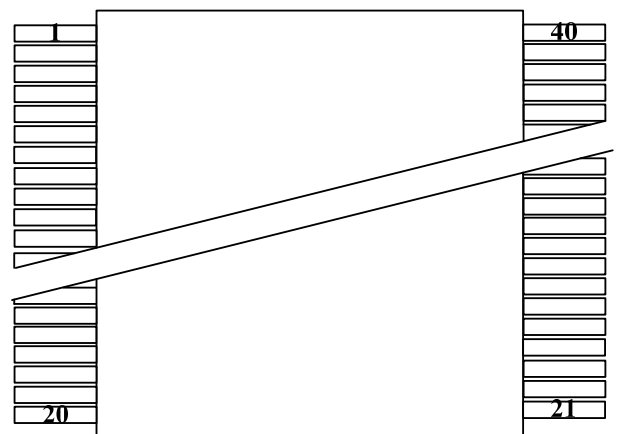


Figure 2 Pin configuration

Table 1 Pin description

Name	Function
A0~A16	Address Input..
I/O0- I/O7	Data Input/Output Ports. 8 bit-directional ports are used to read data from or write data into the EEPROM.
#CE0	Die Enable Input .When #CE0 is Low, the command input cycle becomes valid. When #CE0 is High, input are ignored.
RDY/#BUSY	Ready busy.
#RES	Reset input.
#OE	Output enable.
#WE	Write Enable Input. Enables write operation.
VCC	Power supply
VSS	Ground
NC	No connection This pin is recommended to be left No Connection on the device.

## 5 Electrical Specifications

### 5.1 Absolute Maximum Ratings

Table 2 Absolute maximum ratings

Parameter	Symbol	Value	Unit
Supply voltage relative to V <sub>SS</sub>	V <sub>CC</sub>	-0.6 to +7.0	V
Input voltage relative to V <sub>SS</sub>	V <sub>in</sub>	-0.5 to +7.0	V
Operating temperature range	T <sub>OPR</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-65 to +150	°C
Power Dissipation	P <sub>D</sub>	1	W

### 5.2 Recommended DC Operating Conditions

Table 3 Recommended DC operating condition

Parameter	Symbol	Min	Typ	Max	Unit
Supply voltage	V <sub>CC</sub>	2.7	3.3	3.6	V
	V <sub>SS</sub>	0	0	0	V
Input voltage	V <sub>IL</sub>	-0.3	-	0.8	V
	V <sub>IH</sub>	1.9	-	V <sub>CC</sub> +0.3	V
	V <sub>H</sub>	V <sub>CC</sub> -0.5	-	V <sub>CC</sub> +1.0	V

5.3 DC Characteristics (VCC = 2.7 V to 3.6 V)

Table 4 DC characteristics

Parameter	Symbol	Test conditions	min.	max.	Unit
Output voltage low level	VOL	V <sub>cc</sub> =2.7V , I <sub>OL</sub> = 2.1mA	—	0.4	V
Output voltage high level	VOH	V <sub>cc</sub> =2.7V , I <sub>OH</sub> = -400uA	2.16	—	V

6 Typical Application

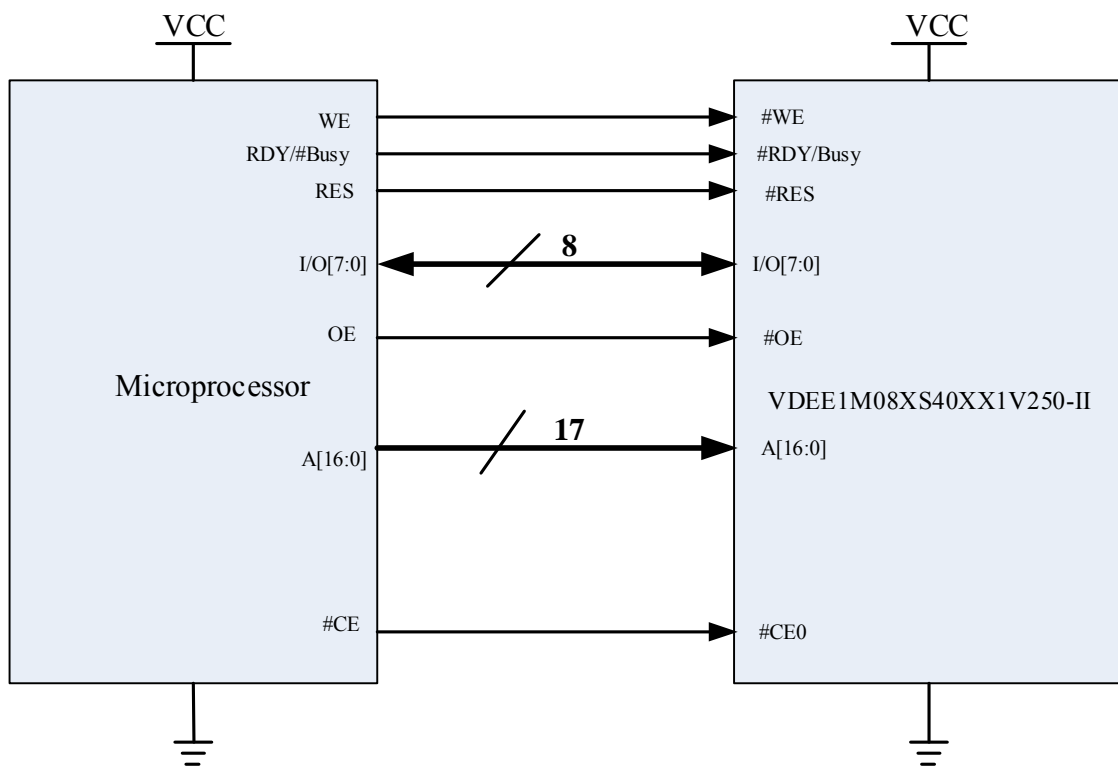


Figure 3 Typical application

## 7 Ordering Information

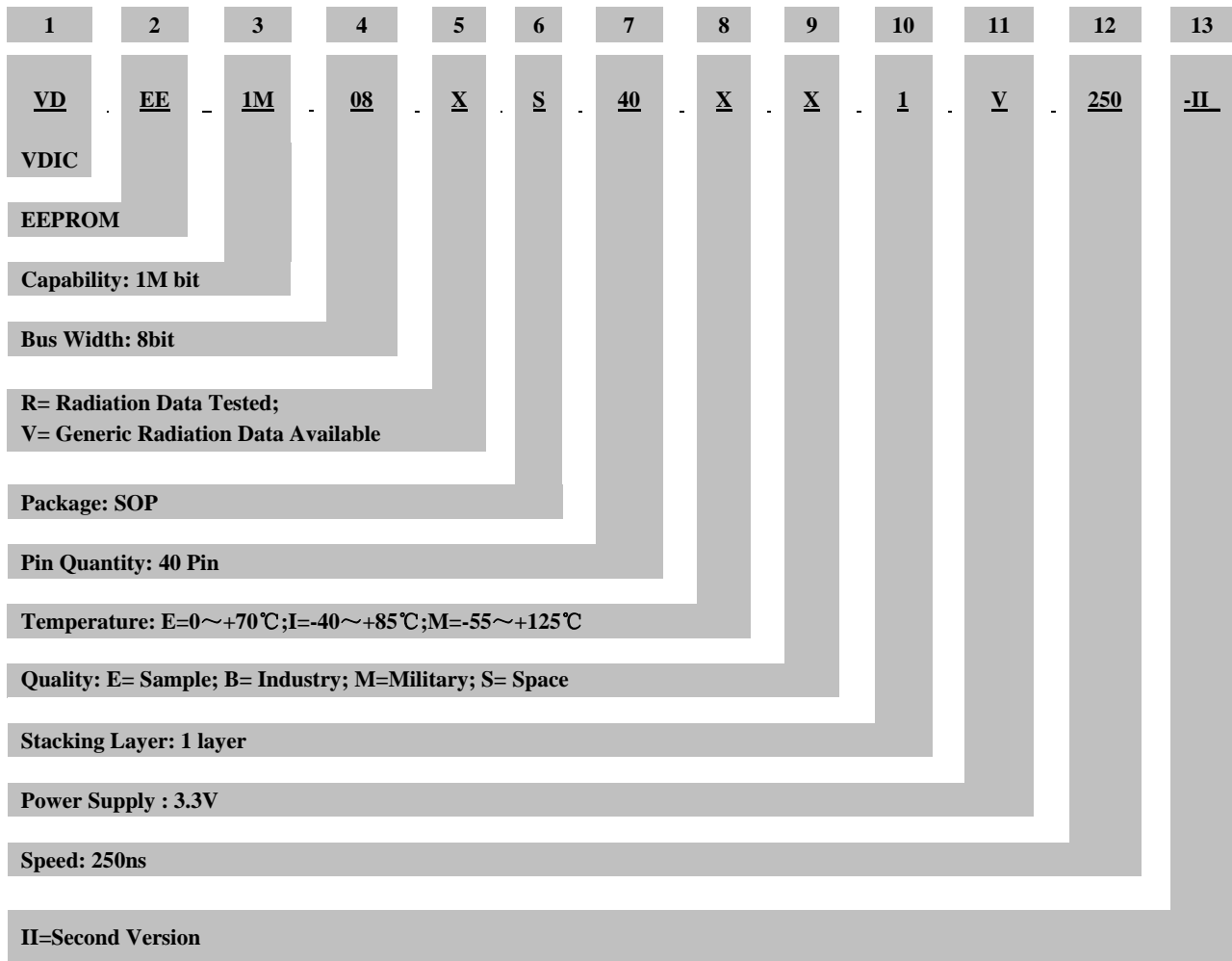


Table 5 Ordering information

Part Number	Capacity (bit)	Bus Width (bit)	Radiation			Packaging	Temperature ( °C )
			TID <sup>1</sup>	SEL <sup>2</sup>	SEU <sup>3</sup>		
VDEE1M08VS40EE1V250-II	1M	8	-	-	-	SOP40	0 ~ + 70
VDEE1M08VS40IB1V250-II	1M	8	-	-	-	SOP40	-40 ~ + 85
VDEE1M08VS40MM1V250-II	1M	8	-	-	-	SOP40	-55 ~ + 125
VDEE1M08RS40MS1V250-II	1M	8	TBD	TBD	TBD	SOP40	-55 ~ + 125

<sup>1</sup> TID: Total Dose (Krad(Si))

<sup>2</sup> SEL: LET Threshold (Mev.cm<sup>2</sup>/mg)

<sup>3</sup> SEU:SEU Threshold (Mev.cm<sup>2</sup>/mg)

### 8 Package Dimensions

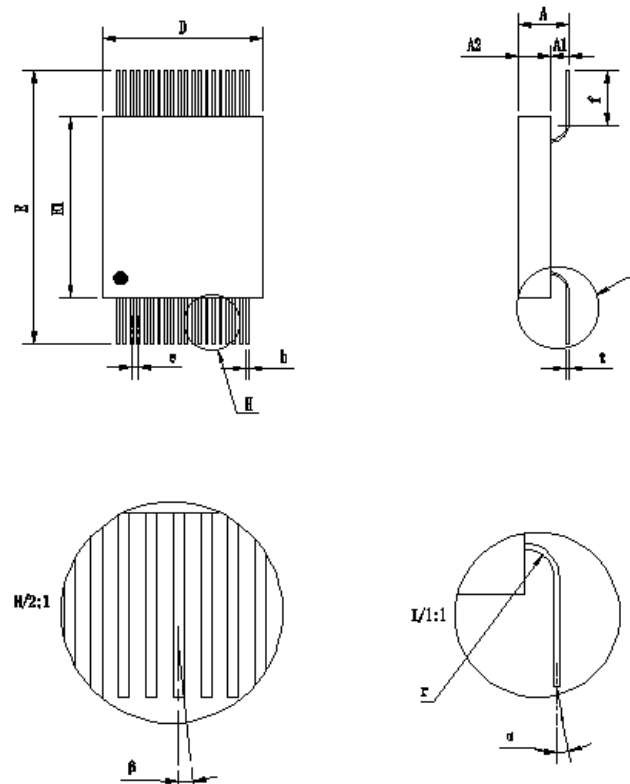


Figure 4 Package dimensions

Table 6 Dimensions information

	Min	Max
A	3.70	4.40
A2	2.50	3.10
D	11.50	11.90
E	19.80	20.20
E1	13.00	13.40
f	3.98	
b	0.25	
e	0.5	
r	1.0	
t	0.2	
$\alpha$	$\leq 3^\circ$	
$\beta$	$\leq 3^\circ$	
NOTE: 1.Uint: mm 2. A1= A - A2		



## 9 REVISION HISTORY

Table 7 Revision history

Revision	Date	Description of Change
A0	Feb 27th,2020	First Created