

### Features

- High-performance CMOS non-volatile static RAM 8192 x 8 bits
- 25, 35 and 45 ns Access Times
- 12, 20 and 25 ns Output Enable Access Times
- I<sub>CC</sub> = 15 mA at 200 ns Cycle Time
- Automatic STORE to EEPROM on Power Down using system capacitance
- Software initiated STORE (STORE Cycle Time < 10 ms)
- Automatic STORE Timing
- 10<sup>5</sup> STORE cycles to EEPROM
- 10 years data retention in EEPROM
- Automatic RECALL on Power Up
- Software RECALL Initiation (RECALL Cycle Time < 20 μs)
- Unlimited RECALL cycles from EEPROM
- Single 5 V ± 10 % Operation
- Operating temperature ranges:  
0 to 70 °C  
-40 to 85 °C
- CECC 90000 Quality Standard
- ESD characterization according-MIL STD 883C M3015.7-HBM (classification see IC Code Numbers)

- Packages: PDIP28 (300 mil)  
PDIP28 (600 mil)  
SOP28 (330 mil)

### Description

The U635H64 has two separate modes of operation: SRAM mode and nonvolatile mode. In SRAM mode, the memory operates as an ordinary static RAM. In nonvolatile operation, data is transferred in parallel from SRAM to EEPROM or from EEPROM to SRAM. In this mode SRAM functions are disabled.

The U635H64 is a fast static RAM (25, 35, 45 ns), with a nonvolatile electrically erasable PROM (EEPROM) element incorporated in each static memory cell. The SRAM can be read and written an unlimited number of times, while independent nonvolatile data resides in EEPROM. Data transfers from the SRAM to the EEPROM (the STORE operation) take place automatically upon power down using charge stored in system capacitance.

Transfers from the EEPROM to the SRAM (the RECALL operation) take place automatically on power up. The U635H64 combines the high performance and ease of use of a fast SRAM with nonvolatile data integrity.

STORE cycles also may be initiated under user control via a software sequence.

Once a STORE cycle is initiated, further input or output are disabled until the cycle is completed.

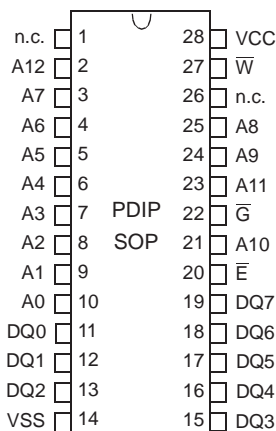
Because a sequence of addresses is used for STORE initiation, it is important that no other read or write accesses intervene in the sequence or the sequence will be aborted.

RECALL cycles may also be initiated by a software sequence.

Internally, RECALL is a two step procedure. First, the SRAM data is cleared and second, the nonvolatile information is transferred into the SRAM cells.

The RECALL operation in no way alters the data in the EEPROM cells. The nonvolatile data can be recalled an unlimited number of times.

### Pin Configuration



Top View

### Pin Description

Signal Name	Signal Description
A0 - A12	Address Inputs
DQ0 - DQ7	Data In/Out
$\bar{E}$	Chip Enable
$\bar{G}$	Output Enable
$\bar{W}$	Write Enable
VCC	Power Supply Voltage
VSS	Ground