

CMOS 512K (64K x 8) UV EPROM and OTP ROM

ABBREVIATED DATA

- VERY FAST ACCESS TIME: 60ns
- COMPATIBLE with HIGH SPEED MICROPROCESSORS, ZERO WAIT STATE
- LOW POWER "CMOS" CONSUMPTION:
 - Active Current 30mA
 - Standby Current 100μA
- PROGRAMMING VOLTAGE: 12.75V
- ELECTRONIC SIGNATURE for AUTOMATED PROGRAMMING
- PROGRAMMING TIMES of AROUND 6sec. (PRESTO IIB ALGORITHM)

DESCRIPTION

The M27C512 is a high speed 524,288 bit UV erasable and electrically programmable EPROM ideally suited for applications where fast turn-around and pattern experimentation are important requirements. Its is organized as 65,536 by 8 bits.

The 28 pin Window Ceramic Frit-Seal Dual-in-Line package has transparent lid which allows the user to expose the chip to ultraviolet light to erase the bit pattern. A new pattern can then be written to the device by following the programming procedure.

For applications where the content is programmed only one time and erasure is not required, the M27C512 is offered in Plastic Dual-in-Line, Plastic Thin Small Outline and Plastic Leaded Chip Carrier packages.

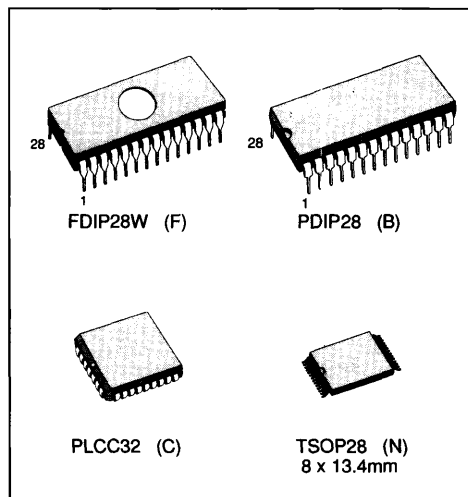


Figure 1. Logic Diagram

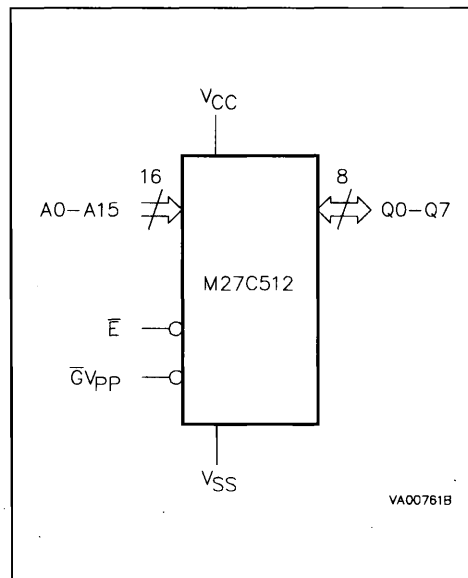


Table 1. Signal Names

A0 - A15	Address Inputs
Q0 - Q7	Data Outputs
\bar{E}	Chip Enable
$\bar{G}V_{PP}$	Output Enable / Program Supply
V _{CC}	Supply Voltage
V _{SS}	Ground

Table 2. Absolute Maximum Ratings ⁽¹⁾

Symbol	Parameter	Value	Unit
T _A	Ambient Operating Temperature	-40 to 125	°C
T _{BIAS}	Temperature Under Bias	-50 to 125	°C
T _{STG}	Storage Temperature	-65 to 150	°C
V _{IO} ⁽²⁾	Input or Output Voltages (except A9)	-2 to 7	V
V _{CC}	Supply Voltage	-2 to 7	V
V _{A9} ⁽²⁾	A9 Voltage	-2 to 13.5	V
V _{PP}	Program Supply Voltage	-2 to 14	V

Notes: 1. Except for the rating "Operating Temperature Range", stresses above those listed in the Table "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and operation of the device at these or any other conditions above those indicated in the Operating sections of this specification is not implied. Exposure to Absolute Maximum Rating conditions for extended periods may affect device reliability. Refer also to the SGS-THOMSON SURE Program and other relevant quality documents.

2. Minimum DC voltage on Input or Output is -0.5V with possible undershoot to -2.0V for a period less than 20ns. Maximum DC voltage on Output is V_{CC} +0.5V with possible overshoot to V_{CC} +2V for a period less than 20ns.

Figure 2A. DIP Pin Connections

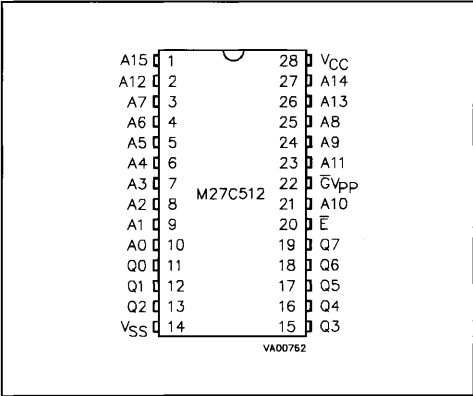
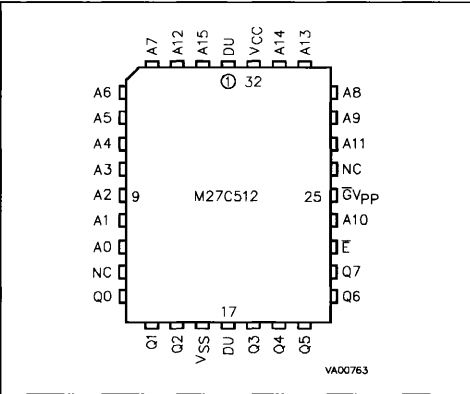
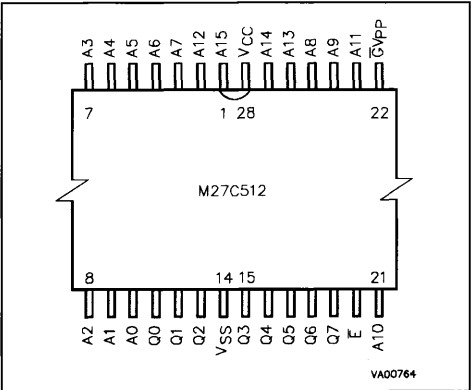


Figure 2B. LCC Pin Connections



Warning: NC = No Connection, DU = Don't Use

Figure 2C. TSOP Pin Connections



DEVICE OPERATION

The modes of operations of the M27C512 are listed in the Operating Modes table. A single 5V power supply is required in the read mode. All inputs are TTL levels except for \overline{GVPP} and 12V on A9 for Electronic Signature.

Read Mode

The M27C512 has two control functions, both of which must be logically active in order to obtain data at the outputs. Chip Enable (\overline{E}) is the power control and should be used for device selection. Output Enable (\overline{G}) is the output control and should be used to gate data to the output pins, independent of device selection.