



## M48T559Y

### 64 Kbit (8Kb x 8) TIMEKEEPER<sup>®</sup> SRAM with ADDRESS/DATA MULTIPLEXED

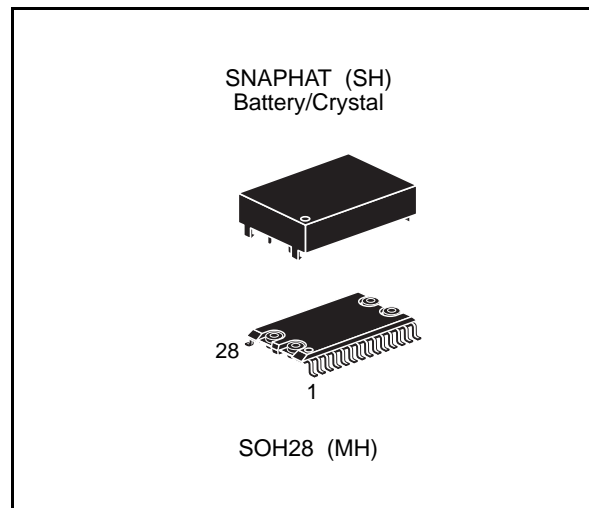
#### DATA BRIEFING

- SOFTWARE and HARDWARE RESET for WATCHDOG TIMER
- REGISTER COMPATIBLE with M48T59 TIMEKEEPER SRAM
- ADDRESS/DATA MULTIPLEXED I/O PINS
- WATCHDOG TIMER - MONITORS OUT of CONTROL PROCESSOR or HUNG BUS
- ALARM with WAKE-UP in BATTERY MODE
- INTEGRATED ULTRA LOW POWER SRAM, REAL TIME CLOCK, POWER-FAIL CONTROL CIRCUIT and BATTERY
- FREQUENCY TEST OUTPUT for REAL TIME CLOCK
- AUTOMATIC POWER-FAIL CHIP DESELECT and WRITE PROTECTION
- WRITE PROTECT VOLTAGE ( $V_{PFD}$  = Power-fail Deselect Voltage):
  - M48T559Y:  $4.2V \leq V_{PFD} \leq 4.5V$
- PACKAGING INCLUDES a 28-LEAD SOIC and SNAPHAT<sup>®</sup> TOP (to be Ordered Separately)
- SOIC PACKAGE PROVIDES DIRECT CONNECTION for a SNAPHAT TOP CONTAINS the BATTERY and CRYSTAL
- MICROPROCESSOR POWER-ON RESET (Valid even during battery back-up mode)
- PROGRAMMABLE ALARM OUTPUT ACTIVE in the BATTERY BACK-UP MODE

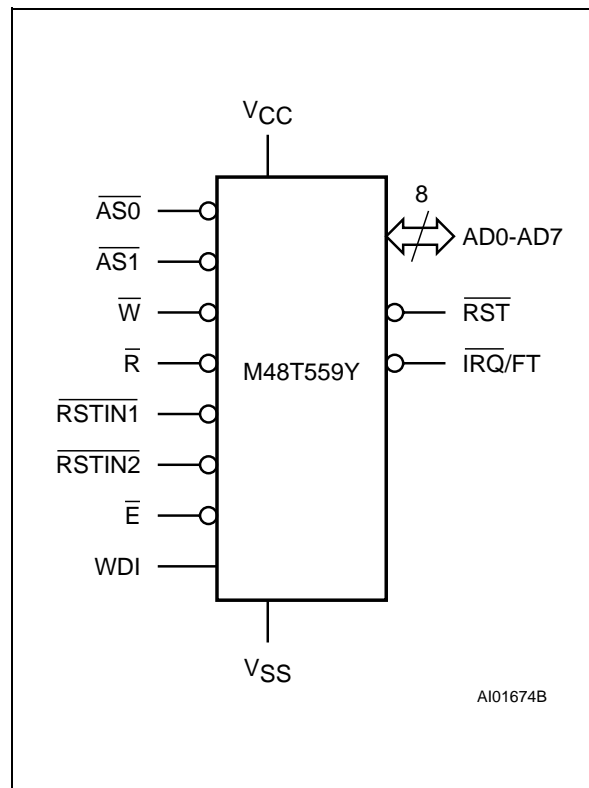
#### DESCRIPTION

The M48T559Y TIMEKEEPER<sup>®</sup> RAM is an 8K x 8 non-volatile static RAM and real time clock. The monolithic chip is available in the SNAPHAT package to provide a highly integrated battery backed-up memory and real time clock solution.

The 28 pin 330mil SOIC provides sockets with gold plated contacts at both ends for direct connection to a separate SNAPHAT housing containing the battery and crystal. The unique design allows the SNAPHAT battery package to be mounted on top of the SOIC package after the completion of the surface mount process.

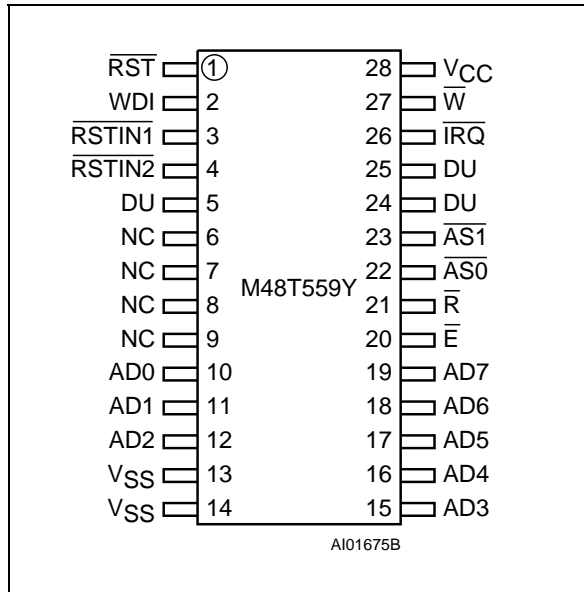


#### Logic Diagram



## M48T559Y

### SOIC Pin Connections



**Warning:** NC = Not Connected; DU = Do not Use, must be connected to  $V_{CC}$  or  $V_{SS}$ .

### Signal Names

|               |  |
|---------------|--|
| AD0-AD7       | Address/Data                                   |
| AS0-AS1       | Address Strobes                                |
| W             | Write Enable                                   |
| R             | Read Enable                                    |
| E             | Chip Enable                                    |
| WDI           | Watchdog Input                                 |
| RSTIN1-RSTIN2 | Reset Input                                    |
| RST           | Power Fail Reset Output (Open Drain)           |
| IRQ/FT        | Interrupt / Frequency Test Output (Open Drain) |
| $V_{CC}$      | 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 STMicroelectronics Sales Office nearest to you.

Example: M48T559Y MH 1 TR

|   |   |
|---|---|
| <b>Supply Voltage and Write Protect Voltage</b> |   |
| 559Y  | $V_{CC} = 4.5V$ to $5.5V$<br>$V_{PFD} = 4.2V$ to $4.5V$ |
| <b>Package</b>                                  |   |
| MH <sup>(1)</sup>                               | SOH28   |
| <b>Temperature Range</b>                        |   |
| 1   | 0 to 70 °C  |
| <b>Shipping Method for SOIC</b>                 |   |

blank Tubes

TR Tape & Reel

**Note:** 1. The SOIC package (SOH28) requires the battery/crystal package (SNAPHAT) which is ordered separately under the part number "M4T28-BR12SH1" in plastic tube or "M4T28-BR12SH1TR" in Tape & Reel form.

**Caution:** Do not place the SNAPHAT battery/crystal package "M4T28-BR12SH1" in conductive foam since this will drain the lithium button-cell battery.