



# M48T37Y M48T37V

## 3.3V-5V 256 Kbit (32Kb x8) TIMEKEEPER® SRAM

### DATA BRIEFING

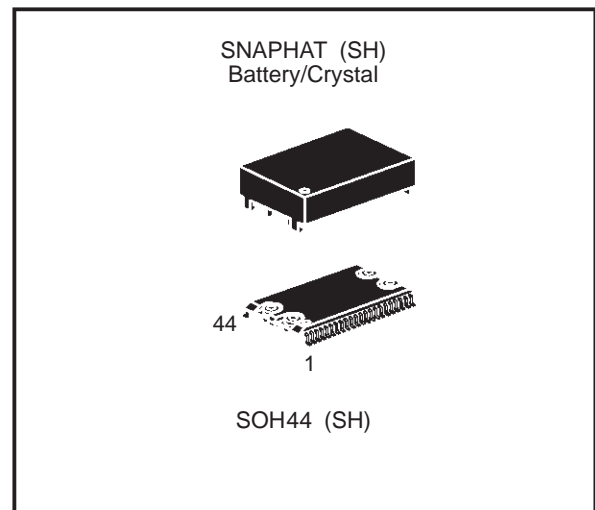
- INTEGRATED ULTRA-LOW POWER SRAM, REAL TIME CLOCK, POWER-FAIL CONTROL CIRCUIT and BATTERY
- FREQUENCY TEST OUTPUT for REAL TIME CLOCK
- YEAR 2000 COMPLIANT
- AUTOMATIC POWER-FAIL CHIP DESELECT and WRITE PROTECTION
- WATCHDOG TIMER
- WRITE PROTECT VOLTAGE ( $V_{PDF}$  = Power-Fail Deselect Voltage):
  - M48T37Y:  $4.2V \leq V_{PDF} \leq 4.5V$
  - M48T37V:  $2.7V \leq V_{PDF} \leq 3.0V$
- PACKAGING INCLUDES a 44-LEAD SOIC and SNAPHAT® TOP (to be Ordered Separately)
- SOIC PACKAGE PROVIDES DIRECT CONNECTION for a SNAPHAT TOP which CONTAINS the BATTERY and CRYSTAL
- MICROPROCESSOR POWER-ON RESET (Valid even during battery back-up mode)
- PROGRAMMABLE ALARM OUTPUT ACTIVE in the BATTERY BACKED-UP

### DESCRIPTION

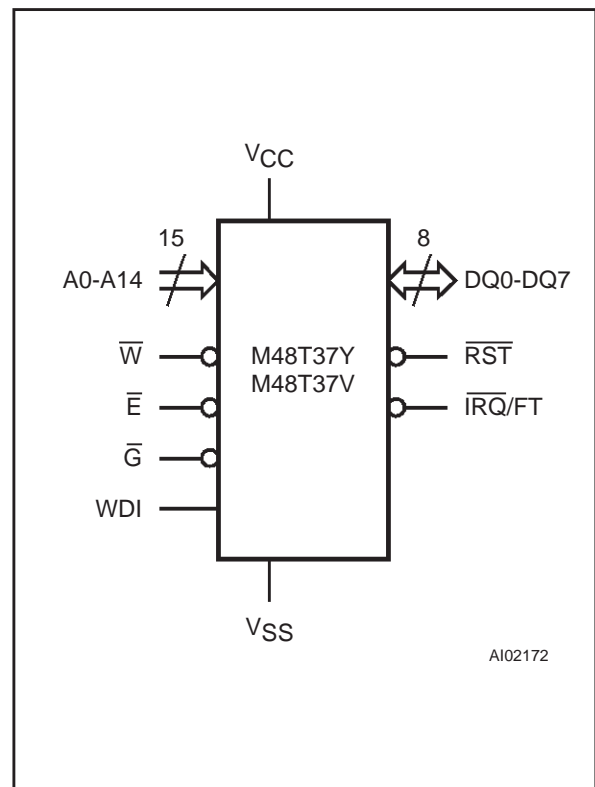
The M48T37Y/37V TIMEKEEPER® RAM is a 32Kb x8 non-volatile static RAM and real time clock. The monolithic chip is available in a special package which provides a highly integrated battery backed-up memory and real time clock solution.

The 44 lead 330mil SOIC package 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.

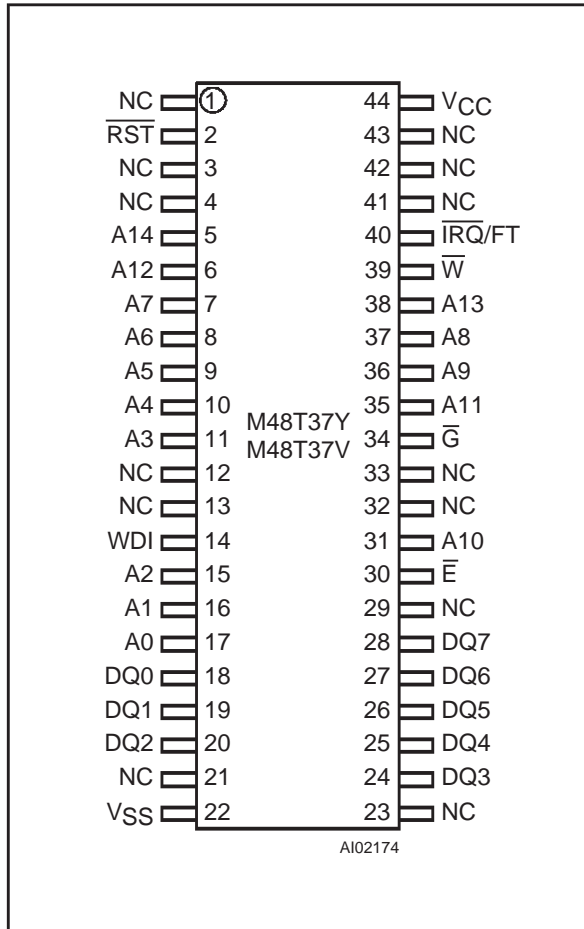
Insertion of the SNAPHAT housing after reflow prevents potential battery and crystal damage due to the high temperatures required for device surface-mounting. The SNAPHAT housing is keyed to prevent reverse insertion.



### Logic Diagram



## SOIC Pin Connections



Warning: NC = Not Connected.

## 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 <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 STMicroelectronics Sales Office nearest to you.

Example: M48T37Y -70 MH 1 TR

<b>Supply Voltage and Write Protect Voltage</b>	
37Y	V <sub>CC</sub> = 4.5V to 5.5V V <sub>PFD</sub> = 4.2V to 4.5V
37V	V <sub>CC</sub> = 3.0V to 3.6V V <sub>PFD</sub> = 2.7V to 3.0V
<b>Speed</b>	
-70	70ns
-100	100ns
<b>Package</b>	
MH <sup>(1)</sup>	SOH44
<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 (SOH44) requires the battery 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 package "M4T28-BR12SH1" in conductive foam since will drain the lithium button-cell battery.