MX29LV640BT/BB-DIE PRODUCTS

64M-BIT [8M x 8/4M x 16] SINGLE VOLTAGE 3V ONLY FLASH MEMORY

FEATURES

GENERAL FEATURES

- Single Power Supply Operation
  - 2.7 to 3.6 volt for read, erase, and program operations
- 8,388,608 x 8 / 4,194,304 x 16 switchable
- Sector structure
  - 8KB (4KW) x 8 and 64KB(32KW) x 127
- Sector Protection/Chip Unprotect
  - Provides sector group protect function to prevent program or erase operation in the protected sector group
  - Provides chip unprotect function to allow code changes
  - Provides temporary sector group unprotect function for code changes in previously protected sector groups
- Secured Silicon Sector
  - Provides a 128-word area for code or data that can be permanently protected.
  - Once this sector is protected, it is prohibited to program or erase within the sector again.
- Latch-up protected to 250mA from -1V to Vcc + 1V
- Low Vcc write inhibit is equal to or less than 1.5V
- Compatible with JEDEC standard
  - Pin-out and software compatible to single power supply Flash

PERFORMANCE

- High Performance
  - Fast access time: 90ns
  - Fast program time: 11us/word, 45s/chip (typical)
  - Fast erase time: 0.9s/sector, 45s/chip (typical)
- Low Power Consumption
  - Low active read current: 9mA (typical) at 5MHz
  - Low standby current: 0.2uA (typ.)
- Minimum 100,000 erase/program cycle
- 10 years data retention

SOFTWARE FEATURES

- Support Common Flash Interface (CFI)
  - Flash device parameters stored on the device and provide the host system to access.
- Erase Suspend/ Erase Resume
  - Suspends sector erase operation to read data from or program data to another sector which is not being erased
- Status Reply
  - Data# polling & Toggle bits provide detection of program and erase operation completion

HARDWARE FEATURES

- Ready/Busy (RY/BY#) Output
  - Provides a hardware method of detecting program and erase operation completion
- Hardware Reset (RESET#) Input
  - Provides a hardware method to reset the internal state machine to read mode
- WP#/ACC input
  - Write protect (WP#) function allows protection of two outermost boot sectors, regardless of sector protect status
  - ACC (high voltage) accelerates programming time for higher throughput during system

GENERAL DESCRIPTION

The MX29LV640BT/BB is a 64-mega bit Flash memory organized as 8M bytes of 8 bits or 4M bytes of 16 bits. MXIC's Flash memories offer the most cost-effective and reliable read/write non-volatile random access memory. It is designed to be reprogrammed and erased in system or in standard EPROM programmers.

The standard MX29LV640BT/BB offers access time as fast as 90ns, allowing operation of high-speed microprocessors without wait states. To eliminate bus contention, the MX29LV640BT/BB has separate chip enable (CE#) and output enable (OE#) controls.

MXIC's Flash memories augment EPROM functionality with in-circuit electrical erasure and programming. The MX29LV640BT/BB uses a command register to manage this functionality.

MXIC Flash technology reliably stores memory contents even after 100,000 erase and program cycles. The MXIC cell is designed to optimize the erase and program mechanisms. In addition, the combination of advanced tunnel oxide processing and low internal electric fields for erase and programming operations produces reliable cycling. The MX29LV640BT/BB uses a 2.7V to 3.6V VCC supply to perform the High Reliability Erase and auto Program/Erase algorithms.

The highest degree of latch-up protection is achieved with MXIC's proprietary non-epi process. Latch-up protection is proved for stresses up to 100 milliamperes on address and data pin from -1V to VCC + 1V.

For detailed electrical specifications, please refer to MX29LV640BT/BB datasheet.