

1K N-Channel EEPROM

FEATURES

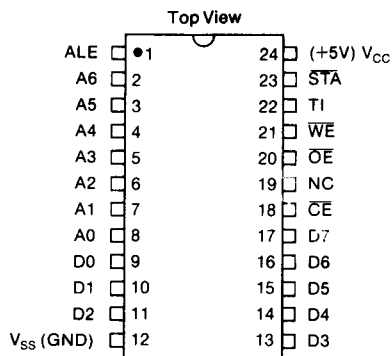
- 128 x 8 bit organization, fully decoded
- SNOS si-gate technology
- Single +5V power supply
- 100ns access time
- TTL compatible
- Word alterable
- Reprogramming time-user determined
- Automatic erase/write cycle

DESCRIPTION

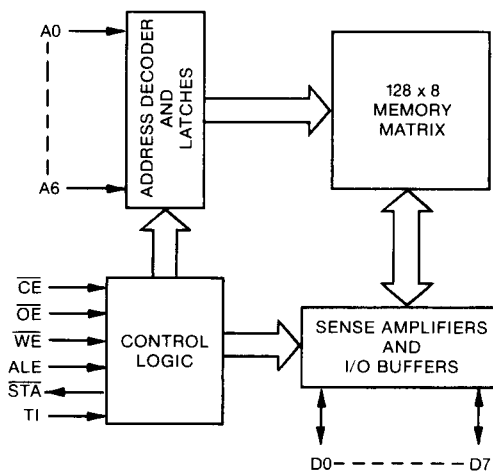
The ER5901 is intended for microcomputer applications which require a small non-volatile memory capable of fast operation with a minimum of processor intervention. The fast access time, coupled with the ability to multiplex the address and data lines, through the Address Latch Enable (ALE) and WE inputs, will make it readily adaptable for use in most systems.

A single pulse on the WE input will cause the device to perform a complete erase/write cycle without any further processor intervention. The duration of this reprogramming cycle can be determined by means of an external RC time constant connected to the TI input. During the reprogramming cycle a busy status is made available on the status line STA.

The combining of all these features on a single device has been achieved through innovative circuit design and N-channel Si-gate technology.

ELEC. ALTERABLE
NON-VOLATILE MEMORYPIN CONFIGURATION
24 LEAD DUAL IN LINE

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS**Maximum Ratings***

All inputs and outputs with respect to Ground +6V to -0.3V
 Storage temperature (unpowered and
 without data retention) -65°C to +150°C
 Soldering temperature of leads (10 secs.) +300°C

Standard Conditions (unless otherwise noted) $V_{SS} = \text{GND}$ $V_{CC} = +5V \pm 5\%$ VoltsOperating Temperature Ranges T_A : 0°C to +70°C (Commercial)

-40°C to +85°C (Industrial)

-55°C to +125°C (Military)

* Exceeding these ratings could cause permanent damage to the device. This is a stress rating only and functional operation of this device at these conditions is not implied—operating ranges are specified in Standard Conditions. Exposure to absolute maximum rating conditions for extended periods may affect device reliability. Data labeled "typical" is presented for design guidance only and is not guaranteed.

DC CHARACTERISTICS

| Characteristics | Sym | Min | Typ | Max | Units | Conditions |
|---------------------------|----------|------|-----|--------------|---------------|----------------------------|
| Input Logic "1" | V_{IH} | 2.0 | — | $V_{CC}+0.3$ | V | |
| Input Logic "0" | V_{IL} | -0.1 | — | +0.8 | V | |
| Output Logic "1" | V_{OH} | 2.4 | — | V_{CC} | V | $I_{OH} = -400\mu\text{A}$ |
| Output Logic "0" | V_{OL} | — | — | 0.4 | V | $I_{OL} = 1.6\text{mA}$ |
| Input Leakage Current | I_{IL} | — | — | ** | μA | $V_{IN} = 5.25\text{V}$ |
| Output Leakage Current | I_{OL} | — | — | ** | μA | $V_{OUT} = 5.25\text{V}$ |
| Power Supply Requirements | | | | | | |
| V_{CC} Supply: | | | | | | |
| Chip Selected | I_{CC} | — | 35 | 54 | mA | $V_{CC} = +5.5\text{V}$ |
| Chip Deselected | I_{CC} | — | 12 | 18 | mA | $V_{CC} = +5.5\text{V}$ |
| Power Dissipation: | | | | | | |
| Chip Selected | P_D | — | 195 | 300 | mW | $V_{CC} = +5.5\text{V}$ |
| Chip Deselected | P_D | — | 66 | 100 | mW | $V_{CC} = +5.5\text{V}$ |

** To be announced at a later date.

NOTE: 1. $T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$, $V_{CC} = 5 \pm 5\%$ Volts, unless otherwise specified.

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PIN FUNCTIONS

| Name | Function |
|-------------------------|--|
| A0-A6 | 7 bit binary word address. |
| D0-D7 | 8 bit data I/O. |
| V_{CC} | Power supply +5V \pm 5%. |
| GND | Chip Ground connection. |
| $\overline{\text{CE}}$ | Chip Enable input — used for chip selection. |
| $\overline{\text{OE}}$ | Output Enable input — gates data to output pins during Read. |
| $\overline{\text{WE}}$ | Write Enable input — enables a reprogramming cycle, input data latched on a positive edge. |
| ALE | Address Latch Enable input — address inputs latched on negative edge. May be tied to $\overline{\text{WE}}$ when separate address and data lines are used. |
| $\overline{\text{STA}}$ | Status output pin — low when chip is in reprogramming mode and cannot be accessed. |
| TI | Timing input — defines clock frequency for reprogramming; May be RC or other external clock. |

ELEC. ALTERABLE
NON-VOLATILE MEMORY