

# W25Q-NE Series

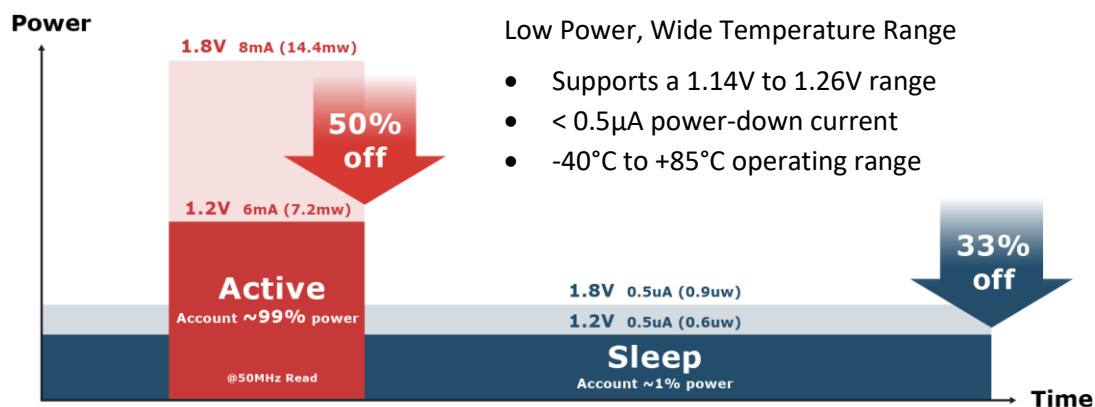
## 1.2V QSPI NOR Flash

Well-suited for SoCs manufactured in sub-10nm processes

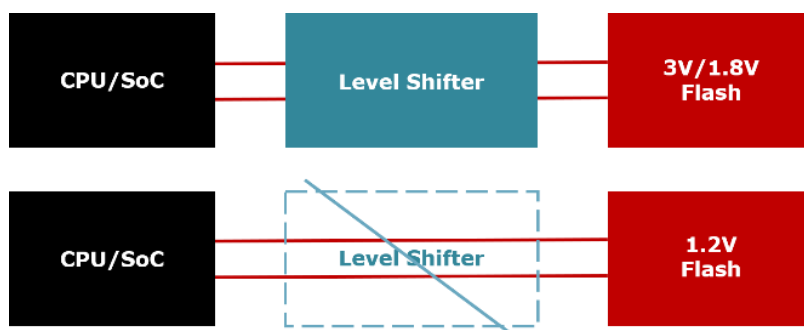
Winbond's W25Q-NE 1.2V QSPI NOR Flash Series, 8Mb to 2Gb, is designed for advanced SoCs that require high performance with lower power consumption. The series supports SPI, Dual I/O, Quad I/O, and QPI while maintaining a backward-compatible command set, allowing most designs to migrate to 1.2V without firmware changes. Built for <10nm SoC I/O, W25Q-NE connects directly to low-voltage interfaces and removes external level shifters, simplifying boards and reducing BOM cost.

### Why W25Q-NE Series

- **Lower power:** By reducing the Vcc from 1.8V to 1.2V, power consumption is expected to reduce by 33%.
- **System simplification:** Switching from a 1.8V to 1.2V Flash eliminates level translators, streamlining PCB design and reducing BOM cost
- **High performance:** STR and DTR support up to 133MHz
- **Execute-In-Place (XIP)** support for faster boot and code execution



### Optimize Circuit & Cost



# Features

## Performance and Integration

- Read Command Bypass mode (Continuous Read)
- Designed for and compliant with <10nm process SoC I/O requirements
- Backward-compatible command set (no firmware/software change)
- Compatible with systems migrating to lower I/O voltages, including AI computing platforms where 1.2V is required

## Reliability and Protection

- Built-in ECC<sup>1</sup>
- Individual block protect<sup>1</sup>
- One-Time Programmable (OTP) regions
- /BUSY<sup>1</sup> output

Note<sup>1</sup>: 512Mb - 2Gb

## Applications

- AI server and accelerators
- Notebook and desktop computers
- GPU accelerators
- OLED systems
- Smartphones and mobile devices
- Other energy-conscious, high-performance systems

Voltage	Density	Part Number	Package
1.14V - 1.26V	2 Gb	W25Q02NE	SOP16 300mil, WSON8 8x6mm, TFBGA24 (5x5)
	1 Gb	W25Q01NE	SOP16 300mil, WSON8 8x6mm, TFBGA24 (5x5)
	512 Mb	W25Q51NE	SOP16 300mil, WSON8 8x6mm, TFBGA24 (5x5)
	256 Mb	W25Q25NE	SOP16 300mil, WSON8 8x6mm, WSON8 6x5mm, WLCSP
	128 Mb	W25Q12NE	SOP8 208mil, WSON8 6x5mm, XSON8 4x4mm, WLCSP
	64 Mb	W25Q65NE	SOP8 208mil, XSON8 4x4mm, USON8 3x4mm, WLCSP
	32 Mb	W25Q32NE	SOP8 150mil, SOP8 208mil, USON8 4x3mm, WLCSP
	16 Mb	W25Q16NE	SOP8 150mil, SOP8 208mil, XSON8 2x3mm, WLCSP
	8 Mb	W25Q81NE	SOP8 150mil, XSON8 2x3mm, WLCSP

\* See datasheet for further technical information. This is subject to change without notice.

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