

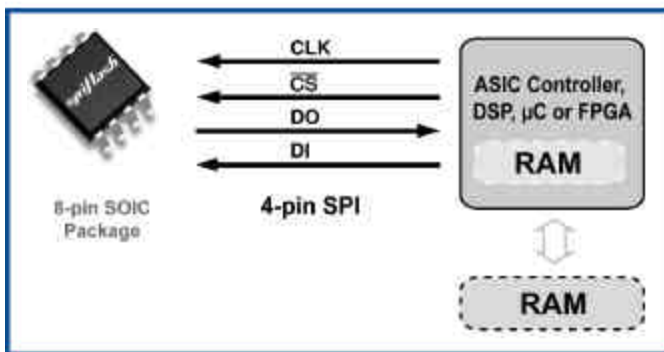
# SpiFlash<sup>®</sup>

Serial Flash Memories

Add a little Flash  to your next design.

## SpiFlash<sup>®</sup> Serial Flash Memories from Winbond!

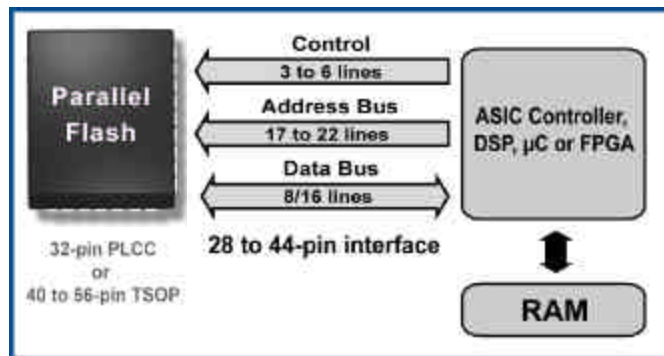
SpiFlash<sup>®</sup> Serial Flash memories from Winbond feature the popular Serial Peripheral Interface (SPI), densities from 1M to 32M-bit, and performance and packaging tailored for emerging electronic applications. SpiFlash memories offer a pin, space and cost efficient alternative to ordinary Parallel Flash for systems that download code to internal or external RAM. They can also be an efficient solution for data or voice storage. SpiFlash memories are ideal for a wide variety of applications including: DVD/CD drives, DSL modems, wireless LANs, network cards, hard drives, printers, set top boxes, PCs, MP3, GPS, FPGAs and more.



NEW WAY



OLD WAY



### SpiFlash Memory

- 1M-bit to 32M-bit densities
- Popular SPI interface
- Small SOIC packages
- Fast clock speeds
- Alternative to Parallel Flash

### Serial Code Storage

For ASIC Controllers, DSPs and FPGAs Download code to RAM at power-up

### Data and Voice Storage

For  $\mu$ Cs and DSPs with SPI

### SpiFlash Memory Benefits

- Fewer pins, smaller and simpler PCBs
- Lower power and system costs

### Applications




DVD/CD Drives, Hard Drives, DSL, WLAN, PCs, Printers, Networking, Set-top, MP3, DAB, FPGAs, Industrial, Consumer and more.



## SpiFlash® Memory Specifications

SpiFlash® memories use a 4-pin (clock, chip select, data in, data out) SPI port. Optional write-protect and hold pins are also provided. Data can read at clock rates of up to 50MHz. Memory is organized in pages of 256 bytes per page with typical page program time of 2ms. SpiFlash devices operate on a single 2.7V to 3.6V supply and feature low-power consumption and microamp standby current. Densities from 1M to 16M-bit are housed in tiny 8-pin SOIC packages that use less than 25% the space of Parallel Flash memories. All SpiFlash products meet industrial temperature operation, are available in Green "RoHS" compliant packages and are supported by popular third party PROM programmers. For more information on Winbond SpiFlash memories please visit [www.spiflash.com](http://www.spiflash.com) or [www.winbond-usa.com](http://www.winbond-usa.com).

## Winbond SpiFlash Memory Reference Chart\*

Winbond P/N*	NexFlash P/N*	Density	Organization	Program Pages	Erasable Sectors	Clock Freq.	Package	Green (Lead Free)	
W25P10VSN1	NX25P10-VN1	1M-bit	128KB x 1	512	2 x 64KB	40MHz	SOIC 8 150mil	No	
W25P10VSNIG	NX25P10-VNIG	1M-bit	128KB x 1	512	2 x 64KB	40MHz	SOIC 8 150mil	Yes	
W25P20VSN1	NX25P20-VN1	2M-bit	256KB x 1	1,024	4 x 64KB	40MHz	SOIC 8 150mil	No	
W25P20VSNIG	NX25P20-VNIG	2M-bit	256KB x 1	1,024	4 x 64KB	40MHz	SOIC 8 150mil	Yes	
W25P40VSN1	NX25P40-VN1	4M-bit	512KB x 1	2,048	8 x 64KB	40MHz	SOIC 8 150mil	No	
W25P40VSNIG	NX25P40-VNIG	4M-bit	512KB x 1	2,048	8 x 64KB	40MHz	SOIC 8 150mil	Yes	
W25B40VSNIG W25B40AVSNIG	NX25B40-VNIG NX25B40A-VNIG	4M-bit	512KB x 1	2,048	7 x 64KB + 4, 4, 8, 16, 32-KB	40MHz	SOIC 8 150mil	Yes	
W25P80VSSIG	NX25P80-VSIG	8M-bit	1MB x 1	4,096	16 x 64KB	50MHz	SOIC 8 208mil	Yes	
W25P16VSSIG	NX25P16-VSIG	16M-bit	2MB x 1	8,192	32 x 64KB	50MHz	SOIC 8 208mil	Yes	
W25P16VFIG	NX25P16-VFIG	16M-bit	2MB x 1	8,192	32 x 64KB	50MHz	SOIC 16 300mil	Yes	
W25P32VFIG	NX25P32-VFIG	32M-bit	4MB x 1	16,384	64 x 64KB	50MHz	SOIC 16 300mil	Yes	

\* Winbond acquired NexFlash Technologies in June 2005. Winbond SpiFlash memories are fully compatible with NexFlash SpiFlash memory specifications. All SpiFlash memories support 2.7V to 3.6V supply operation, -40 to +85 C temperature and are available in tube or tape and reel.



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