

## 4M X 32 Bits Flash Memory Module (5V Only)

### FEATURES

- Access Time of 90ns
- TTL compatible inputs and outputs
- 5V only power supply
- JEDEC standard
- Tin (option "T") or gold (option "G") edge connectors
- Three power on reset options
  - No power on reset:  $\overline{RST}$  tied to  $V_{CC}$  (Option "V")
  - Power on reset:  $\overline{RST}$  tied to power supervisor circuit (Option "R")
  - System control of power on reset:  $\overline{RST}$  tied to pin 7 (Option "S"; this option is not JEDEC standard)
- AMD Part Number Am29F080-90 flash memory components

### PIN CONFIGURATION

Pin	Symbol	Pin	Symbol	Pin	Symbol
1	$V_{SS}$	28	DQ <sub>31</sub>	55	DQ <sub>15</sub>
2	$V_{CC}$	29	$\overline{WE}_2$	56	DQ <sub>14</sub>
3	NC	30	NC	57	DQ <sub>13</sub>
4	$\overline{OE}$	31	NC	58	DQ <sub>12</sub>
5	$\overline{WE}_0$	32	NC	59	DQ <sub>11</sub>
6	$\overline{WE}_1$	33	A <sub>19</sub>	60	DQ <sub>10</sub>
7	NC/ $\overline{RST}$	34	A <sub>18</sub>	61	DQ <sub>9</sub>
8	DQ <sub>16</sub>	35	A <sub>17</sub>	62	DQ <sub>8</sub>
9	DQ <sub>17</sub>	36	A <sub>16</sub>	63	DQ <sub>7</sub>
10	DQ <sub>18</sub>	37	A <sub>15</sub>	64	DQ <sub>6</sub>
11	DQ <sub>19</sub>	38	A <sub>14</sub>	65	DQ <sub>5</sub>
12	DQ <sub>20</sub>	39	A <sub>13</sub>	66	DQ <sub>4</sub>
13	DQ <sub>21</sub>	40	A <sub>12</sub>	67	DQ <sub>3</sub>
14	DQ <sub>22</sub>	41	A <sub>11</sub>	68	DQ <sub>2</sub>
15	DQ <sub>23</sub>	42	A <sub>10</sub>	69	DQ <sub>1</sub>
16	DQ <sub>24</sub>	43	A <sub>9</sub>	70	DQ <sub>0</sub>
17	DQ <sub>25</sub>	44	A <sub>8</sub>	71	NC
18	DQ <sub>26</sub>	45	A <sub>7</sub>	72	$V_{CC}$
19	DQ <sub>27</sub>	46	A <sub>6</sub>	73	PD <sub>1</sub>
20	DQ <sub>28</sub>	47	A <sub>5</sub>	74	PD <sub>2</sub>
21	$\overline{CE}_3$	48	A <sub>4</sub>	75	PD <sub>3</sub>
22	$\overline{CE}_2$	49	A <sub>3</sub>	76	PD <sub>4</sub>
23	$\overline{CE}_1$	50	A <sub>2</sub>	77	PD <sub>5</sub>
24	$\overline{CE}_0$	51	A <sub>1</sub>	78	PD <sub>6</sub>
25	$V_{SS}$	52	A <sub>0</sub>	79	PD <sub>7</sub>
26	DQ <sub>29</sub>	53	$\overline{WE}_3$	80	$V_{SS}$
27	DQ <sub>30</sub>	54	$V_{SS}$		

### GENERAL DESCRIPTION

The SiliconTech SL29160-90(T/G)(V/R/S) is a 4M x 32 bits flash memory module. The SL29160-90(T/G)(V/R/S) consists of sixteen 1M x 8 bits CMOS flash memory in 40-pin TSOP packages mounted on an 80-pin glass epoxy substrate. Decoupling capacitors of 0.1 $\mu$ F are mounted for the flash memory.

The SL29160-90(T/G)(V/R/S) is a 80-pin flash memory module with a maximum access time of 90ns and 5V only power supply. Option "T" provides tin edge connectors and option "G" provides gold edge connectors. Option "R" provides power on reset through a power supervisor circuit; option "S" provides system control of power on reset by tying the reset signals to Pin 7; and option "V" provides no power on reset.

The SL29160-90(T/G)(V/R/S) is intended for mounting into 80-pin edge connector sockets. The SL29160-90(T/G)(V/R/S) uses the standard programming algorithms for AMD Am29F080-90 flash memory components.

### Pin Names

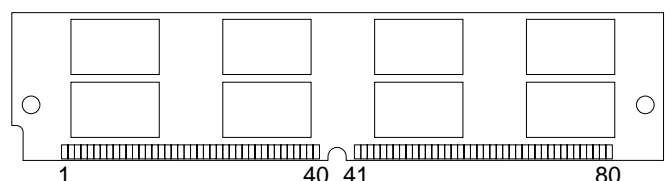
Pin Name	Pin Function
A <sub>0</sub> -A <sub>19</sub>	Address Inputs
DQ <sub>0</sub> -DQ <sub>31</sub>	Data In/Out
$\overline{CE}_0$ - $\overline{CE}_3$	Chip Enable
$\overline{WE}_0$ - $\overline{WE}_3$	Write Enable
$\overline{OE}$	Output Enable
PD <sub>1</sub> -PD <sub>7</sub>	Presence Detect
$\overline{RST}$	Reset
$V_{CC}$	Power (+5V)
$V_{SS}$	Ground
NC	No Connection

### Presence Detect Pins\*

(Optional)

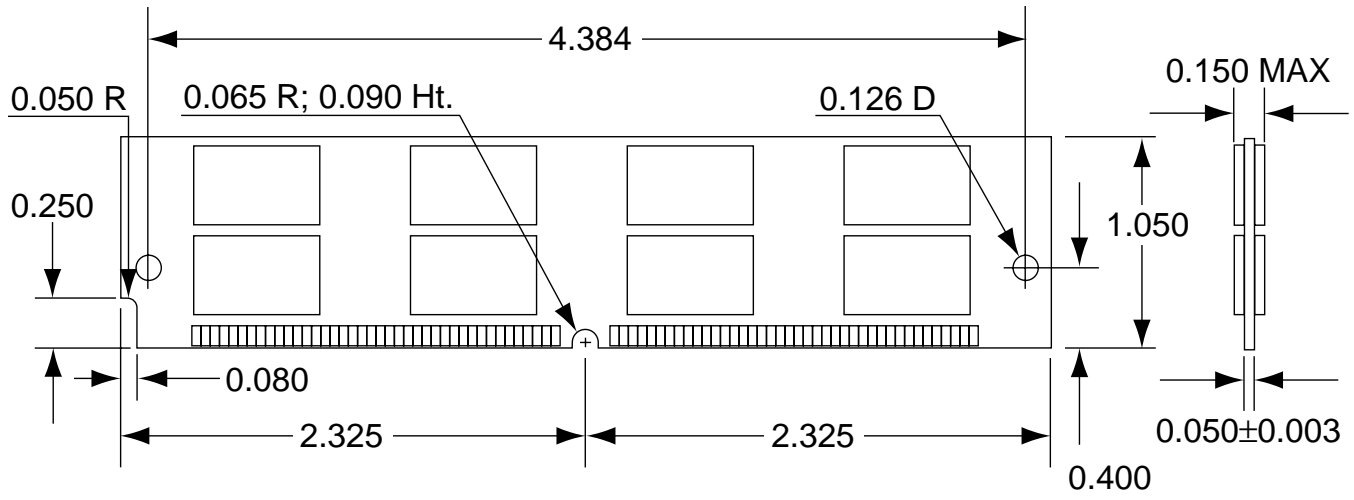
Pin Name	Signal
PD <sub>1</sub>	NC
PD <sub>2</sub>	NC
PD <sub>3</sub>	$V_{SS}$
PD <sub>4</sub>	$V_{SS}$
PD <sub>5</sub>	NC
PD <sub>6</sub>	NC
PD <sub>7</sub>	$V_{SS}$

\* Pin Connection Changing Available



PACKAGE DIMENSIONS

Units: Inches



446A

TOLERANCES: ±0.005 UNLESS OTHERWISE SPECIFIED

FUNCTIONAL BLOCK DIAGRAM

