

# DALLAS SEMICONDUCTOR

## DS1345Y/AB 1024K Nonvolatile SRAM with Battery Monitor

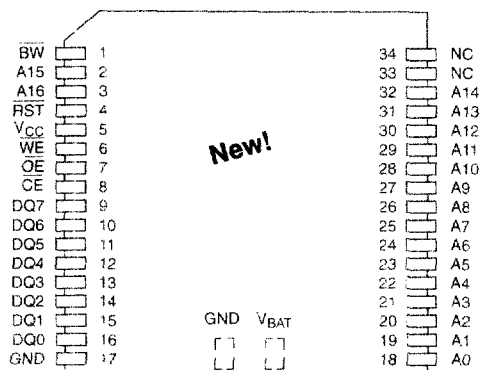
### FEATURES

- 10 years minimum data retention in the absence of external power
- Data is automatically protected during power loss
- Power supply monitor resets processor when  $V_{CC}$  power loss occurs and holds processor in reset during  $V_{CC}$  ramp-up
- Battery monitor checks remaining capacity daily
- Read and write access times as fast as 70 ns
- Unlimited write cycle endurance
- Typical standby current 50  $\mu$ A
- Upgrade for 128K x 8 SRAM, EEPROM or Flash
- Lithium battery is electrically disconnected to retain freshness until power is applied for the first time
- Full  $\pm 10\%$   $V_{CC}$  operating range (DS1345Y) or optional  $\pm 5\%$   $V_{CC}$  operating range (DS1345AB)
- Optional industrial temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , designated IND
- New PowerCap Module (PCM) package
  - Directly surface-mountable module
  - Replaceable snap-on PowerCap provides lithium backup battery
  - Standardized pinout for all nonvolatile SRAM products
  - Detachment feature on PowerCap allows easy removal using a regular screwdriver

### DESCRIPTION

The DS1345 1024K Nonvolatile SRAMs are 1,048,576-bit, fully static, nonvolatile SRAMs organized as 131,072 words by eight bits. Each NV SRAM has a self-contained lithium energy source and control circuitry which constantly monitors  $V_{CC}$  for an out-of-tolerance condition. When such a condition occurs, the lithium energy source is automatically switched on and write protection is unconditionally enabled to prevent

### PIN ASSIGNMENT



34-PIN POWERCAP MODULE (PCM):  
(USES DS9034PC POWERCAP)

### PIN DESCRIPTION

A0–A16	– Address Inputs
DQ0–DQ7	– Data In/Data Out
$\overline{\text{CE}}$	– Chip Enable
$\overline{\text{WE}}$	– Write Enable
$\overline{\text{OE}}$	– Output Enable
$\overline{\text{RST}}$	– Reset Output
$\overline{\text{BW}}$	– Battery Warning Output
$V_{CC}$	– Power (+5 Volts)
GND	– Ground
NC	– No Connect

data corruption. Additionally, the DS1345 devices have dedicated circuitry for monitoring the status of  $V_{CC}$  and the status of the internal lithium battery. DS1345 devices in the PowerCap Module package are directly surface mountable and are normally paired with a DS9034PC PowerCap to form a complete Nonvolatile SRAM module. The devices can be used in place of 128K x 8 SRAM, EEPROM or Flash components.