

## 8K ELECTRICALLY ERASABLE PROGRAMMABLE ROM

### FEATURES :

- Extended Power Supply Voltage  
Single Vcc for Read and Programming  
(Vcc = 2.7 V to 5.5 V)
- Low Power (Isb = 2µa @ 5.5 V)
- I<sup>2</sup>C Bus, 2-Wire Serial Interface
- Support Byte Write and Page Write (16 Bytes)
- Automatic Page write Operation (maximum 10 ms)  
Internal Control Timer  
Internal Data Latches for 16 Bytes
- High Reliability CMOS Technology with EEPROM Cell  
Endurance : 1,000,000 Cycles  
Data Retention : 100 Years

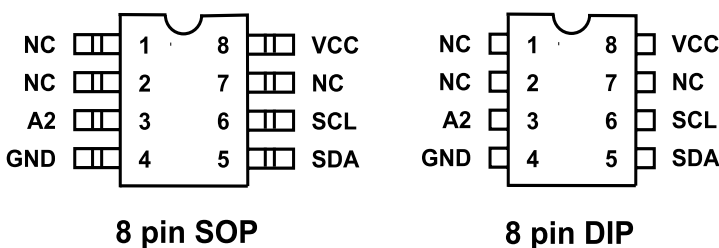
### DESCRIPTION:

The AS24C08 is a serial 8K EEPROM fabricated with high high reliability, high performance CMOS technology. It's 8K of memory is organized as 1,024 x 8 bits. The memory is configured as 64 pages with each page containing 16 bytes. This device offers significant advantages in low power and low voltage applications.

The AS24C08 uses the I<sup>2</sup>C addressing protocol and 2-wire serial interface which includes a bidirectional serial data bus synchronized by a clock. It offers a flexible byte write and a faster 16-byte page write.

The AS24C08 is assembled in either a 8-pin DIP or 8-pin SOP package. Pin #1, #2 and #7 are not connected (NC). Pin #3 is the A2 device address input for the AS24C08, such that a total of two AS24C08 devices can be connected on a single bus. Pin #4 is the ground (Vss). Pin #5 is the serial data (SDA) pin used for bidirectional transfer of data. Pin #6 is the serial clock (SCL) input pin. Pin #8 is the power supply (Vcc) pin.

### PIN DESCRIPTION



All data is serially transmitted in bytes (8 bits) on the SDA bus. To access the AS24C08 (slave) for a read or write operation, the controller (master) issues a start condition by pulling SDA from high to low while SCL is high. The master then issues the device address byte which consists of 1010 (A2) (B9) (B8) (R/W). The most significant bits (1010) are a device type code signifying an EEPROM device. A2 is the device address select bit which has to match the A2 pin input on the AS24C08 device. The B[9:8] bits are the 2 most significant bits of the memory address. The read/write bit determines whether to do a read or write operation. After each byte is transmitted, the receiver has to provide an acknowledge by pulling the SDA bus low on the ninth clock cycle. The acknowledge is a handshake signal to the transmitter indicating a successful data transmission.

### PIN DESCRIPTION

#### DEVICE ADDRESS (A2)

A2 is a device address input that enables a total of two AS24C08 devices to connect on a single bus. When the address input pin is left unconnected, it is interpreted as zero.

#### SERIAL DATA (SDA)

SDA is a bidirectional pin used to transfer data in and out of the AS24C08. The pin is an open-drain output. A pullup resistor must be connected from SDA to Vcc.

#### SERIAL CLOCK (SCL)

The SCL input synchronizes the data on the SDA bus. It is used in conjunction with SDA to define the start and stop conditions. It is also used in conjunction with SDA to transfer data to and from the AS24C08.