

FEATURES

- 524,288x8/262,144x16 switchable
- Fast access time: 120/150/200ns
- Low power consumption
 - 50mA maximum active current
 - 100 μ A maximum standby current
- Programming and erasing voltage 12V $\pm$ 5%
- Command register architecture
 - Byte/Word Programming (50 μ s typical)
 - Chip Erase (1 sec typical)
 - Auto chip erase 30 sec typical (including preprogramming time)
 - Block Erase (16384 bytes by 32 blocks or 8,912 words by 32 blocks)
- Auto Erase (chip & block) and Auto Program
 - DATA polling
 - Toggle bit
- 10,000 minimum erase/program cycles
- Latch-up protected to 100mA from -1 to VCC+1V
- Advanced CMOS Flash memory technology
- Package type:
 - 44-pin SOP
 - 48-pin TSOP (Type 1)

GENERAL DESCRIPTION

The MX28F4100 is a 4-mega bit Flash memory organized as 512K bytes of 8 bits or 256K words of 16 bits switchable. MXIC's Flash memories offer the most cost-effective and reliable read/write non-volatile random access memory. The MX28F4100 is packaged in 44-pin SOP and 48-pin TSOP(I). It is designed to be reprogrammed and erased in-system or in-stand-ard EPROM programmers.

The standard MX28F4100 offers access times as fast as 120ns, allowing operation of high-speed microprocessors without wait states. To eliminate bus contention, the MX28F4100 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 MX28F4100 uses a command register to manage this functionality. The command register allows for 100% TTL level control inputs and fixed power supply levels during erase and programming, while maintaining maximum EPROM compatibility.

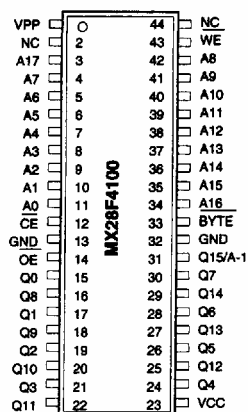
MXIC Flash technology reliably stores memory contents even after 10,000 erase and program cycles. The MXIC cell is designed to optimize the erase and programming mechanisms. In addition, the combination of advanced tunnel oxide processing and low internal electric fields for erase and programming operations produces reliable cycling. The MX28F4100 uses a 12.0V $\pm$ 5% VPP 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 milliamps on address and data pin from -1V to VCC + 1V.

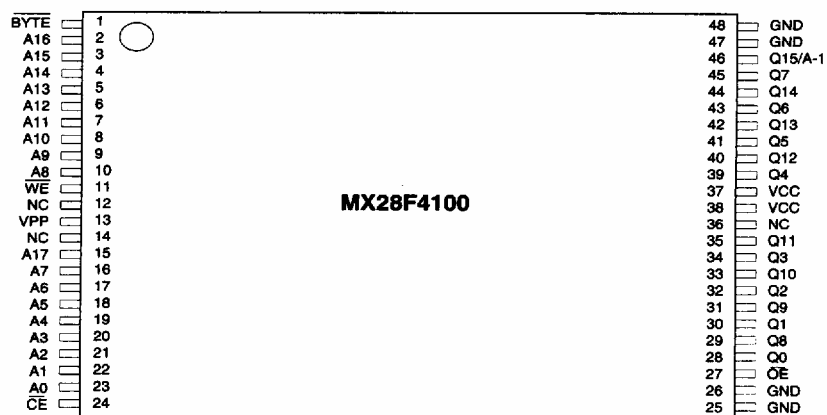
FLASH
MEMORY

PIN CONFIGURATIONS

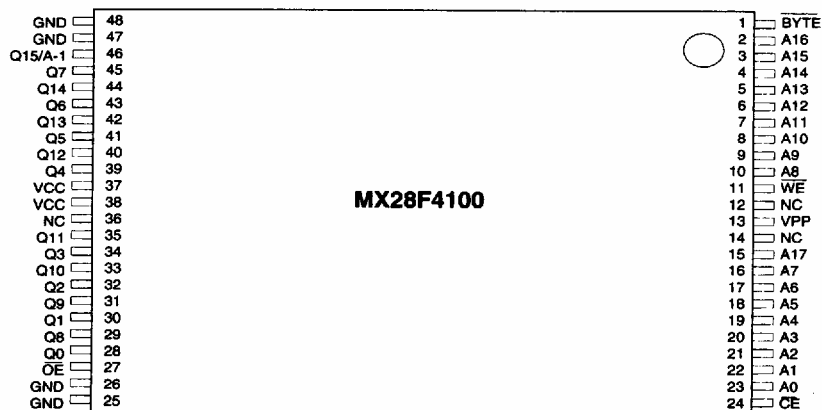
44 SOP



TSOP (TYPE 1)



(NORMAL TYPE)



(REVERSE TYPE)

PIN DESCRIPTION:

SYMBOL	PIN NAME
A-1~A17	Address Input
Q0~Q15	Data Input/Output
CE	Chip Enable Input
WE	Write Enable Input
BYTE	Byte Input
OE	Output Enable Input
VPP	Program Supply Voltage
VCC	Power Supply Pin (+5V)
GND	Ground Pin