Micron Serial NOR Flash Memory

MT25Q Devices

Introduction

This addendum provides information on Micron MT25Q devices, with specific reference to the input timing characteristics.

This addendum does not provide detailed device information. The standard device data sheet provides a complete description of device functionality, operating modes, and specifications unless specified herein.

Information provided here is in addition to or supersedes information provided in the device data sheet.

Features

- SPI-compatible serial bus interface
- Single and double transfer rate (STR/DTR)
- Clock frequency
  - 133 MHz (MAX) for all protocols in STR (3.0V)
  - 166 MHz (MAX) for all protocols in STR (1.8V)
  - 90 MHz (MAX) for all protocols in DTR
- Dual/quad I/O commands for increased throughput up to 90 MB/s
- Supported protocols in both STR and DTR
  - Extended I/O protocol
  - Dual I/O protocol
  - Quad I/O protocol
- Execute-in-place (XIP)
- PROGRAM/ERASE SUSPEND operations
- Volatile and nonvolatile configuration settings
- Software reset
- Additional reset pin for selected part numbers
- 3-byte and 4-byte address modes – enable memory access beyond 128Mb
- Dedicated 64-byte OTP area outside main memory
  - Readable and user-lockable
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  - Readable and user-lockable
  - Permanent lock with PROGRAM OTP command
- Erase capability
  - Bulk erase
  - Sector erase 64KB uniform granularity
  - Subsector erase 4KB, 32KB granularity
- Security and write protection
  - Volatile and nonvolatile locking and software write protection for each 64KB sector
  - Nonvolatile configuration locking
  - Password protection
  - Hardware write protection: nonvolatile bits (BP[3:0] and TB) define protected area size
  - Program/erase protection during power-up
  - CRC detects accidental changes to raw data
- Electronic signature
  - JEDEC-standard 3-byte signature
  - Extended device ID: two additional bytes identify device factory options
- JESD47H-compliant
  - Minimum 100,000 ERASE cycles per sector
  - Data retention: 20 years (TYP)
  - Packages – JEDEC-standard, RoHS-compliant

DC Characteristics

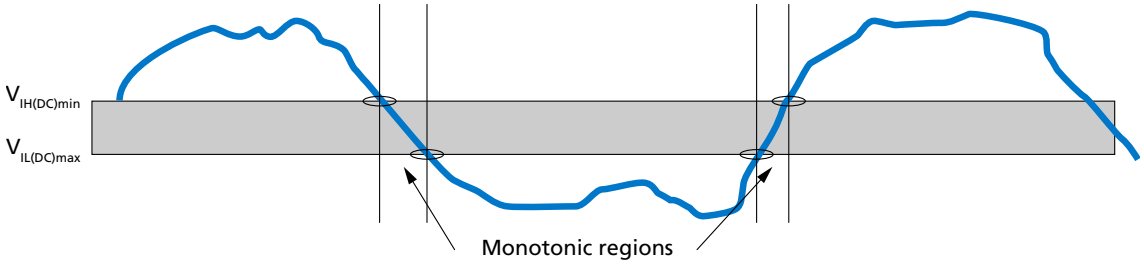
Table 1: DC Voltage Characteristics

Notes 1 applies to entire table

Parameter	Symbol	Min	Max	Unit
Input low voltage	V_{IL}	–0.5	$0.3V_{CC}$	V
Input high voltage	V_{IH}	$0.7V_{CC}$	V_{CC} + 0.4	V

Note: 1. V_{IL} can undershoot to –1.0V for periods less than 2ns and V_{IH} may overshoot to $V_{CC,max}$ +1.0V for periods less than 2ns.

Figure 1: AC Timing Input/Output Reference Levels



Notes: 1. Input signal rising edge from V_{IL}(DC)max to V_{IH}(DC)min must be monotonic slope
2. Input signal falling edge from V_{IH}(DC)min to V_{IL}(DC)max must be monotonic slope

Revision History

Rev. A – 09/18

- Initial release

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This data sheet contains minimum and maximum limits specified over the power supply and temperature range set forth herein.
Although considered final, these specifications are subject to change, as further product development and data characterization sometimes occur.