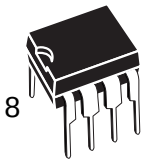
SGS-THOMSON MICROELECTRONICS

M24C64
M24C32

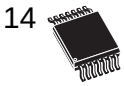
64K/32K SERIAL I^2C BUS EEPROM

DATA BRIEFING

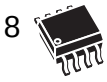
- COMPATIBLE with I^2C EXTENDED ADDRESSING
- TWO WIRE I^2C SERIAL INTERFACE, SUPPORTS 400kHz PROTOCOL
- 1 MILLION ERASE/WRITE CYCLES
- 40 YEARS DATA RETENTION
- SINGLE SUPPLY VOLTAGE
  - 4.5V to 5.5V for M24C64 and M24C32
  - 2.5V to 5.5V for M24C64-W and M24C32-W
  - 1.8V to 3.6V for M24C64-R and M24C32-R
- HARDWARE WRITE CONTROL
- BYTE and PAGE WRITE (up to 32 BYTES)
- BYTE, RANDOM and SEQUENTIAL READ MODES
- SELF TIMED PROGRAMING CYCLE
- AUTOMATIC ADDRESS INCREMENTING
- ENHANCED ESD and LATCH-UP PERFORMANCES



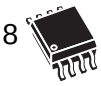
PSDIP8 (BN)
0.25mm Frame



TSSOP14 (DL)
169mil Width

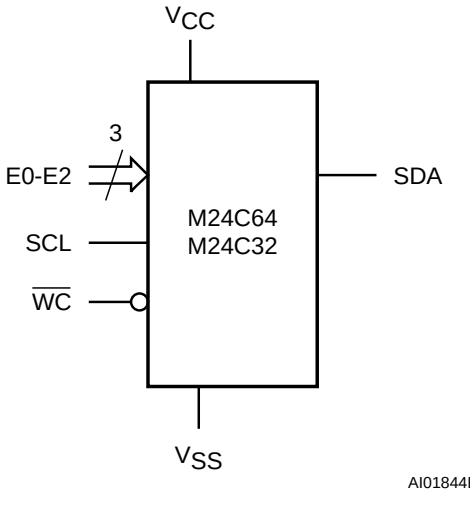


SO8 (MN)
150mil Width



SO8 (MW)
200mil Width

Logic Diagram

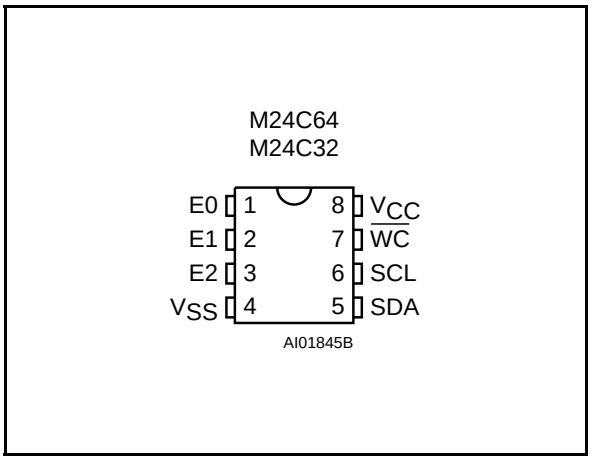


DESCRIPTION

The M24C64 and the M24C32 are 64K bit and a 32K bit electrically erasable programmable memories (EEPROM), organized as 8,192 x 8 and as 4,096 x 8 bits respectively. The "-W" versions operate with a power supply value as low as 2.5V and the "-R" versions operate down to 1.8V. Plastic Dual-in-Line, Plastic Small Outline and Thin Shrink Small Outline packages are available.

Each memory is compatible with the I^2C extended addressing standard, two wire serial interface which uses a bi-directional data bus and serial clock. The Memory carries a built-in 4 bit, unique device identification code (1010) corresponding to the I^2C bus definition. The Memory behaves as slave devices in the I^2C protocol with all memory operations synchronized by the serial clock. Read and write operations are initiated by a START condition generated by the bus master. The START condition is followed by a stream of 4 bits (identification code 1010), then 3 bit Chip Enable input to form a 7 bit Device Select, plus one read/write bit and terminated by an acknowledge bit.

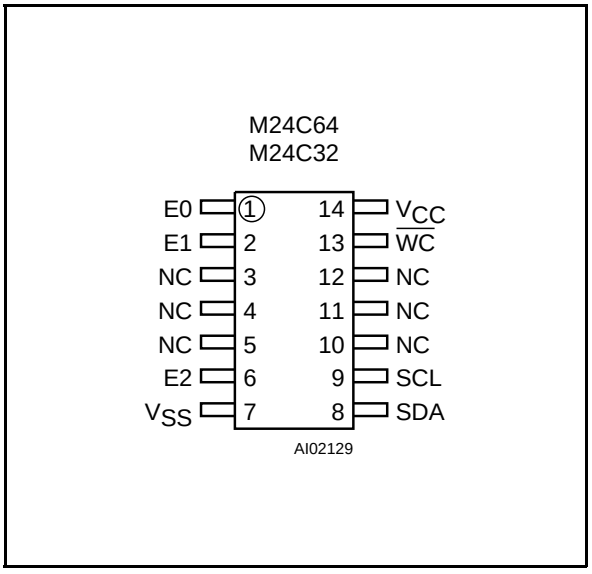
DIP Pin Connections



Signal Names

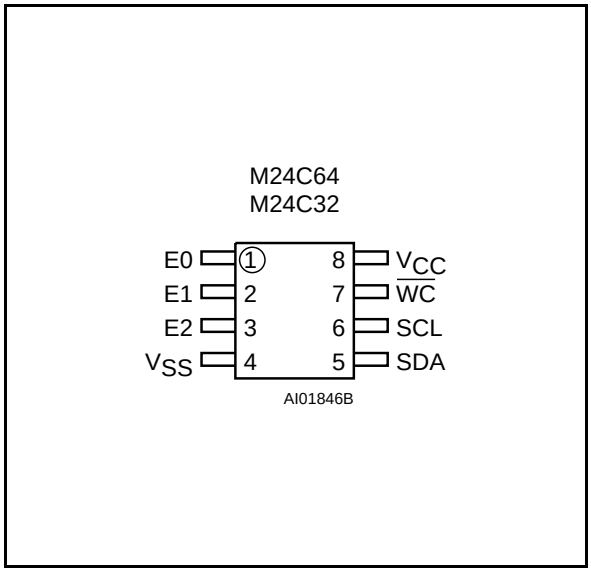
E0-E2	Chip Enable Inputs
SDA	Serial Data Address Input/Output
SCL	Serial Clock
$\overline{WC}$	Write Control
V_{CC}	Supply Voltage
V_{SS}	Ground

TSSOP Pin Connections



Warning: NC = Not Connected.

SO Pin Connections



ORDERING INFORMATION SCHEME

Example: M24C64 – R MN 1 T

Density	Operating Voltage	Package	Temperature Range	Option
64 64K (8K x 8)	blank 4.5V to 5.5V	BN PSDIP8 0.25mm Frame	1 (2) 0 to 70 °C	T Tape & Reel Packing
32 32K (4K x 8)	W 2.5V to 5.5V	MN SO8 150mil Width	6 –40 to 85 °C	
	R (4) 1.8V to 3.6V	MW SO8 200mil Width	3 (3) –40 to 125 °C	
		DL (1) TSSOP14 169mil Width	5 –20 to 85 °C	

Notes: 1. Contact marketing for availability of M24C64 and M24C32 in TSSOP14 package.
2. Temperature range on request only.
3. Produced with High Reliability Certified Flow (HRCF), in V_{CC} range 4.5V to 5.5V at 100kHz only.
4. -R version (1.8V to 3.6V) are only available in temperature ranges 5 or 1.

Devices are shipped from the factory with the memory content set at all "1's" (FFh).

For a list of available options (Operating Voltage, Package, etc...) or for further information on any aspect of this device, please contact the SGS-THOMSON Sales Office nearest to you.