SGS-THOMSON MICROELECTRONICS

GS-F8MB-SIMM

8 MByte SIMM FLASH MEMORY MODULE

PRELIMINARY DATA

- 80 PINS JEDEC 21-C package
- FAST ACCESS TIME: 70ns
- 5V ± 10% SUPPLY VOLTAGE for PROGRAM and ERASE OPERATIONS
- 5V ± 10% SUPPLY VOLTAGE in READ OPERATIONS
- BYTE PROGRAMMING TIME: 10µs typical
- ERASE TIME
  - Sector: 1.0 sec typical
  - Bulk: 2.5 sec typical
- PROGRAM/ERASE CONTROLLER (P/E.C.)
  - Program Byte-by-Byte
  - Data Polling and Toggle Protocol for P/E.C. Status
- MEMORY ERASE in SECTORS
  - 8 Sectors of 64K Bytes each
  - Sector Protection
  - Multisector Erase
- ERASE SUSPEND and RESUME MODES
- 100,000 PROGRAM/ERASE CYCLES per SECTOR

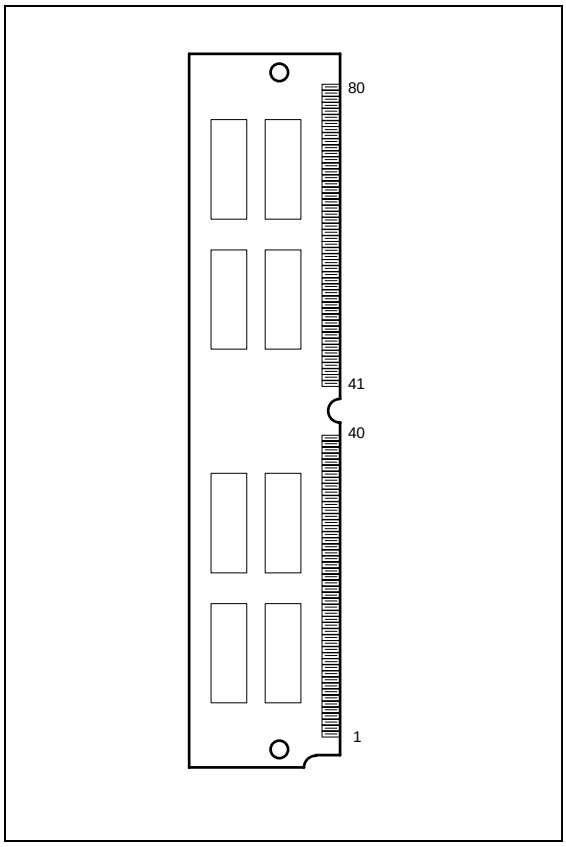


Table 1. Signal Names

A0-A18	Address Inputs
DQ0-DQ31	Data Input / Outputs
CE0-CE3	Chip Enable
OE	Output Enable
WE0-WE3	Write Enable
$\overline{\text{PD1-PD4}}$	Presence & Module Type Detect
$\overline{\text{PD5-PD7}}$	Module Speed Detect
VCC-VSS	Power Supply - Ground

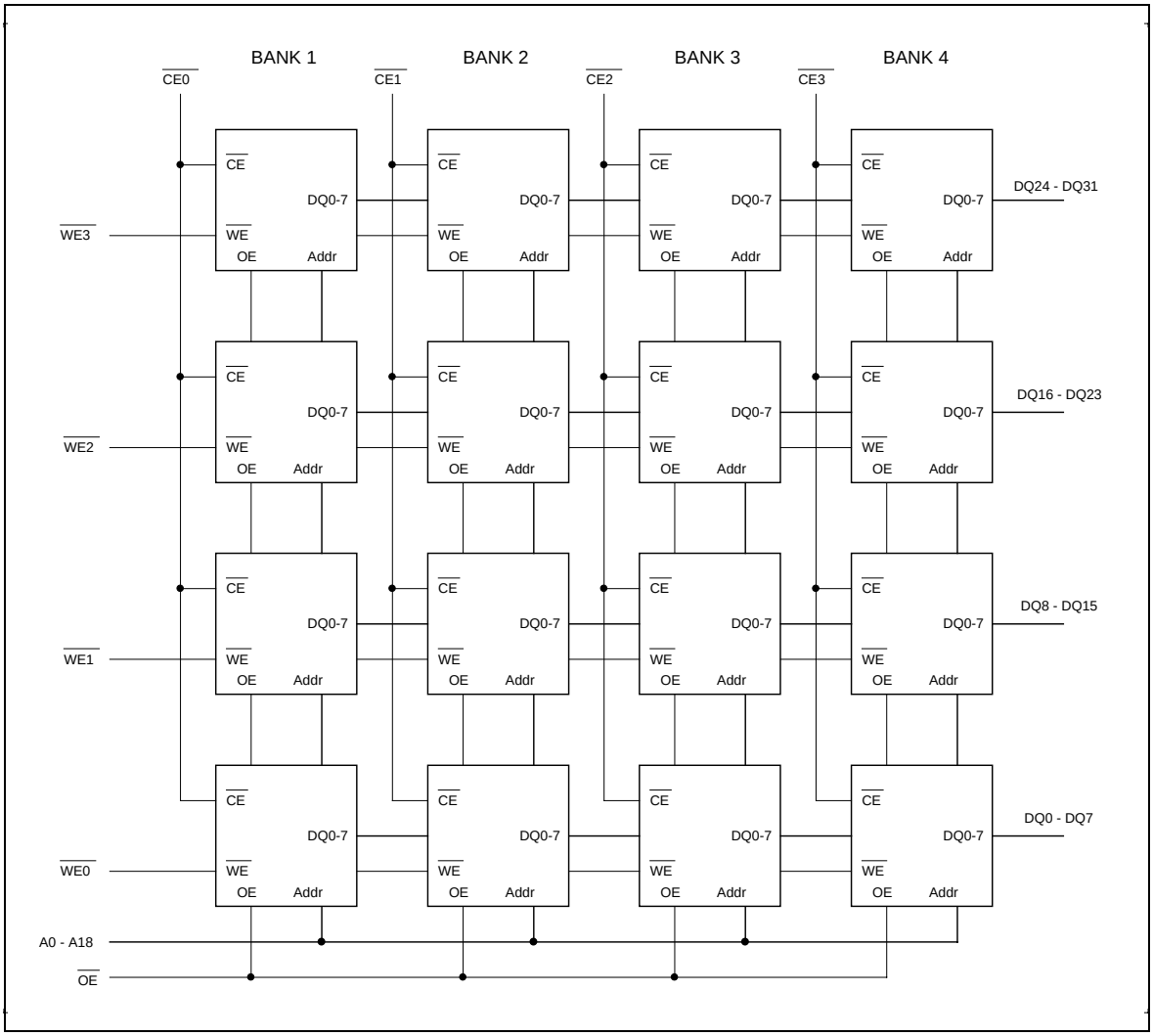
DESCRIPTION

The GS-F8MB-SIMM is an 8 Mbyte SIMM memory module built around 16 x M29F040 FLASH memory chips (please see relevant data sheet for all detailed informations about the chip performances). The devices are mounted on a Jedec 21-C standardized SIMM printed circuit.

Organisation

Figure 1 shows the block diagram. The FLASH module is organized as 16 x 512K x 8 bits with address lines A0-A18 and Data Inputs/Outputs DQ0 to 7, DQ8 to 15, DQ16 to 23 and DQ24 to 31.

Fig. 1. Block diagram



Memory control is provided by 4 Chip Enable (CE0, 1,2,3) inputs used to address the 4 memory banks and by 4 Write Enable inputs used to select through the DQ..... groups. An Output Enable input is used to read the stored data.

Erase and Program Functions are performed through the internal Program/Erase Controller (P/E.C.).

The Data Output chip bits DQ7 and DQ6 (and the corresponding DQ15 & 14, DQ23 & 22, DQ31 & 30) provide polling or toggle signals during Automatic Program or Erase to indicate the Ready/Busy state of the internal Program/Erase Controller.

Configuration & speed pins

PD1-PD7 pins are used by the SIMM module to inform the motherboard about its relevant configuration and also about the speed of the chips used, as specified in the Jedec 21-C standard.

As the module allocates 8Mbyte memory, using 70 ns chips, configuration is the following:

PD1 : Vss PD2 : NC PD3 : NC PD4 : Vss

PD5 : NC PD6 : NC PD7 : Vss

Figure 2. Mechanical dimensions

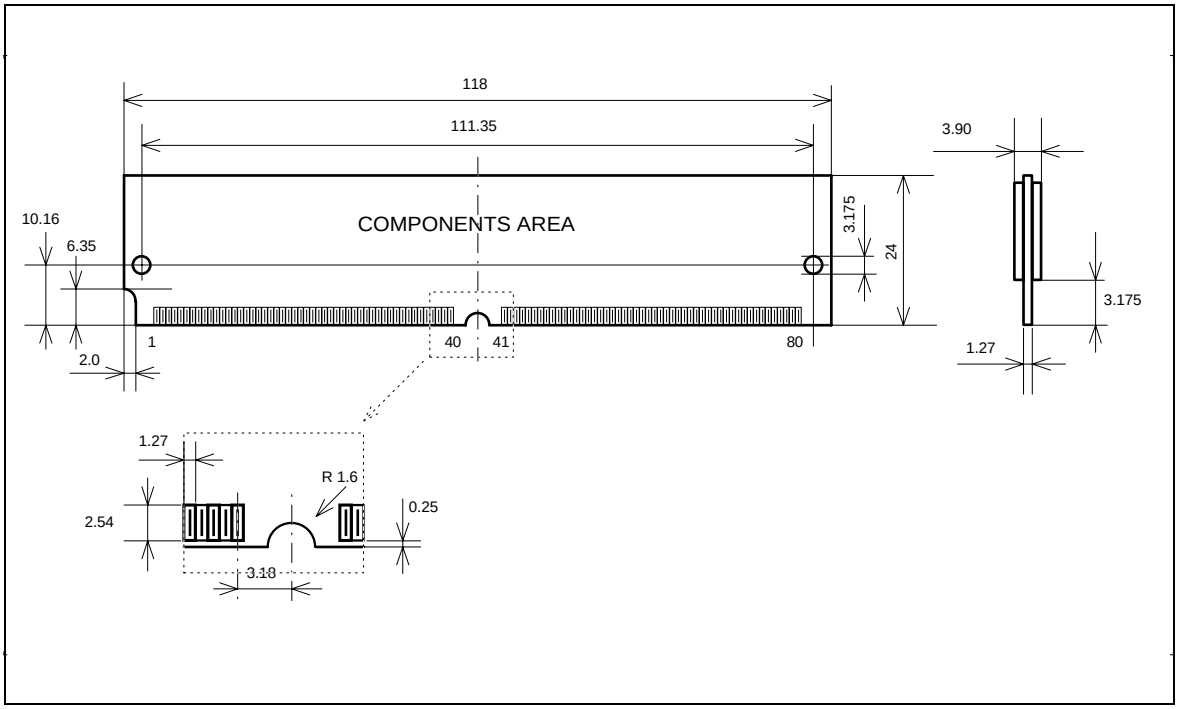


Table 1. Pin configuration

Pin	Name	Pin	Name	Pin	Name	Pin	Name
1	VSS	21	CE3	41	A11	61	DQ9
2	VCC	22	CE2	42	A10	62	DQ8
3	NC	23	CE1	43	A9	63	DQ7
4	OE	24	CE0	44	A8	64	DQ6
5	WE0	25	VSS	45	A7	65	DQ5
6	WE1	26	DQ29	46	A6	66	DQ4
7	NC	27	DQ30	47	A5	67	DQ3
8	DQ16	28	DQ31	48	A4	68	DQ2
9	DQ17	29	WE2	49	A3	69	DQ1
10	DQ18	30	NC	50	A2	70	DQ0
11	DQ19	31	NC	51	A1	71	NC
12	DQ20	32	NC	52	A0	72	VCC
13	DQ21	33	NC	53	WE3	73	PD1
14	DQ22	34	A18	54	VSS	74	PD2
15	DQ23	35	A17	55	DQ15	75	PD3
16	DQ24	36	A16	56	DQ14	76	PD4
17	DQ25	37	A15	57	DQ13	77	PD5
18	DQ26	38	A14	58	DQ12	78	PD6
19	DQ27	39	A13	59	DQ11	79	PD7
20	DQ28	40	A12	60	DQ10	80	VSS