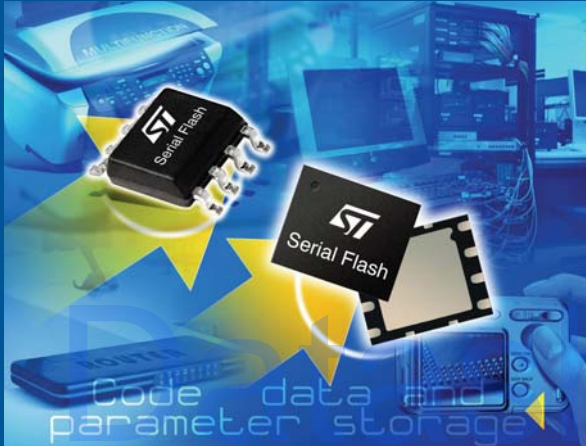


Serial Flash families

High performance memories for code,
data and parameter storage



The leader in Serial Flash memories, **STMicroelectronics** is delivering in volume the M25P, M25PE and M45PE families, specifically designed to meet all non-volatile storage requirements, but at a highly competitive price.

The use of a Serial-access Flash memory for code, data or parameter storage enables a significant cost reduction at board and overall application levels, while maintaining high performance. ST Serial Flash families for code, data and parameter storage are the optimum solution in terms of flexibility, small package size, high frequencies and cost-effectiveness.

M25P family, tailored for code storage

The Serial Flash M25P portfolio ranges from 512Kb to 128Mb and is tailored for code storage and other non-volatile memory applications. The M25P solution creates added-value for all applications requiring fast downloads and code execution, such as hard disk drives, multi-function printers, graphic cards, optical disk drives, DVD players, digital TV and cameras.

New and diverse applications such as wireless LANs, Set-Top Boxes, DSL and cable modems are turning to Serial Flash to reduce controller or ASIC pin counts, board space, power consumption, software development and overall system costs.

M25PE/M45PE families, perfect for data and parameter storage

From 1 to 16Mb, the M25PE/M45PE series creates added-value for all applications requiring fast updates of data and parameters (starting from a single byte) in non-volatile memories, 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, monitors, flat display panels, GPS systems and general data loggers.

M25P family, tailored for code storage

The high speed, low-voltage M25P family reads and programs data through a SPI interface at a frequency of 50MHz and above.

With dedicated software and hardware features to protect memory content, the M25P is supplied with a single voltage of 2.7 to 3.6V and, in order to reduce power

consumption, features a deep power-down mode that draws less than 1µA. Moreover, a four-wire SPI interface considerably reduces the bus master pin count, resulting in increased integration and cost-competitiveness. M25P Serial Flash memories are available in MLP, SO and TSSOP8 (for 512Kb) packages.

Key features

- SPI bus compatible serial interface
- Clock frequency of 50MHz and above
- Power supply: 2.7 to 3.6V
- Page size: 256 Bytes
- Sector size: 64 Kbytes
- Software features
 - Page program (1 to 256 Bytes)
 - Sector and bulk erase commands
 - JEDEC Electronic Signature
 - Write-protection function
- Deep power-down mode
- More than 100,000 erase/program cycles
- Over 20 years data retention

Benefits

- Cost-effective solution
- Reduced pin count (on ASIC)
- Saves space on printed circuit board
- Simplified hardware
- Faster hardware and upgradeable software
- Same footprint for any memory capacity
- Low cost packages
- Low power consumption

M25P family product portfolio

Part number	Memory size	Features	Packages
M25P05-AVDW6TP	512Mb	50MHz, SPI, sector erase	TSSOP8
M25P05-AVMN6P			SO8N
M25P05-AVMP6G			MLP8 (5x6)
M25P10-AVMN6P	1Mb	50MHz, SPI, sector erase	SO8N
M25P10-AVMP6G			MLP8 (5x6)
M25P20-VMN6P	2Mb	50MHz, SPI, sector erase	SO8N
M25P20-VMP6G			MLP8 (5x6)
M25P40-VMN6P	4Mb	50MHz, SPI, sector erase	SO8N
M25P40-VMP6G			MLP8 (5x6)
M25P80-VMN6P	8Mb	50MHz, SPI, sector erase	SO8N
M25P80-VMW6P			SO8W
M25P80-VMP6G			MLP8 (5x6)
M25P16-VMN6P	16Mb	50MHz, SPI, sector erase	SO8N
M25P16-VMW6P			SO8W
M25P16-VMF6P			S16W
M25P16-VMP6G			MLP8 (5x6)
M25P32-VMF6P	32Mb	50MHz, SPI, sector erase	SO16W
M25P32-VME6G			MLP8 (6x8)
M25P64-VMF6P	64Mb	50MHz, SPI, sector erase	SO16W
M25P64-VME6G			MLP8 (6x8)
M25P128-VMF6P	128Mb	50MHz, SPI, sector erase	SO16W
M25P128-VME6G			MLP8 (6x8)

M25PE and M45PE families, perfect for data and parameter storage

The M25PE and M45PE are Flash memories offering natural high density extensions, from 1 to 16Mb, for EEPROM devices compatible with the popular SPI bus. They offer the best compromise between die size and granularity, as the erase operation inherent to the Flash technology can be performed down to the small size of one page of 256 Bytes. In addition, the internal logic is flexible enough to enable EEPROM-style byte alterability when updating (erase + program), from one byte up to a full page of 256 Bytes in a single shot.

This flexibility makes the M25PE and M45PE Flash series as user-friendly as EEPROM technology.

The devices' high speed (33 to 50MHz and above) enables fast read instructions; significantly reducing access time for large amounts of data through the serial bus. The power supply for the M25PE/M45PE is the extended 3V range (2.7 to 3.6V) and, in order to reduce power consumption, the M25PE/M45PE series feature a deep power-down mode that draws less than 1µA.

The M25PE family offers a standard serial SPI pin-out, while the M45PE has a specific SPI pin-out. Both families are available in S08 and MLP packages.

Key features

- SPI bus compatible serial interface (M25PE: standard SPI pin-out M45PE: specific SPI pin-out)
- Clock frequency up to 50MHz
- Page size: 256 Bytes
- Page write offering EEPROM-like Byte granularity
- Page programming in one shot (1ms)
- Page erase (256 Bytes) or sector erase
- Deep power-down mode
- Power supply: 2.7 to 3.6V
- More than 100,000 erase/program cycles
- Over 20 years data retention

Benefits

- Low pin count packages
- Fast access to any data Byte
- Fast transfer time
- Optimized granularity for data and parameter storage
- Optimizes memory size required to update the data
- Optimizes data update time
- User-friendly software
- Low power consumption
- Reduced pin count
- Saves space on PCB

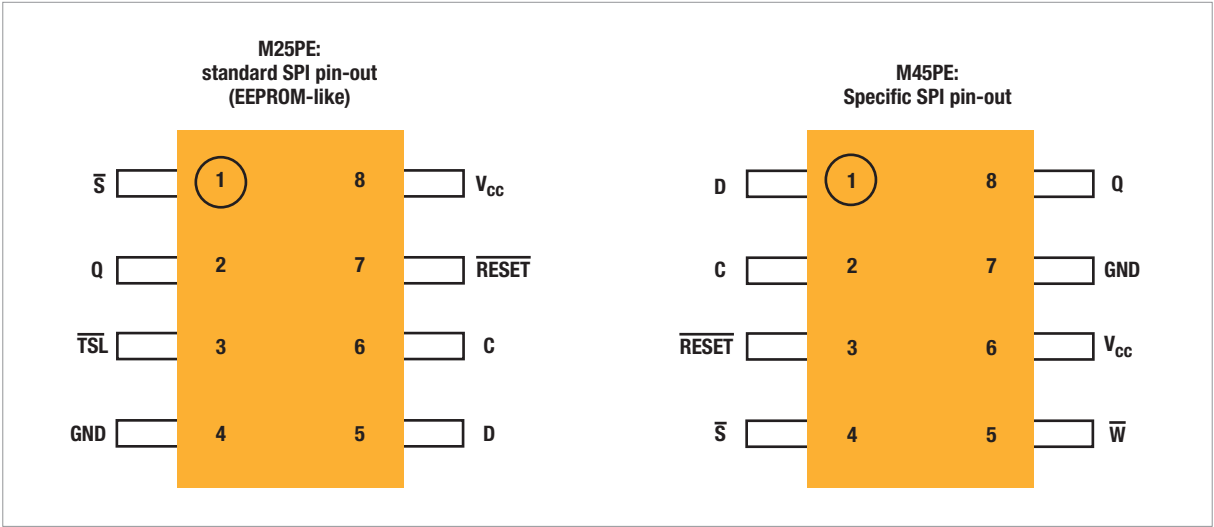
M25PE family product portfolio

Part number	Memory size	Features	Packages
M25PE10-VMN6P	1Mb	33MHz, SPI, page erase	SO8N
M25PE10-VMP6G			MLP8 (5x6)
M25PE20-VMN6P	2Mb	33MHz, SPI, page erase	SO8N
M25PE20-VMP6G			MLP8 (5x6)
M25PE40-VMN6P	4Mb	33MHz, SPI, page erase	SO8N
M25PE40-VMW6P			SO8W
M25PE40-VMP6G			MLP8 (5x6)
M25PE80-VMN6P			SO8N
M25PE80-VMW6P	8Mb	50MHz, SPI, page erase	SO8W
M25PE80-VMP6G			MLP8 (5x6)
M25PE16-VMW6P	16Mb	50MHz, SPI, page erase	SO8W
M25PE16-VMP6G			MLP8 (5x6)

M45PE family product portfolio

Part number	Memory size	Features	Packages
M45PE10-VMN6P	1Mb	33MHz, SPI, page erase	SO8N
M45PE10-VMP6G			MLP8 (5x6)
M45PE20-VMN6P	2Mb	33MHz, SPI, page erase	SO8N
M45PE20-VMP6G			MLP8 (5x6)
M45PE40-VMN6P	4Mb	33MHz, SPI, page erase	SO8N
M45PE40-VMW6P			SO8W
M45PE40-VMP6G			MLP8 (5x6)
M45PE80-VMN6P	8Mb	50MHz, SPI, page erase	SO8N
M45PE80-VMW6P			SO8W
M45PE80-VMP6G			MLP8 (5x6)
M45PE16-VMW6P	16Mb	50MHz, SPI, page erase	SO8W
M45PE16-VMP6G			MLP8 (5x6)

Serial Flash pin-out



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