

# Advance Information W19B320ST/B



## 4M × 8/2M × 16 3V FLASH MEMORY

### GENERAL DESCRIPTION

The W19B320ST/B is a 32Mbit, 2.7~3.6 volt CMOS flash memory organized as 4M × 8 or 2M × 16 bits. For flexible erase capability, the 32 Mbits of data are divided into eight 8KB, and sixty-three 64KB sectors. The word-wide (× 16) data appears on DQ15-DQ0, and byte-wide (× 8) data appears on DQ7-DQ0. The device can be programmed and erased in-system with a standard 2.7~3.6V power supply. A 12-volt VPP is not required. The unique cell architecture of the W19B320ST/B results in fast program/erase operations with extremely low current consumption (compared to other comparable 3-volt flash memory products). The device can also be programmed and erased by using standard EPROM programmers.

### FEATURES

#### Performance

- 2.7~3.6-volt write (program and erase) operations
- Fast write operation
- Read access time: 70, 90 nS
- Typical program/erase cycles:
  - 100K
- Twenty-year data retention
- Ultra low power consumption

#### Architecture

- Sector erase architecture
  - Eight 8KB, and sixty-three 64KB sectors
  - Top or bottom boot block configurations available
  - Supports full chip erase
- Security Sector Size: 256 Bytes
  - The Security Sector is an OTP; once the sector is programmed, it cannot be erased
- JEDEC standard byte-wide and word-wide pinouts
- TTL compatible I/O
- Manufactured on WinStack 0.18 μm process technology
- Available packages: 48-pin TSOP and 48-ball TFBGA (8x11mm)

#### Software Features

- Compatible with common Flash Memory Interface (CFI) specification
  - Flash device parameters stored directly on the device

- Allows software driver to identify and use a variety of different current and future Flash products
- Erase Suspend/Erase Resume
  - Suspends erase operations to allow programming in same bank
- End of program detection
  - Software method: Toggle bit/Data polling
- Unlock Bypass Program command
  - Reduces overall programming time when issuing multiple program command sequences

#### Hardware Features

- Ready/#Busy output (RY/#BY)
  - Detect program or erase cycle completion
- Hardware reset pin (#RESET)
  - Reset the internal state machine to the read mode
- #WP/ACC input pin
  - Write protect (#WP) function allows protection of two outermost boot sectors, regardless of sector protect status
  - Acceleration (ACC) function accelerates program timing
- Sector Protection
  - Sectors can be locked in-system or via programmer
  - Temporary Sector Unprotect allows changing data in protected sectors in-system

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