

## 4M X 32 Bits (16MB) 80-Pin Uniform Sector Flash SIMM (3V Only)

### FEATURES

- Maximum Access Time of 70ns
- TTL compatible inputs and outputs
- Single 3.3V±0.3V power supply
- JEDEC standard
- Tin (option “T”) or gold (option “G”) edge connectors
- Power on reset options:
  - Power on reset circuitry on-board (Option “R”)
  - $\overline{\text{RST}}$  tied to pin 7 (Option “S”)
  - $\overline{\text{RST}}$  tied to  $V_{CC}$  (Option “V”)
- Am29LV033VC flash memory components
- Minimum 1,000,000 Write Cycles per Sector

### PIN CONFIGURATION

#### Pin Symbols

| Pin | Symbol                      | Pin | Symbol            | Pin | Symbol          |
|-----|-----------------------------|-----|-------------------|-----|-----------------|
| 1   | $V_{SS}$                    | 28  | $DQ_{31}$         | 55  | $DQ_{15}$       |
| 2   | $V_{CC}$                    | 29  | $\overline{WE}_2$ | 56  | $DQ_{14}$       |
| 3   | NC                          | 30  | NC                | 57  | $DQ_{13}$       |
| 4   | $\overline{OE}$             | 31  | $A_{21}$          | 58  | $DQ_{12}$       |
| 5   | $\overline{WE}_0$           | 32  | $A_{20}$          | 59  | $DQ_{11}$       |
| 6   | $\overline{WE}_1$           | 33  | $A_{19}$          | 60  | $DQ_{10}$       |
| 7   | NC/ $\overline{\text{RST}}$ | 34  | $A_{18}$          | 61  | $DQ_9$          |
| 8   | $DQ_{16}$                   | 35  | $A_{17}$          | 62  | $DQ_8$          |
| 9   | $DQ_{17}$                   | 36  | $A_{16}$          | 63  | $DQ_7$          |
| 10  | $DQ_{18}$                   | 37  | $A_{15}$          | 64  | $DQ_6$          |
| 11  | $DQ_{19}$                   | 38  | $A_{14}$          | 65  | $DQ_5$          |
| 12  | $DQ_{20}$                   | 39  | $A_{13}$          | 66  | $DQ_4$          |
| 13  | $DQ_{21}$                   | 40  | $A_{12}$          | 67  | $DQ_3$          |
| 14  | $DQ_{22}$                   | 41  | $A_{11}$          | 68  | $DQ_2$          |
| 15  | $DQ_{23}$                   | 42  | $A_{10}$          | 69  | $DQ_1$          |
| 16  | $DQ_{24}$                   | 43  | $A_9$             | 70  | $DQ_0$          |
| 17  | $DQ_{25}$                   | 44  | $A_8$             | 71  | NC              |
| 18  | $DQ_{26}$                   | 45  | $A_7$             | 72  | $V_{CC}$        |
| 19  | $DQ_{27}$                   | 46  | $A_6$             | 73  | PD <sub>1</sub> |
| 20  | $DQ_{28}$                   | 47  | $A_5$             | 74  | PD <sub>2</sub> |
| 21  | NC                          | 48  | $A_4$             | 75  | PD <sub>3</sub> |
| 22  | NC                          | 49  | $A_3$             | 76  | PD <sub>4</sub> |
| 23  | NC                          | 50  | $A_2$             | 77  | PD <sub>5</sub> |
| 24  | $\overline{CE}_0$           | 51  | $A_1$             | 78  | PD <sub>6</sub> |
| 25  | $V_{SS}$                    | 52  | $A_0$             | 79  | PD <sub>7</sub> |
| 26  | $DQ_{29}$                   | 53  | $\overline{WE}_3$ | 80  | $V_{SS}$        |
| 27  | $DQ_{30}$                   | 54  | $V_{SS}$          |     |                 |

### GENERAL DESCRIPTION

The SiliconTech SL29162-70(T/G)4(R/S/V) is a 4M x 32 bits flash Single In-line Memory Module (SIMM). The module consists of four 4M x 8 bits CMOS flash memory in 63-ball FBGA packages mounted on an 80-pin glass epoxy substrate. Decoupling capacitors of 0.1μF are mounted for the flash memory.

The module has a maximum access time of 70ns. The module uses a single 3.3V power supply.

Option “T” provides tin edge connectors and option “G” provides gold edge connectors.

Option “R” provides power-on reset circuitry on-board. Option “S” provides system control of power on reset by tying the reset signals to Pin 7. Option “V” has  $\overline{\text{RST}}$  tied to  $V_{CC}$ .

The module is intended for mounting into 80-pin edge connector sockets made with the same lead as the module (tin or gold).

The module uses the standard programming algorithms specified in the JEDEC standard for single power-supply flash components. The module uses AMD29LV033C flash memory components.

#### Pin Functions

| Pin Symbol                            | Pin Function    |
|---------------------------------------|-----------------|
| $A_0$ - $A_{21}$                      | Address Inputs  |
| $DQ_0$ - $DQ_{31}$                    | Data In/Out     |
| $\overline{CE}_0$                     | Chip Enable     |
| $\overline{WE}_0$ - $\overline{WE}_3$ | Write Enable    |
| $\overline{OE}$                       | Output Enable   |
| PD <sub>1</sub> -PD <sub>7</sub>      | Presence Detect |
| $\overline{\text{RST}}$               | Reset           |
| $V_{CC}$                              | Power           |
| $V_{SS}$                              | Ground          |
| NC                                    | No Connection   |

#### Presence Detect Pins\*

| Pin Name        | Signal   |
|-----------------|----------|
| PD <sub>1</sub> | $V_{SS}$ |
| PD <sub>2</sub> | NC       |
| PD <sub>3</sub> | NC       |
| PD <sub>4</sub> | NC       |
| PD <sub>5</sub> | $V_{SS}$ |
| PD <sub>6</sub> | $V_{SS}$ |
| PD <sub>7</sub> | NC       |

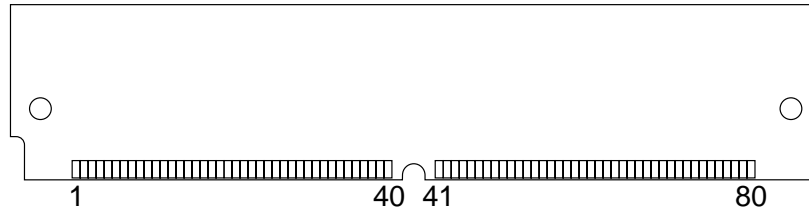
\* These Presence Detects are based on the sequence of existing Presence Detects defined in JEDEC Standard No. 21-C Page 4.4.7-3. Pin Connection Changing Available.

(Continued)

† “Advanced” indicates that this product is in Design Engineering and may or may not be moved into production. Parameters may change.

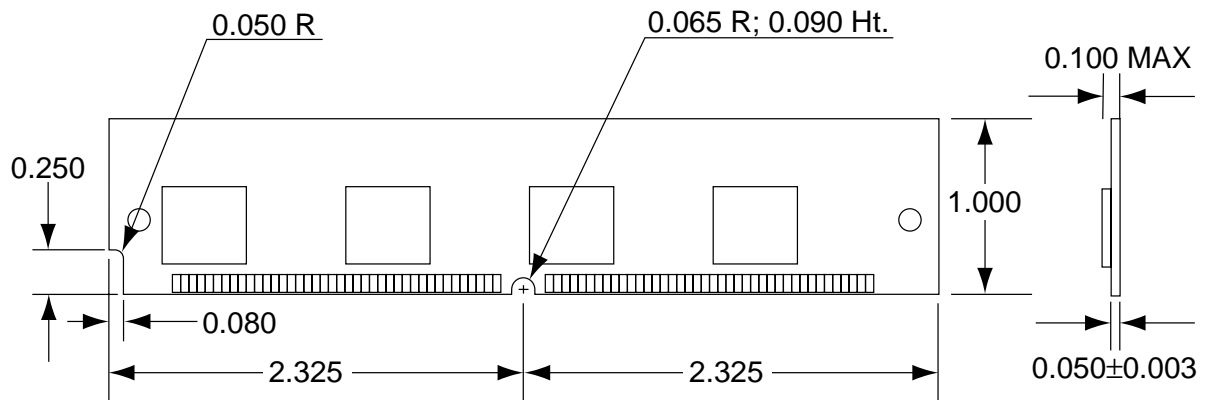
**PIN CONFIGURATION** *(Continued)*

**Pin Locations**



**PACKAGE DIMENSIONS**

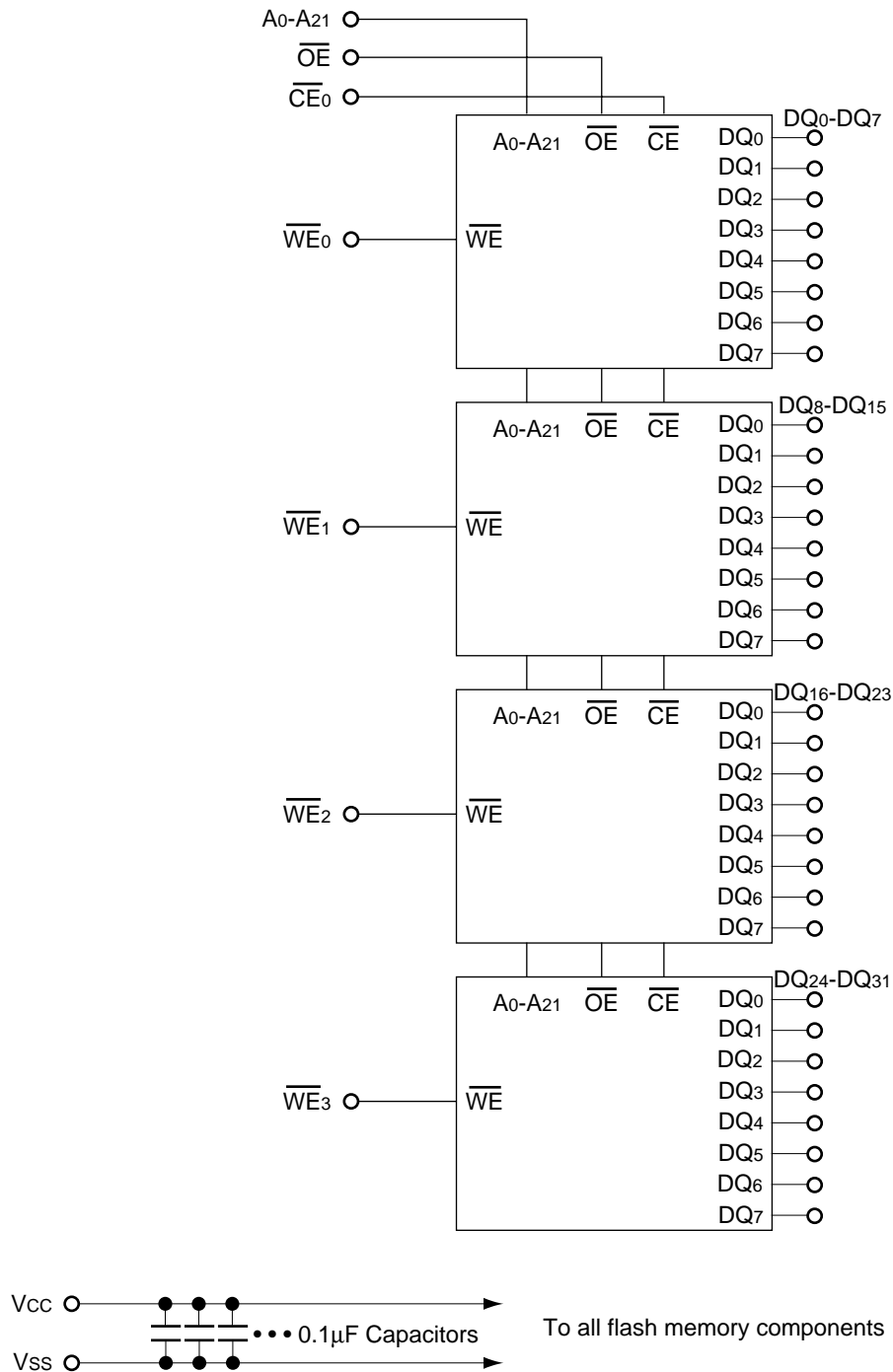
Units: Inches



TOLERANCES: ±0.005 UNLESS OTHERWISE SPECIFIED

TBD

FUNCTIONAL BLOCK DIAGRAM



Notes:

1.  $\overline{\text{RESET}}$  of all flash memory components is optionally tied to  $\overline{\text{RST}}$  (Pin 7 of PCB), a power supervisory circuit, or VCC.
2.  $\overline{\text{RD/BY}}$  of all flash memory components is not connected.
3. ACC of all flash memory components is tied to VCC.