![SGS-THOMSON MICROELECTRONICS logo]

M48Z08
M48Z18

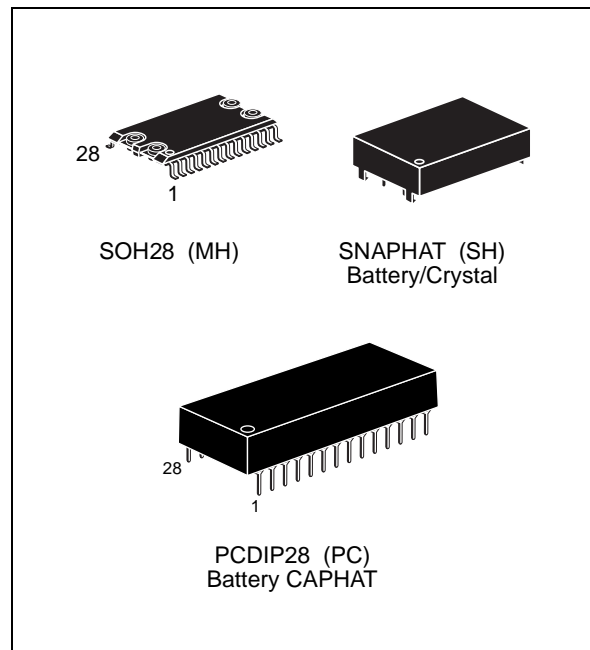# 64Kb (8K x 8) ZEROPOWER® SRAM

- INTEGRATED ULTRA LOW POWER SRAM, POWER-FAIL CONTROL CIRCUIT and BATTERY
- UNLIMITED WRITE CYCLES
- READ CYCLE TIME EQUALS WRITE CYCLE TIME
- AUTOMATIC POWER-FAIL CHIP DESELECT and WRITE PROTECTION
- WRITE PROTECT VOLTAGES (V_{PFD} = Power-fail Deselect Voltage):
  – M48Z08: 4.50V $\leq$ V_{PFD} $\leq$ 4.75V
  – M48Z18: 4.20V $\leq$ V_{PFD} $\leq$ 4.50V
- SELF-CONTAINED BATTERY in the CAPHAT DIP PACKAGE
- PACKAGING INCLUDES a 28 LEAD SOIC and SNAPHAT® TOP (to be Ordered Separately)
- SOIC PACKAGE PROVIDES DIRECT CONNECTION for a SNAPHAT TOP which CONTAINS the BATTERY
- PIN and FUNCTION COMPATIBLE with the DS1225 and JEDEC STANDARD 8K x 8 SRAMs
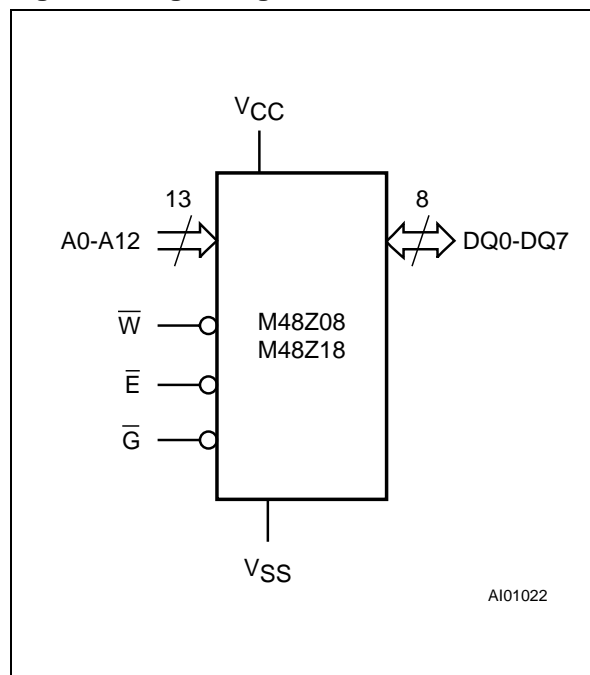

SOH28 (MH)   SNAPHAT (SH)
                    Battery/Crystal

PCDIP28 (PC)
Battery CAPHAT

DESCRIPTION

The M48Z08/18 ZEROPOWER® RAM is an 8K x 8 non-volatile static RAM which is pin and functional compatible with the DS1225. The monolithic chip is available in two special packages to provide a highly integrated battery backed-up memory solution.

The M48Z08/18 is a non-volatile pin and function equivalent to any JEDEC standard 8K x 8 SRAM. It also easily fits into many ROM, EPROM, and EEPROM sockets, providing the non-volatility of PROMs without any requirement for special write timing or limitations on the number of writes that can be performed.
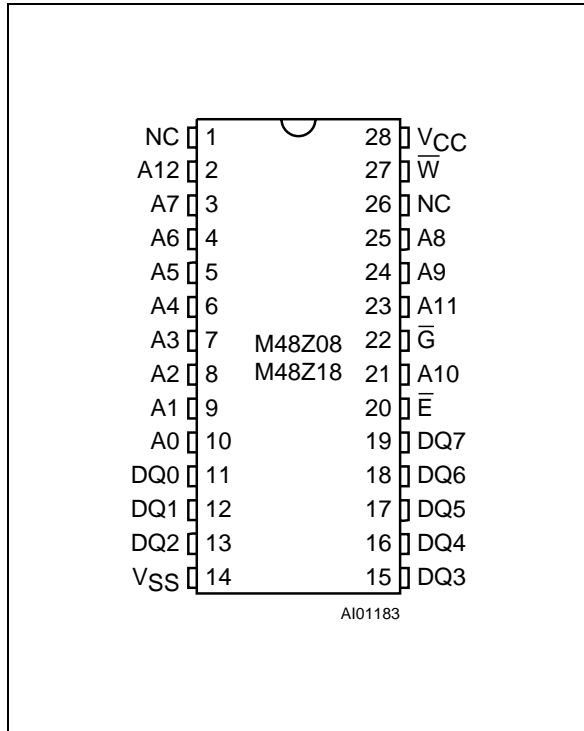
The 28 pin 600mil DIP CAPHAT™ houses the M48Z08/18 silicon with a long life lithium button cell in a single package.
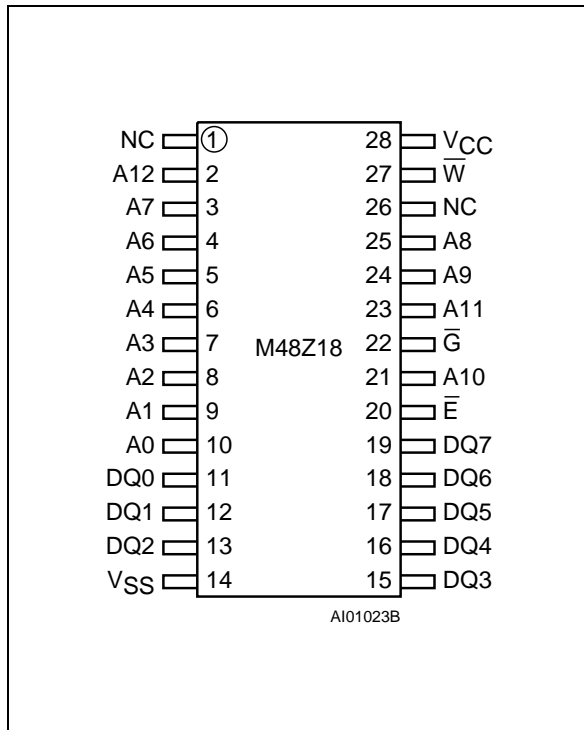
Figure 1. Logic Diagram

DIP Pin Connections

```
        ┌────┬─┐────────┐
  NC ▯ 1 │    ∪        │ 28 ▯ V_CC
 A12 ▯ 2 │             │ 27 ▯ W̄
  A7 ▯ 3 │             │ 26 ▯ NC
  A6 ▯ 4 │             │ 25 ▯ A8
  A5 ▯ 5 │             │ 24 ▯ A9
  A4 ▯ 6 │             │ 23 ▯ A11
  A3 ▯ 7 │   M48Z08    │ 22 ▯ Ḡ
  A2 ▯ 8 │   M48Z18    │ 21 ▯ A10
  A1 ▯ 9 │             │ 20 ▯ Ē
  A0 ▯ 10│             │ 19 ▯ DQ7
 DQ0 ▯ 11│             │ 18 ▯ DQ6
 DQ1 ▯ 12│             │ 17 ▯ DQ5
 DQ2 ▯ 13│             │ 16 ▯ DQ4
 V_SS ▯ 14│            │ 15 ▯ DQ3
        └─────────────┘
                AI01183
```

Warning: NC = Not Connected.

SOIC Pin Connections

```
        ┌─────────────┐
  NC ▭ ① │             │ 28 ▭ V_CC
 A12 ▭ 2 │             │ 27 ▭ W̄
  A7 ▭ 3 │             │ 26 ▭ NC
  A6 ▭ 4 │             │ 25 ▭ A8
  A5 ▭ 5 │             │ 24 ▭ A9
  A4 ▭ 6 │             │ 23 ▭ A11
  A3 ▭ 7 │   M48Z18    │ 22 ▭ Ḡ
  A2 ▭ 8 │             │ 21 ▭ A10
  A1 ▭ 9 │             │ 20 ▭ Ē
  A0 ▭ 10│             │ 19 ▭ DQ7
 DQ0 ▭ 11│             │ 18 ▭ DQ6
 DQ1 ▭ 12│             │ 17 ▭ DQ5
 DQ2 ▭ 13│             │ 16 ▭ DQ4
 V_SS ▭ 14│            │ 15 ▭ DQ3
        └─────────────┘
                AI01023B
```

Warning: NC = Not Connected.

Signal Names

A0-A12	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: M48Z18 -100 MH 1 TR

Supply Voltage and Write Protect Voltage

08 [1] V_{CC} = 4.75V to 5.5V
         V_{PFD} = 4.5V to 4.75V

18   V_{CC} = 4.5V to 5.5V
         V_{PFD} = 4.2V to 4.5V

Speed

-100   100 ns

Package

PC   PCDIP28
MH [2]   SOH28

Temperature Range

1   0 to 70 °C
6 [3]   –40 to 85 °C

Shipping Method for SOIC

blank   Tubes
TR   Tape & Reel

Notes: 1. The M48Z08 part is offered with the PCDIP28 (i.e. CAPHAT) package only.
2. The SOIC package (SOH28) requires the battery package (SNAPHAT) which is ordered separately under the part number "M4Z28-BR00SH1" in plastic tube or "M4Z28-BR00SH1TR" in Tape & Reel form.
3. Temperature range available for M48Z18 product only.

Caution: Do not place the SNAPHAT battery package "M4Z28-BR00SH1" in conductive foam since this will drain the lithium button-cell battery.