

DALLAS
SEMICONDUCTOR**DS1645EE**
Partitioned 1024K NV SRAM

T-46-23-37

FEATURES

- Data retention in the absence of V_{CC}
- Data is automatically protected during power loss
- Directly replaces 128K x 8 EPROM, EEPROM, or FLASH
- Write protects selected blocks of memory regardless of V_{CC} status when programmed
- Unlimited write cycles
- Low-power CMOS operation
- Over 10 years of data retention
- Standard 32-pin JEDEC pinout
- Available in either 70, 85, or 100 ns read access times
- Read cycle time equals write cycle time
- Full $\pm 10\%$ operating range
- Lithium energy source is electrically disconnected to retain freshness until power is applied for the first time.
- Optional industrial temperature range of -40°C to $+85^{\circ}\text{C}$, designated IND

DESCRIPTION

The DS1645EE 1024K Nonvolatile SRAM is a 1,048,576-bit, fully static, nonvolatile SRAM organized as 131,072 words by 8 bits. The DS1645EE 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 garbled data. In addition the device has the ability to unconditionally write protect blocks of memory so that inadvertent

PIN ASSIGNMENT

NC	1	32	V_{CC}
A16	2	31	\overline{WE}
A15	3	30	NC
A12	4	29	A14
A7	5	28	A13
A6	6	27	A8
A5	7	26	A9
A4	8	25	A11
A3	9	24	\overline{OE}
A2	10	23	A10
A1	11	22	\overline{CE}
A0	12	21	DQ7
DQ0	13	20	DQ6
DQ1	14	19	DQ5
DQ2	15	18	DQ4
GND	16	17	DQ3

32-PIN ENCAPSULATED PACKAGE
(740 MIL EXTENDED)**PIN DESCRIPTION**

A0 - A16	- Address Inputs
\overline{CE}	- Chip Enable
GND	- Ground
DQ0 - DQ7	- Data In/Data Out
V_{CC}	- Power (+5V)
\overline{WE}	- Write Enable
\overline{OE}	- Output Enable
NC	- No Connect

tent write cycles do not corrupt program and special data space. The nonvolatile static RAM can be used in place of existing 128K x 8 EPROM, EEPROM or FLASH conforming to the popular byte-wide 32 pin DIP standard. There is no limit on the number of write cycles which can be executed and no additional support circuitry is required for microprocessor interface. This part is functionally equivalent to the DS1645Y and differs only in pinout. See the DS1645Y/AB 1024K NV SRAM data sheet for technical details.