

QspiNAND Flash

- High data thru-put with small package
- Reliable with built-in ECC



Winbond is pleased to announce its new range of QspiNAND Flash, which offers embedded designers a winning combination of affordability and reliability. Our QspiNAND Flash comes in four densities: 512Mb, 1Gb, 2Gb, and 4Gb, all of which feature the Quad SPI interface and cater to your storage needs, specifically when dealing with NOR Flash systems that exceed 512Mb densities.

Why Choose Winbond's QspiNAND Products?

Winbond's W25N QspiNAND Flash series is designed with a standard SPI interface and a bus width of x1/x2/x4. With densities ranging from 512Mb to 4Gb and an operating voltage of either 1.8V or 3.3V, QspiNAND Flash memory can be a cost-effective option for densities of 512Mb and above when assessing the cost per bit in comparison to high density NOR Flash. Winbond's QspiNAND is available in packages up to 80% smaller than ONFI NAND which helps save costs and PCB space. These savings extend beyond just PCB costs and encompass various aspects of your production process.

For those seeking a dependable and budget-friendly memory solution, Winbond's QspiNAND products are the ideal choice. Not only do they offer cost-efficiency, but they also boast faster program and erase times, enhancing your overall system performance.



SLC NAND Flash

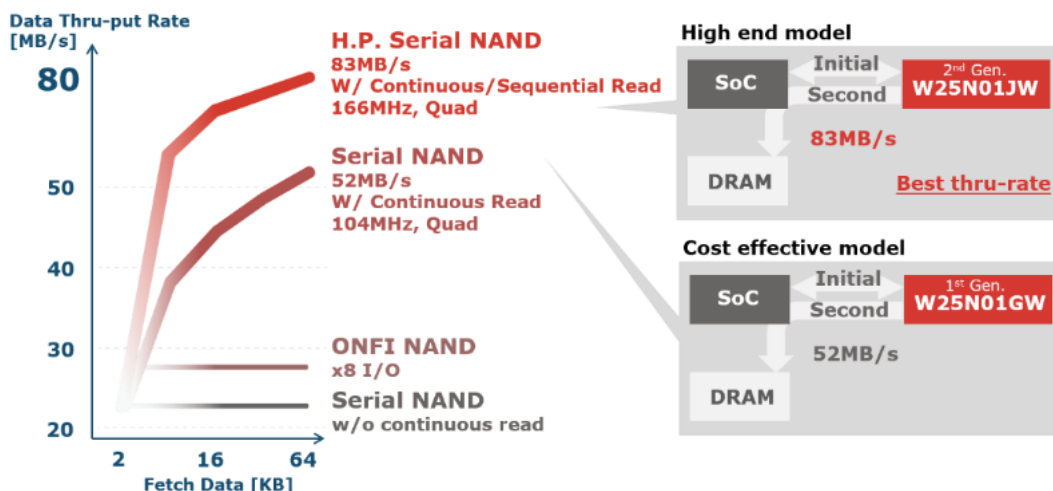
80% Package Size Reduction



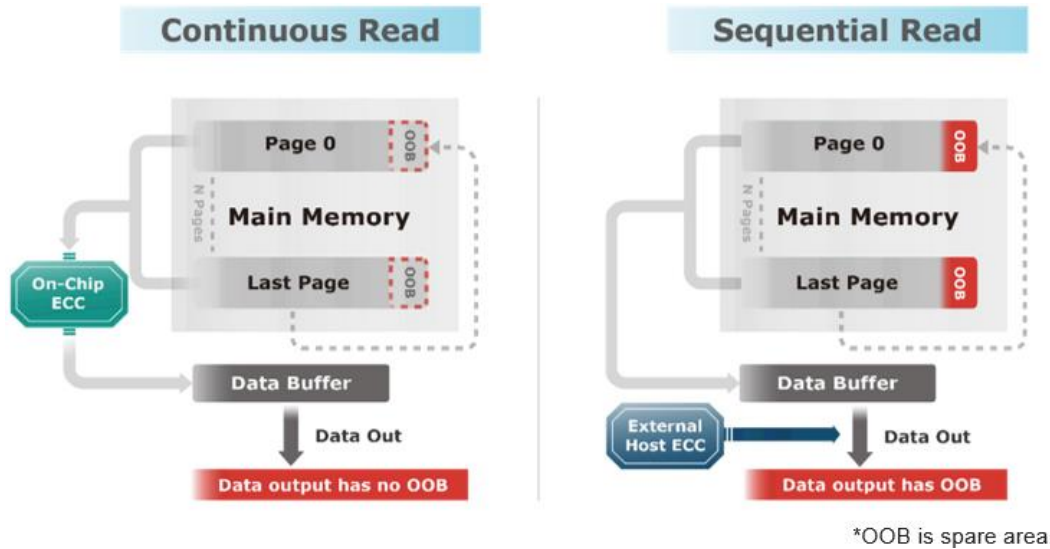
QspiNAND Flash

Winbond's Innovative Features

When it comes to code storage memory, Winbond's QspiNAND products provide reliability and cost-effectiveness. The code stored in Flash memory can be quickly and efficiently transferred to DRAM for fast execution through the use of advanced functionalities like "Continuous Read Mode" and "Sequential Read Mode". The high-performance W25N01JW series offers an impressive throughput of up to 83MB/s with Continuous Read mode at a clock rate of 166MHz. Additionally, the series supports DTR (Double Transfer Rate) functionality. Winbond's QspiNAND Flash memory also features built-in ECC (Error Correcting Code), which manages error detection and correction functions (which ONFI NAND does not support), thereby offloading these tasks from the host controller.



The perfect solution for efficient code storage and rapid data transfer.



With its extensive range of features and capabilities, Winbond's QspiNAND Flash series is an excellent choice for those seeking a reliable, cost-effective, and high-performance code storage memory solution. Density options include 512Mb, 1Gb, 2Gb, and 4Gb, with voltage options of 1.7V-1.95V or 2.7V-3.6V. The Continuous Read and Sequential Read modes allow for efficient reading of an entire array of data with just one command.

In conclusion, Winbond's QspiNAND Flash memory products offer designers a reliable and cost-effective solution for storing code, especially in NOR Flash systems with densities exceeding 512Mb. With built-in ECC, the QspiNAND family of products ensures greater reliability for every application. Simultaneously, our High-Performance QspiNAND Flash memory boasts faster data transfer rates, making it an excellent fit for automotive applications and beyond. Choose Winbond for innovation, affordability, and performance. Elevate your embedded designs with our QspiNAND Flash memory solutions today.

Please note: NAND Flash memory requires a controller to manage various functions related to error detection and correction, as well as memory block management. Winbond's QspiNAND features built-in ECC, which handles error detection and correction, thereby offloading these tasks from the controller.

Winbond QspiNAND Flash Memory Selection Guide (Industrial Grade)

| Part Number | Density (bit) | Clock Frequency (MHz) | Min. Operating Voltage (V) | Max. Operating Voltage (V) | Min. Operating Temp. (°C) | Max. Operating Temp. (°C) | Page Size (Byte) | Spare Area (Byte) | On Chip ECC Count | Double Transfer Rate (DTR MHz) | SpiStack (C2h command) | Dual/Quad SPI Clocks | Default Read Mode | Able to be Switched Mode | Package |
|---------------------------|---------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|------------------|-------------------|-------------------|--------------------------------|------------------------|----------------------|-------------------|--------------------------|----------------------|
| W25N04LWZEIG | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 4096 | 256 | 8 | | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N04LWZEIE ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 4096 | 256 | 8 | | | ● | Buffer Read | Sequential Read | WS0N8 8x6mm |
| W25N04KVZEIR | 4G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N04KVTBIR | 4G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N04KVZEIU | 4G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N04KVTBIU ¹ | 4G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N04KWZEIR | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N04KWTBIR ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N04KWZEIU ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N04KWTBIU ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEIR | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N02KVTBIR ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEIU | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N02KVTBIU ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEIE | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | Sequential Read | WS0N8 8x6mm |
| W25N02KVTBIE ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | Sequential Read | TFBGA24 8x6mm(5x5-1) |
| W25N02JWSFIF ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N02JWZEIF | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N02JWTBIF | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N02JWSFIC ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N02JWZEIC ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N02JWTBIC ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KWZEIR | 2G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N02KWTBIR ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N02KWZEIU ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N02KWTBIU ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVSFIG | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01GVZEIG | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N01GVTBIG ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCIG ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(6x4) |
| W25N01GVSFIT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01GVZEIT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N01GVTBIT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCIT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(6x4) |
| W25N01GVSFIR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N01GVZEIR | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N01GVTBIR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCIR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(6x4) |
| W25N01GWSFIG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01GWZEIG | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N01GWTBIG | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GWTCIG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(6x4) |
| W25N01GWSFIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01GWZEIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N01GWTBIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GWTCIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(6x4) |
| W25N01JWSFIG ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01JWZEIG | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |

Winbond QspiNAND Flash Memory Selection Guide (Industrial Grade)

| Part Number | Density (bit) | Clock Frequency (MHz) | Min. Operating Voltage (V) | Max. Operating Voltage (V) | Min. Operating Temp. (°C) | Max. Operating Temp. (°C) | Page Size (Byte) | Spare Area (Byte) | On Chip ECC Count | Double Transfer Rate (DTR MHz) | SpiStack (C2h command) | Dual/Quad SPI Clocks | Default Read Mode | Able to be Switched Mode | Package |
|----------------------------|---------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|------------------|-------------------|-------------------|--------------------------------|------------------------|----------------------|-------------------|--------------------------|----------------------|
| W25N01JWBTB1G ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01JWSFIT ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01JWZEIT ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N01JWBTBIT ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01KVZPIR | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N01KVZEIR | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N01KVZPIU ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 96 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 6x5mm |
| W25N01KVZEIU ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 96 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 8x6mm |
| W25N01KVZPIE ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 96 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 6x5mm |
| W25N01KVZEIE ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 85 | 2048 | 96 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 8x6mm |
| W25N01KWZPIG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | Continuous Read | WSO8 6x5mm |
| W25N01KWZEIG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | Continuous Read | WSO8 8x6mm |
| W25N01KWZPIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N01KWZEIT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N01KWZPIR ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N01KWZEIR ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N01KWZPIU ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 6x5mm |
| W25N01KWZEIU ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 8x6mm |
| W25N01KWZPIE ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 6x5mm |
| W25N01KWZEIE ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 8x6mm |
| W25N512GVFIG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N512GVPIG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WSO8 6x5mm |
| W25N512GVEIG | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WSO8 8x6mm |
| W25N512GVBIG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GVFIT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N512GVPIT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N512GVEIT | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N512GVBIT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GVFIR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N512GVPIR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N512GVEIR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N512GVBIR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N512GWFIT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N512GWFIT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N512GWEIT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N512GWBIT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GWYIT | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WLCSP (48-ball) |
| W25N512GWFIR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N512GWPIR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N512GWEIR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N512GWBIR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N512GWYIR | 512M | 104 | 1.7 | 1.95 | -40 | 85 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WLCSP (48-ball) |

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

¹ please contact Winbond for inventory preparation

Winbond QspiNAND Flash Memory Selection Guide (Industrial Plus Grade)

| Part Number | Density (bit) | Clock Frequency (MHz) | Min. Operating Voltage (V) | Max. Operating Voltage (V) | Min. Operating Temp. (°C) | Max. Operating Temp. (°C) | Page Size (Byte) | Spare Area (Byte) | On Chip ECC Count | Double Transfer Rate (DTR MHz) | SpiStack (C2h command) | Dual/Quad SPI Clocks | Default Read Mode | Able to be Switched Mode | Package |
|----------------------------|---------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|------------------|-------------------|-------------------|--------------------------------|------------------------|----------------------|-------------------|--------------------------|----------------------|
| W25N04KVZEJR ¹ | 4G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N04KVBTBJR ¹ | 4G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N04KVZEJU ¹ | 4G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N04KVBTBJU ¹ | 4G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N04KWZEJR ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N04KWBTBJR ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N04KWZEJU ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N04KWBTBJU ¹ | 4G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEJR | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N02KVBTBJR ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEJU ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N02KVBTBJU ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KVZEJ ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | Sequential Read | WS0N8 8x6mm |
| W25N02KVBTJ ¹ | 2G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | Sequential Read | TFBGA24 8x6mm(5x5-1) |
| W25N02JWSFJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N02JWZEJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N02JWBTJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N02JWSFJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N02JWZEJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N02JWBTJ ¹ | 2G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N02KWZEJR | 2G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N02KWBTBJR ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N02KWZEJU ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | WS0N8 8x6mm |
| W25N02KWBTBJU ¹ | 2G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 128 | 8 | | | ● | Sequential Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVSFJG ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01GVZEJG | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N01GVBTJG ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCJG ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(6x4) |
| W25N01GVSFJT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01GVZEJT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N01GVBTJT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCJT ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(6x4) |
| W25N01GVSFJR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N01GVZEJR | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WS0N8 8x6mm |
| W25N01GVBTJR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N01GVTCJR ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(6x4) |
| W25N01GWSFJG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01GWZEJG | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N01GWBTJG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GWTCJG ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(6x4) |
| W25N01GWSFJT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01GWZEJT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |
| W25N01GWBTJT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01GWTCJT ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(6x4) |
| W25N01JWSFJG ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N01JWZEJG ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | WS0N8 8x6mm |
| W25N01JWBTJG ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N01JWSFJT ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N01JWZEJT ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | WS0N8 8x6mm |

Winbond QspiNAND Flash Memory Selection Guide (Industrial Plus Grade)

| Part Number | Density (bit) | Clock Frequency (MHz) | Min. Operating Voltage (V) | Max. Operating Voltage (V) | Min. Operating Temp. (°C) | Max. Operating Temp. (°C) | Page Size (Byte) | Spare Area (Byte) | On Chip ECC Count | Double Transfer Rate (DTR MHz) | SpiStack (C2h command) | Dual/Quad SPI Clocks | Default Read Mode | Able to be Switched Mode | Package |
|---------------------------|---------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|------------------|-------------------|-------------------|--------------------------------|------------------------|----------------------|-------------------|--------------------------|----------------------|
| W25N01JWBTJ ¹ | 1G | 166 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | 80 | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N01KVZPJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N01KVZEJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N01KVZPJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 96 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 6x5mm |
| W25N01KVZEJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 96 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 8x6mm |
| W25N01KVZPJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 96 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 6x5mm |
| W25N01KVZEJ ¹ | 1G | 104 | 2.7 | 3.6 | -40 | 105 | 2048 | 96 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 8x6mm |
| W25N01KWZPJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | Continuous Read | WSO8 6x5mm |
| W25N01KWZEJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | Continuous Read | WSO8 8x6mm |
| W25N01KWZPJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N01KWZEJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N01KWZPJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N01KWZEJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N01KWZPJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 6x5mm |
| W25N01KWZEJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Sequential Read | Buffer Read | WSO8 8x6mm |
| W25N01KWZPJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 6x5mm |
| W25N01KWZEJ ¹ | 1G | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 4 | | | ● | Buffer Read | Sequential Read | WSO8 8x6mm |
| W25N512GVFJG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | SOP16 300mil |
| W25N512GVPJG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WSO8 6x5mm |
| W25N512GVEJG ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | WSO8 8x6mm |
| W25N512GVBGJ ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | Continuous Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GVFJT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N512GVPJT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N512GVEJT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N512GVBJT ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GVFJR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N512GVPJR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N512GVEJR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N512GVBJR ¹ | 512M | 166 | 2.7 | 3.6 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N512GWFTJ ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | SOP16 300mil |
| W25N512GWPTJ ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 6x5mm |
| W25N512GWEJT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WSO8 8x6mm |
| W25N512GWBJT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | TFBGA24 8x6mm(5x5-1) |
| W25N512GWYJT ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Continuous Read | Buffer Read | WLCSP (48-ball) |
| W25N512GWFJR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | SOP16 300mil |
| W25N512GWPRJ ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 6x5mm |
| W25N512GWEJR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WSO8 8x6mm |
| W25N512GWBJR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | TFBGA24 8x6mm(5x5-1) |
| W25N512GWYJR ¹ | 512M | 104 | 1.7 | 1.95 | -40 | 105 | 2048 | 64 | 1 | | | ● | Buffer Read | - | WLCSP (48-ball) |

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

¹ please contact Winbond for inventory preparation



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