3DEE4M32VS4162

GENERAL DESCRIPTION

The 3DEE4M32VS4162 is a 4 Mbit EEPROM (Electrically Erasable and Programmable ROM) organized as a single bank of 128K x 32 bits. This bank 32-bit interface is selected with #CE0. All other signals are common to the four 1 Mbit EEPROM memories.

Using high performance and high reliability CMOS technology combined with 3D PLUS patented stacking technology, this EEPROM memory is well suited for use in high reliability, high performance system applications.

The module packaged in a SOP 64 is available for Commercial, Industrial or Military temperature range. It is also available with screening options up to space grade level.

KEY FEATURES

Memory Cell Array 128K x 32 bits
3.3 V single power supply
Access time: 250 ns (Max)
Power dissipation
  Active: 80 mW/Hz (Typ)
  Standby: < 400 µW (Max)
On chip latches: address, data, #CE, #OE, #WE
Single voltage operation: 3.3 V
Automatic byte write: 15 ms (Max)
Automatic page write (128 bytes): 15 ms (Max)
Command/Address/Data Multiplexed I/O Port
Data polling and RDY/#BUSY
Endurance: 100k Program/Erase Cycles
Data Retention: 10 Years
Software data protection
Write protection by #RES pin
Available temperature range
  0°C to +70°C
  -40°C to +85°C
  -55°C to +125°C
Available with screening options up to grade S
ITAR free

PIN ASSIGNMENT

SOP 64 - Pitch 0.50 mm

FUNCTIONAL BLOCK DIAGRAM

All other signals are common to the four memories.
MECHANICAL DRAWING

Dimensions (mm)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
<td>9.00</td>
<td>9.70</td>
</tr>
<tr>
<td>A2</td>
<td>A2</td>
<td>7.90</td>
<td>8.30</td>
</tr>
<tr>
<td>D</td>
<td>D</td>
<td>18.50</td>
<td>18.90</td>
</tr>
<tr>
<td>E</td>
<td>E</td>
<td>15.70</td>
<td>16.10</td>
</tr>
<tr>
<td>E1</td>
<td>E1</td>
<td>10.90</td>
<td>11.10</td>
</tr>
<tr>
<td>b</td>
<td>b</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>e</td>
<td>0.50</td>
<td></td>
</tr>
</tbody>
</table>

Max. weight: 4.20 g

MODULE MARKING

3D PLUS SALES OFFICES

HEADQUARTERS (FRANCE)
408, rue Hélène Boucher - ZI
78530 Buc
Tel: +33 (0)1 30 83 26 50
E-mail: sales@3d-plus.com
www.3d-plus.com

TECHNICAL CENTER (USA)
151 Callan Avenue - Suite #310
San Leandro, CA 94577
Tel: (510) 824-5591
E-mail: sales@3d-plus.com

DISTRIBUTOR

MEMORY MODULE
EEPROM
3DEE4M32VS4162
4 Mbit: 32-bit bus width, EEPROM based on 128K x 8

DC Operating Conditions and Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage</td>
<td>VCC</td>
<td>2.70</td>
<td>5.50</td>
<td>V</td>
</tr>
<tr>
<td>Input logic High Voltage</td>
<td>VIH</td>
<td>1.90</td>
<td>VCC + 0.30</td>
<td>V</td>
</tr>
<tr>
<td>Input logic Low Voltage</td>
<td>VIL</td>
<td>-0.30</td>
<td>0.80</td>
<td>V</td>
</tr>
<tr>
<td>Output logic High Voltage</td>
<td>VOH</td>
<td>0.80 x VCC</td>
<td>—</td>
<td>V</td>
</tr>
<tr>
<td>Output logic Low Voltage</td>
<td>VOL</td>
<td>—</td>
<td>0.40</td>
<td>V</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage relative to VSS</td>
<td>VIN</td>
<td>-0.5 to +7.0</td>
<td>V</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>TSTG</td>
<td>-55 to +125</td>
<td>°C</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>TJ</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>Thermal resistance, junction to case</td>
<td>RT(J-C)</td>
<td>10</td>
<td>°C/W</td>
</tr>
<tr>
<td>Power dissipation permitted(1)</td>
<td>P0</td>
<td>1</td>
<td>W</td>
</tr>
</tbody>
</table>

(1): PD = (T_{JC,max} - T_{C,max})/R_{TH(J-C)} as per definition of MIL-STD-883, Method 1012

DC Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>One bank operating current @ 1 MHz</td>
<td>ICC3_1MHz</td>
<td>64</td>
<td>mA</td>
</tr>
<tr>
<td>TTL standby current</td>
<td>ICC2</td>
<td>4</td>
<td>mA</td>
</tr>
<tr>
<td>CMOS standby current</td>
<td>ICC1</td>
<td>80</td>
<td>µA</td>
</tr>
</tbody>
</table>

3DEE4M32VS4162

Temperature Range
C = (0°C to +70°C)
I = (-40°C to +85°C)
M = (-55°C to +125°C)
S = Specific
N = Commercial Grade
B = Industrial Grade
S = Space Grade