# SGS-THOMSON
MICROELECTRONICS

16 Mb (2Mb x 8) ZEROPOWER® SRAM

DATA BRIEFING

- INTEGRATED LOW POWER SRAM, POWER-FAIL CONTROL CIRCUIT and BATTERIES
- CONVENTIONAL SRAM OPERATION; UNLIMITED WRITE CYCLES
- 10 YEARS of DATA RETENTION in the ABSENCE of POWER
- AUTOMATIC POWER-FAIL CHIP DESELECT and WRITE PROTECTION
- WRITE PROTECT VOLTAGES (V_{PFD} = Power-fail Deselect Voltage):
  - M48Z2M1: $4.5V \leq V_{PFD} \leq 4.75V$
  - M48Z2M1Y: $4.2V \leq V_{PFD} \leq 4.50V$
- BATTERIES ARE INTERNALLY ISOLATED UNTIL POWER IS APPLIED
- PIN and FUNCTION COMPATIBLE with JEDEC STANDARD 2Mb x 8 SRAMs

PMLDIP36 (PL)
Module
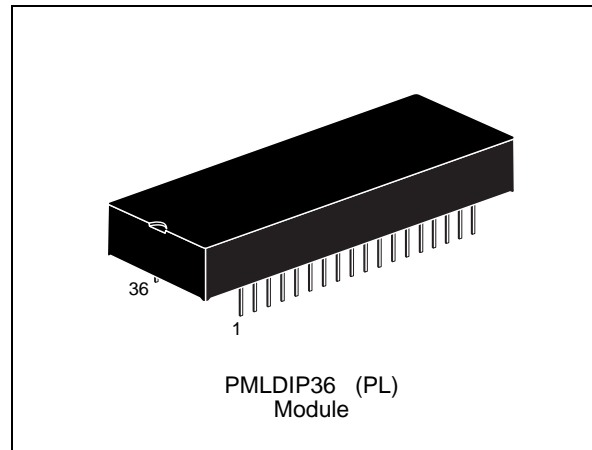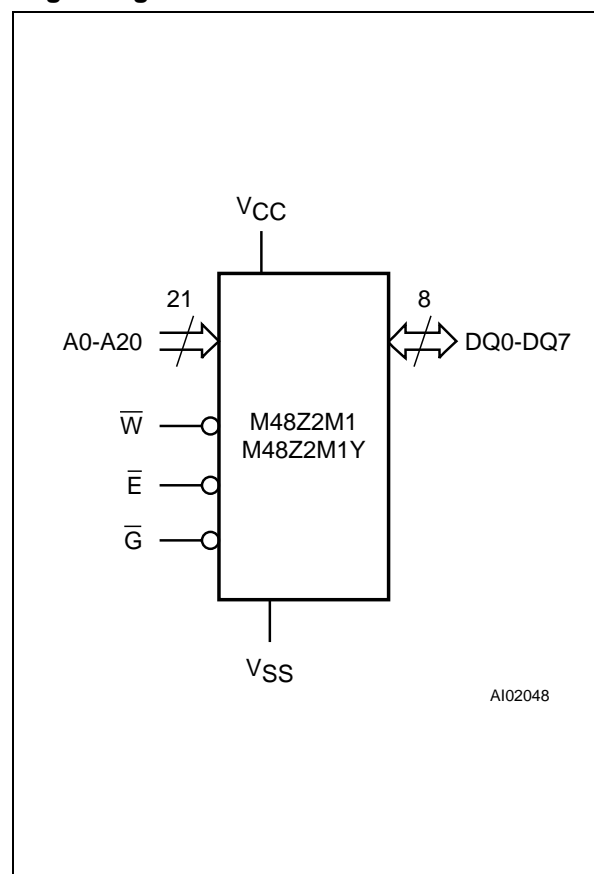
DESCRIPTION

The M48Z2M1/2M1Y ZEROPOWER® RAM is a non-volatile 16,777,216 bit Static RAM organized as 2,097,152 words by 8 bits. The device combines two internal lithium batteries, CMOS SRAMs and a control circuit in a plastic 36 pin DIP long Module.

The ZEROPOWER RAM replaces industry standard SRAMs. It provides the nonvolatility of PROMs without any requirement for special write timing or limitations on the number of writes that can be performed.
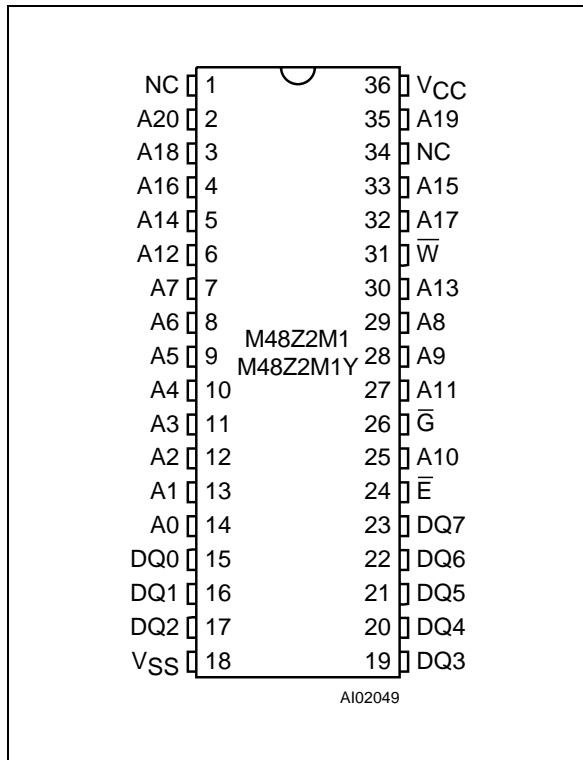
The M48Z2M1/2M1Y has its own Power-fail Detect Circuit. The control circuitry constantly monitors the single 5V supply for an out of tolerance condition. When V_{CC} is out of tolerance, the circuit write protects the SRAM, providing a high degree of data security in the midst of unpredictable system operations brought on by low V_{CC}. As V_{CC} falls below approximately 3V, the control circuitry connects the batteries which sustain data until valid power returns.

Logic Diagram

AI02048

Complete data available on *DATA-on-DISC CD-ROM* or at *www.st.com*

DIP Pin Connections

NC	1	36	V_CC
A20	2	35	A19
A18	3	34	NC
A16	4	33	A15
A14	5	32	A17
A12	6	31	$\overline{W}$
A7	7	30	A13
A6	8	29	A8
A5	9	28	A9
A4	10	27	A11
A3	11	26	$\overline{G}$
A2	12	25	A10
A1	13	24	$\overline{E}$
A0	14	23	DQ7
DQ0	15	22	DQ6
DQ1	16	21	DQ5
DQ2	17	20	DQ4
V_SS	18	19	DQ3

M48Z2M1
M48Z2M1Y

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Warning: NC = Not Connected.

Signal Names

A0-A20	Address Inputs
DQ0-DQ7	Data Inputs / Outputs
$\overline{E}$	Chip Enable
$\overline{G}$	Output Enable
$\overline{W}$	Write Enable
V_CC	Supply Voltage
V_SS	Ground

Ordering Information Scheme

For a list of available options or for further information on any aspect of this device, please contact the SGS-THOMSON Sales Office nearest to you.

Example: M48Z2M1Y   -70   PL   1

Supply Voltage and Write Protect Voltage	
2M1	V_{CC} = 4.75V to 5.5V V_{PFD} = 4.5V to 4.75V
2M1Y	V_{CC} = 4.5V to 5.5V V_{PFD} = 4.2V to 4.5V

Speed	
-70	70ns

Package	
PL	PMLDIP36

Temperature Range	
1	0 to 70 °C
9 [1]	Extended Temperature

Note: 1. Contact Sales Offices for availability of Extended Temperature.