DALLAS
SEMICONDUCTOR

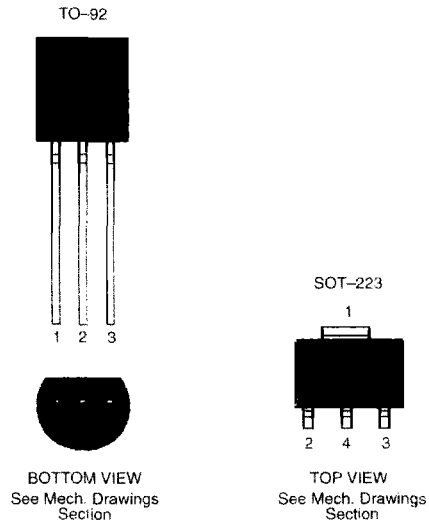# DS2223/DS2224
EconoRAM

FEATURES

- Low–cost, general–purpose, 256–bit memory
  - DS2223 has 256–bit SRAM
  - DS2224 has 32–bit ROM, 224–bit SRAM

- Reduces control, address and data interface to a single pin

- Each DS2224 32–bit ROM is factory–lasered with a unique serial number

- DS2224 portion of ROM with custom code and unique serial number available

- Minimal operating power: 45 nanocoulombs per transaction @ 1.5V typical

- Less than 15 nA standby current at 25°C

- Nonvolatile data retention easily achieved via low–cost alkaline batteries or capacitors

- Directly connects to a port pin of popular microcontrollers

- Operation from 1.2 to 5.5 volts

- Popular TO–92 or SOT–223 surface mount package

- Operates over industrial temperature range –40°C to +85°C

DESCRIPTION

The DS2223 and DS2224 EconoRAMs are fully static, micro–powered, read/write memories in low–cost TO–92 or SOT–223 packages. The DS2223 is organized as a serial 256 x 1 bit static read/write memory. The DS2224's first 32 bits are lasered with a unique ID code at the time of manufacture; the remaining 224 bits are static read/write memory. Signaling necessary for reading or writing is reduced to just one interface lead.

PACKAGE OUTLINE

TO–92

BOTTOM VIEW
See Mech. Drawings
Section

SOT–223

TOP VIEW
See Mech. Drawings
Section

PIN CONNECTIONS

Pin 1	GND	– Ground
Pin 2	DQ	– Data In/Out
Pin 3	V_{CC}	– Supply
Pin 4	GND	– Ground

ORDERING INFORMATION

DS2223	256–bit SRAM – TO–92 Package
DS2223Z	256–bit SRAM – SOT–223 Package
DS2223T	1000 piece tape–and–reel of DS2223
DS2223Y	2500 piece tape–and–reel of DS2223Z
DS2224	32–bit serial number (ROM), 224–bit SRAM – TO–92 Package
DS2224Z	32–bit serial number (ROM), 224–bit SRAM – SOT–223 Package
DS2224T	1000 piece tape–and–reel of DS2224
DS2224Y	2500 piece tape–and–reel of DS2224Z