IS93C46A IS93C56A IS93C66A

1,024/2,048/4,096-BIT SERIAL ELECTRICALLY ERASABLE PROM

PRELIMINARY INFORMATION
MAY 2002

FEATURES

- Industry-standard Microwire Interface
  - — Non-volatile data storage
  - — Low voltage operation: Vcc = 2.5V to 5.5V
  - — Full TTL compatible inputs and outputs
  - — Auto increment for efficient data dump
- User Configured Memory Organization
  - — By 16-bit or by 8-bit
- Hardware and software write protection
  - — Defaults to write-disabled state at power-up
  - — Software instructions for write-enable/disable
- Enhanced low voltage CMOS E^{2}PROM technology
- Versatile, easy-to-use Interface
  - — Self-timed programming cycle
  - — Automatic erase-before-write
  - — Programming status indicator
  - — Word and chip erasable
  - — Stop SK anytime for power savings
- Durable and reliable
  - — 40-year data retention after 1M write cycles
  - — 1 million write cycles
  - — Unlimited read cycles
  - — Schmitt-trigger inputs

DESCRIPTION

The IS93C46A/56A/66A is a low-cost 1kb/2kb/4kb non-volatile, ISSI ® serial EEPROM. It is fabricated using an enhanced CMOS design and process. The IS93C46A/56A/66A contain power-efficient read/write memory, and organziation of either 128/256/512 bytes of 8 bits or 64/128/256 words of 16 bits. When the ORG pin is connected to Vcc or left unconnected, x16 is selected; when it is connected to ground, x8 is selected. The IS93C46A/56A/66A is fully backwards compatible with IS93C46/56/66.

An instruction set controls the operation of the devices, including read, write, and mode-enable functions. The data out pin (Dout) indicates the status of the device during the self-timed non-volatile programming cycle. The self-timed write cycle includes an automatic erase-before-write capability. To protect against inadvertent writes, the WRITE instruction is accepted only while the chip is in the write-enabled state. Data is written once per WRITE instruction to the x8 byte or x16 word selected. If Chip Select (CS) is brought HIGH just after initiation of the write cycle, the Dout pin would indicate the Ready/$\overline{\text{Busy}}$ status of the write activity.

FUNCTIONAL BLOCK DIAGRAM