

## 3.3V-5V 1 Mb (128K x 8) TIMEKEEPER<sup>®</sup> SRAM

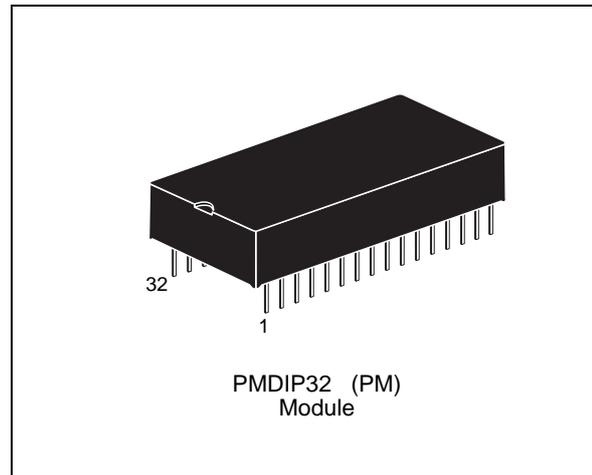
### DATA BRIEFING

- INTEGRATED ULTRA LOW POWER SRAM, REAL TIME CLOCK, POWER-FAIL CONTROL CIRCUIT, BATTERY and CRYSTAL
- YEAR 2000 COMPLIANT
- BCD CODED YEAR, MONTH, DAY, DATE, HOURS, MINUTES and SECONDS
- BATTERY LOW WARNING FLAG
- AUTOMATIC POWER-FAIL CHIP DESELECT and WRITE PROTECTION
- WRITE PROTECT VOLTAGES ( $V_{PFD}$  = Power-fail Deselect Voltage):
  - M48T129Y:  $4.20V \leq V_{PFD} \leq 4.50V$
  - M48T129V:  $2.70V \leq V_{PFD} \leq 3.00V$
- CONVENTIONAL SRAM OPERATION; UNLIMITED WRITE CYCLES
- SOFTWARE CONTROLLED CLOCK CALIBRATION for HIGH ACCURACY APPLICATIONS
- 10 YEARS of DATA RETENTION and CLOCK OPERATION in the ABSENCE of POWER
- SELF-CONTAINED BATTERY and CRYSTAL in DIP PACKAGE
- MICROPROCESSOR POWER-ON RESET (Valid even during battery back-up mode)
- PROGRAMMABLE ALARM OUTPUT ACTIVE in the BATTERY BACK-UP MODE

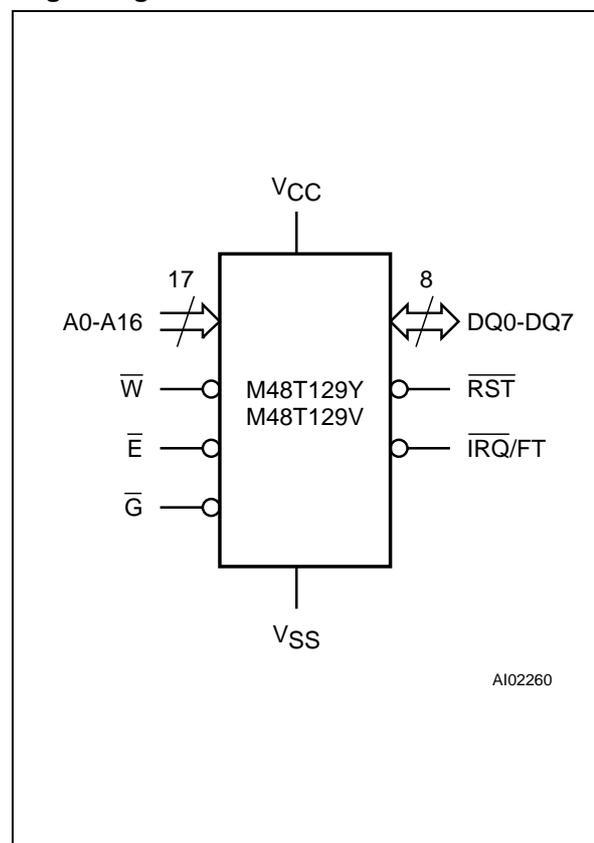
### DESCRIPTION

The M48T129Y/129V TIMEKEEPER<sup>®</sup> RAM is a non-volatile 1,048,576 bit static RAM and real time clock organized as 131,072 words by 8 bits. System integration features include Programmable Alarms, Battery Low status Flag and a Power-on Reset. The special 32-pin DIP package provides a highly integrated battery back-up memory and real time clock solution.

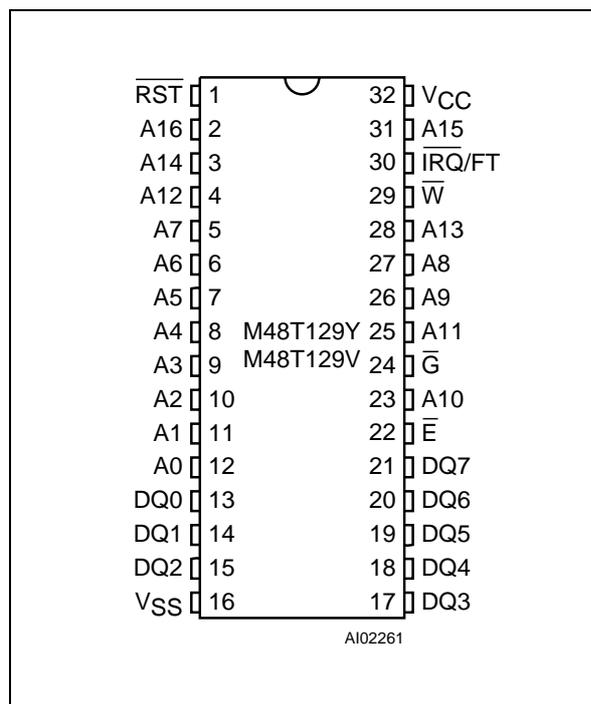
The memory locations providing user accessible BYTEWIDE<sup>™</sup> clock information are in the bytes with addresses 7FF1h and 7FF9h-1FFFh. These clock locations contain the century, year, month, date, day, hour, minute and second in 24 hour BCD format. Corrections for 28, 29 (leap year, including year 2000), 30, and 31 day months are made automatically. Reference the M48T201 data sheet for complete register map.



### Logic Diagram



## DIP Pin Connections



## Signal Names

|                 |                                   |
|-----------------|-----------------------------------|
| A0-A16          | Address Inputs                    |
| DQ0-DQ7         | Data Inputs / Outputs             |
| $\bar{E}$       | Chip Enable Input                 |
| $\bar{G}$       | Output Enable Input               |
| $\bar{W}$       | Write Enable Input                |
| $\bar{RST}$     | Reset Output                      |
| $\bar{IRQ/FT}$  | Interrupt / Frequency Test Output |
| V <sub>CC</sub> | Supply Voltage                    |
| V <sub>SS</sub> | 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: M48T129Y -70 PM 1

|   |   |
|---|---|
| <b>Supply Voltage and Write Protect Voltage</b> |   |
| 129Y  | V <sub>CC</sub> = 4.50V to 5.50V<br>V <sub>PFD</sub> = 4.20V to 4.50V |
| 129V  | V <sub>CC</sub> = 3.00V to 3.60V<br>V <sub>PFD</sub> = 2.70V to 3.00V |
| <b>Speed</b>                                    |   |
| -70   | 70ns (M48T129Y)   |
| -85   | 85ns (M48T129V)   |
| <b>Package</b>                                  |   |
| PM  | PMDIP32   |
| <b>Temperature Range</b>                        |   |
| 1   | 0 to 70 °C  |