

Serial Flash memories

for data and parameter storage



The M45PE and M25PE series are feature-rich, low pin-count, serial access families that complement **STMicroelectronics'** extensive range of M25P Serial Flash for code storage.

The use of a serial access Flash memory for data or parameter storage enables a significant reduction in pin-count and overall cost.

Data and parameter storage for any Serial Flash application

The M45PE and M25PE families offer increased added-value for all applications requiring fast read and write access to data and parameters, such as digital answering machines (DECT, corded phones), pagers, digital cameras, home video game systems, wireless LANs, fax machines, cellular phones, voice memo recorders, PDAs, MP3 players/recorders and GPS systems.

Features that make the difference

The M45PE and M25PE Flash memories offer a natural extension (for densities above 1Mb) to EEPROM devices compatible with the popular SPI bus. They offer the best compromise between die size and granularity, as the erase operation inherent to Flash technology can be performed down to an incredibly small size of a single page of just 256 bytes. In addition, the internal logic is flexible enough to allow a single byte (up to a full page of 256 bytes) to be

written (erase/write) in a single shot. The time to write any number of bytes (from 1 to 256) within a single page is 12ms. This consists of 10ms page erase operation, automatically followed by a 2ms page operation, during which any unchanged bytes are restored to their initial value. This flexibility makes the M45PE and M25PE Flash families as friendly to use as the EEPROM. The high-speed 25MHz clock allows a fast read operation, thereby significantly reducing data flow through the serial bus. The M45PE and M25PE products feature the extended 3V range (2.7 to 3.6V) and, to reduce power consumption, a deep power-down mode that draws less than 1µA. The M45PE family offers a specific SPI pin-out, while the M25PE has a serial standard SPI pin-out and other features. Both families are available in S08, MLP8 and S016W packages.

Key features

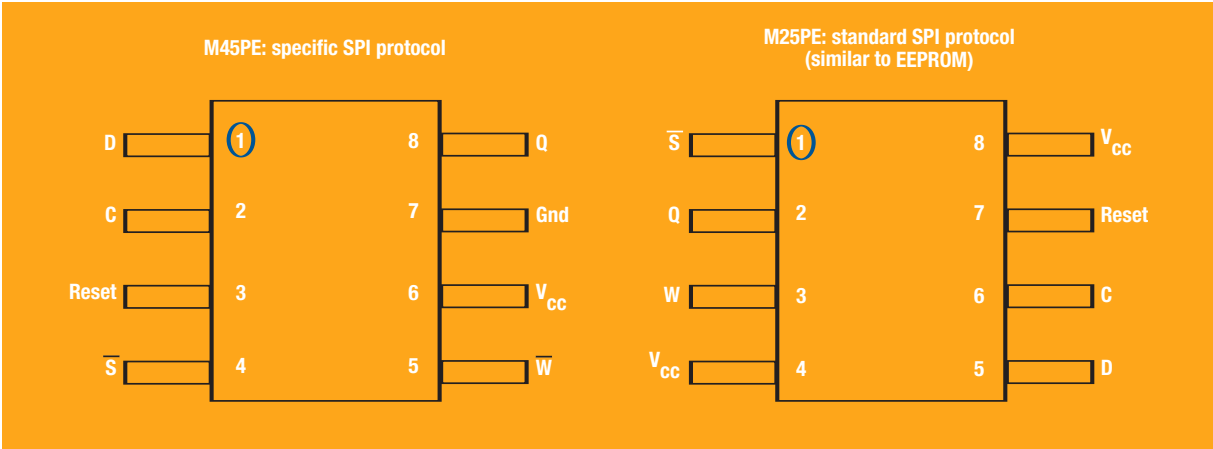
- SPI bus compatible serial interface (M45PE: specific SPI pin-out; M25PE: standard SPI pin-out)
- Clock frequency up to 25MHz
- Page: 256 bytes
- Page programming in one shot (1ms)
- Page erase (256 byte) or sector erase
- Page write offering byte granularity
- Deep power-down mode
- Power supply: 2.7 to 3.6V
- Low pin-count packages
- Specific features for M25PE: dedicated device signature, additional bulk erase instruction, specific protection features
- More than 100,000 erase/program cycles
- More than 20 years data retention

Benefits

- Fast access to any data byte
- Fast transfer time
- Optimized granularity for data and parameter storage
- Optimizes memory size required to update data
- Simplifies software
- Low power consumption
- Reduces pin-count
- Saves board space

Part number	Memory size	Features	Packages
M45PE10-VMP6T/-VMN6T	1Mb	25 MHz, SPI, page erase	MLP8, SO8N
M25PE10-VMP6T/-VMN6T	1Mb	25 MHz, SPI, page erase	MLP8, SO8N
M45PE20-VMP6T/-VMN6T	2Mb	25 MHz, SPI, page erase	MLP8, SO8N
M25PE20-VMP6T/-VMN6T	2Mb	25 MHz, SPI, page erase	MLP8, SO8N
M45PE40-VMP6T/-VMF6T	4Mb	25 MHz, SPI, page erase	MLP8, SO16W
M25PE40-VMP6T/-VMF6T	4Mb	25 MHz, SPI, page erase	MLP8, SO16W
M45PE80-VMP6T/-VMF6T	8Mb	25 MHz, SPI, page erase	MLP8, SO16W
M45PE16-VME6T	16Mb	25 MHz, SPI, page erase	MLP8, SO16W

All these packages use ST's lead-free technology for RoHS compliance (the EU's directive on the restriction of use of hazardous substances)



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Full product information at www.st.com

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