MEMORY MODULE
EEPROM 512Kx8-SOP

EEPROM MODULE

3D EE4M08CS4029
4Mbit EEPROM organized as 512Kx8, based on 128Kx8

Features

- Organized as four banks of 128Kx8 bit.
- Single supply: 5V±10%.
- Access time 150ns (max).
- Power dissipation:
  - Active 20mW/MHz (typ).
  - Standby 0.5mW (max).
- On-chip latches: adress, data, #CE, #OE, #WE.
- Automatic byte write: 10ms (max).
  Automatic page write (128 bytes): 10ms (max).
- Data polling and RDY/#Busy.
- Reliable CMOS with MNOS cell technology
- 10^4 erase/write cycles (in page mode).
- 10 years data retention.
- 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 option for high reliability application
  (Space, etc...).

General description

The 3D EE4M08CS4029 is a 524,288 words of 8-bits.
Electrically Erasable and Programmable CMOS ROM.
It is organized as four banks of 1Mbit (128Kx8).
Each bank has 8-bit interface and is selected with specific #CE.
All other signals are common to the four 1Mbit EEPROM.
Each Bank operates at high speed, low power consumption and high reliability by employing advanced MNOS memory technology and CMOS process and circuitry technology.
The device is manufactured using 3D PLUS well known MCM-V patented technology.
It is particularly well suited for use in high reliability, high performance and high density system applications.
The 3D EE4M08CS4029 is packaged in a 40 pins SOP.

Pin Assignment (Top View)
SOP 40 - (Pitch: 0.50 mm)

Functional Block Diagram

(All other signals are common to the four memories)
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Mechanical Drawing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>VCC</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
<td>V</td>
</tr>
<tr>
<td>Input logic high voltage</td>
<td>VIL</td>
<td>-0.3</td>
<td>-</td>
<td>0.8</td>
<td>V</td>
</tr>
<tr>
<td>Input logic low voltage</td>
<td>VIL</td>
<td>-0.3</td>
<td>-</td>
<td>0.8</td>
<td>V</td>
</tr>
<tr>
<td>Output logic high Voltage</td>
<td>VOH</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>Output logic low voltage</td>
<td>VOL</td>
<td>-</td>
<td>-</td>
<td>0.4</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 on any pin relative to VSS</td>
<td>Vt</td>
<td>-0.5</td>
<td>V</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>TSTG</td>
<td>-55</td>
<td>°C</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>TJ</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>Thermale Resistance, Junction-to-Case</td>
<td>RJC</td>
<td>5</td>
<td>°C/W</td>
</tr>
<tr>
<td>Package Power dissipation permitted</td>
<td>PD</td>
<td>2</td>
<td>W</td>
</tr>
</tbody>
</table>

DC Characteristics @ 1MHz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating current (One bank active)</td>
<td>IsCO</td>
<td>15</td>
<td>mA</td>
</tr>
<tr>
<td>TTL Standby Current</td>
<td>IsB</td>
<td>4</td>
<td>mA</td>
</tr>
<tr>
<td>CMOS Standby Current</td>
<td>IsB1</td>
<td>80</td>
<td>µA</td>
</tr>
</tbody>
</table>

3D EE4M08CS4029

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

Part Number Marking
Part Option Marking
Pin 1 Indicator
3D Plus LOGO
Data Code (YYWW)
Serial Number Optional

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