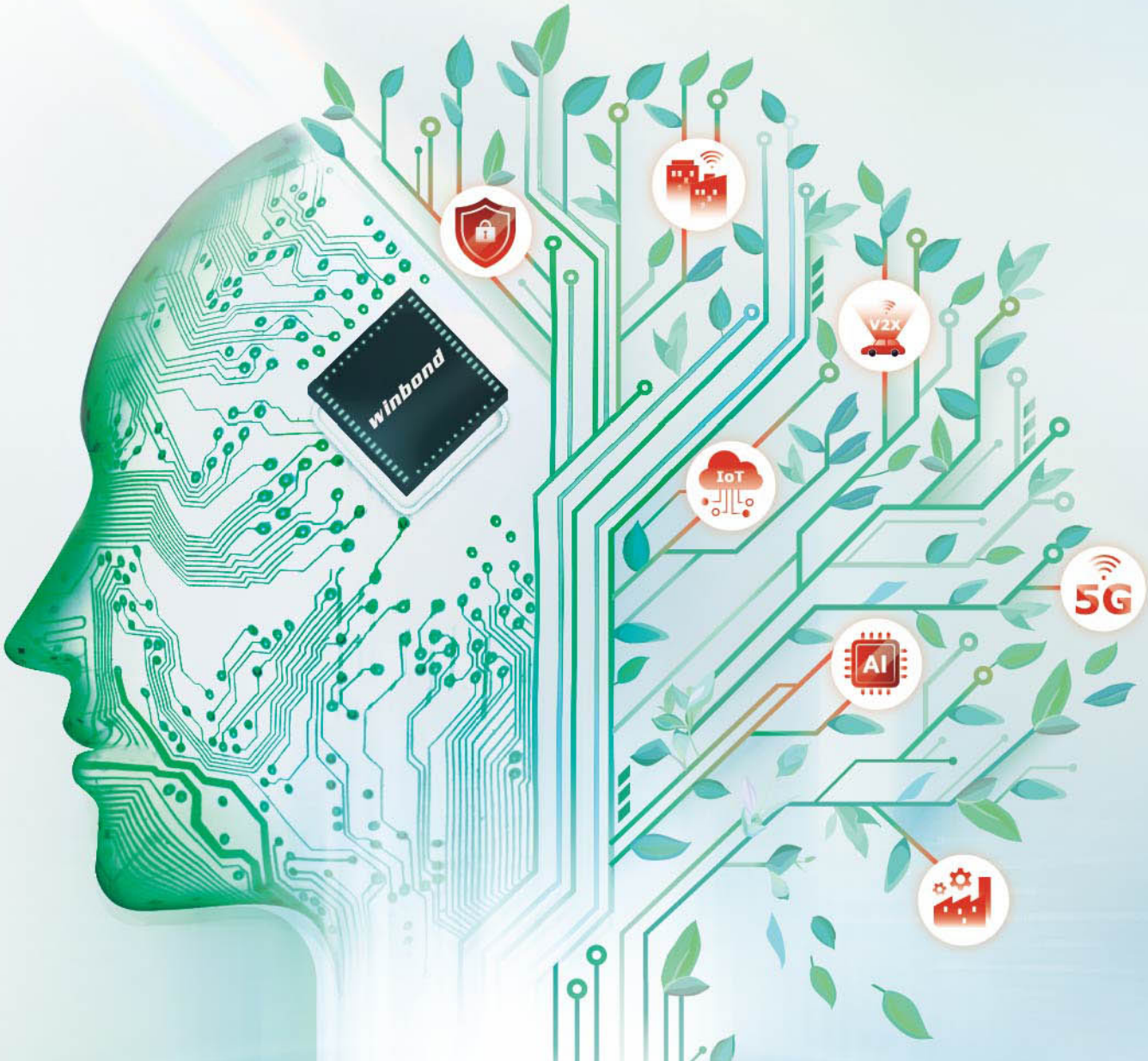
winbond

Code Storage Flash Memory
Product Selection Guide 2025



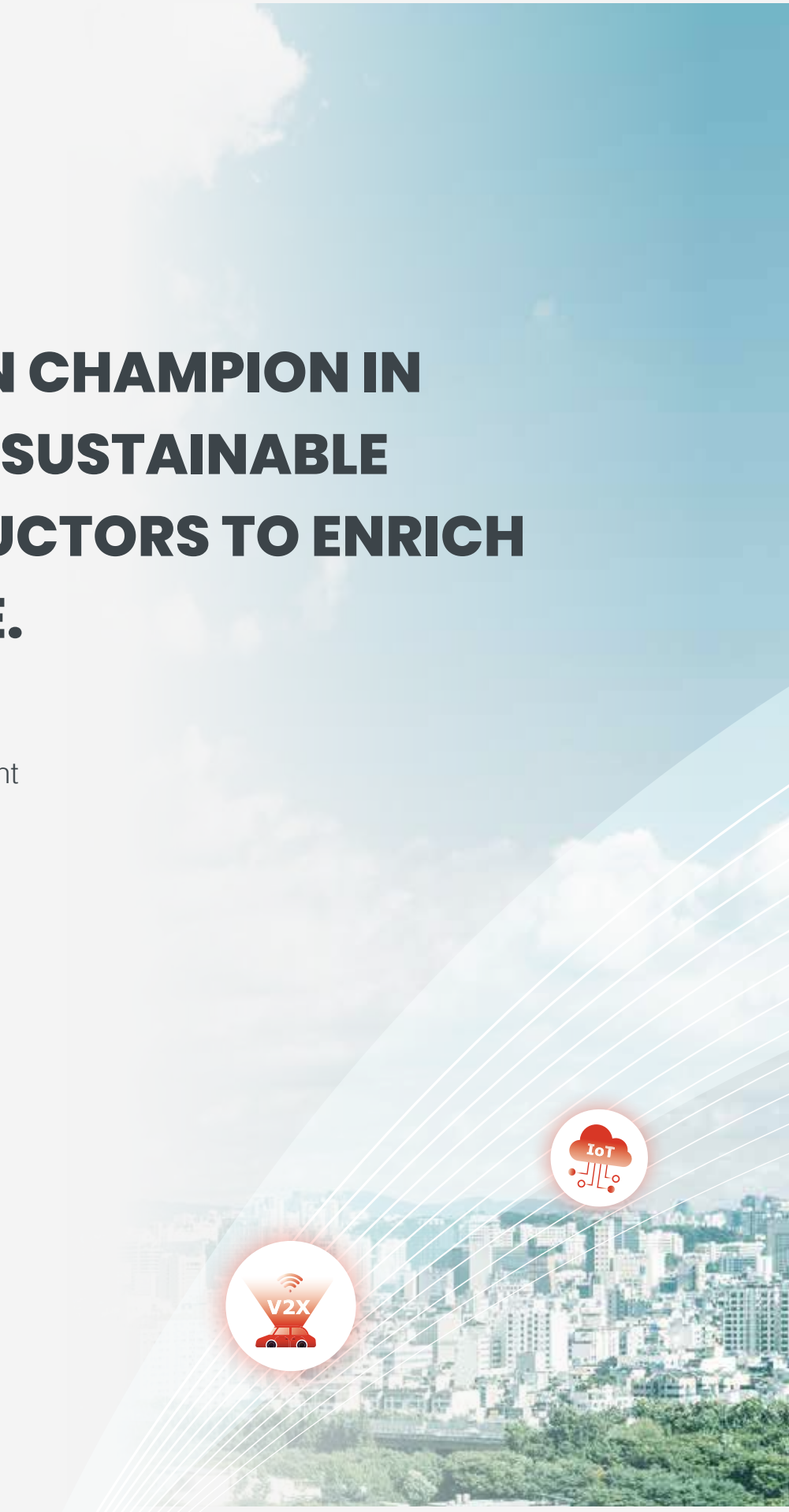
GREEN MEMORY

GREEN FUTURE

winbond

BE A HIDDEN CHAMPION IN PROVIDING SUSTAINABLE SEMICONDUCTORS TO ENRICH HUMAN LIFE.

Winbond Vision Statement




5G
AI
winbond

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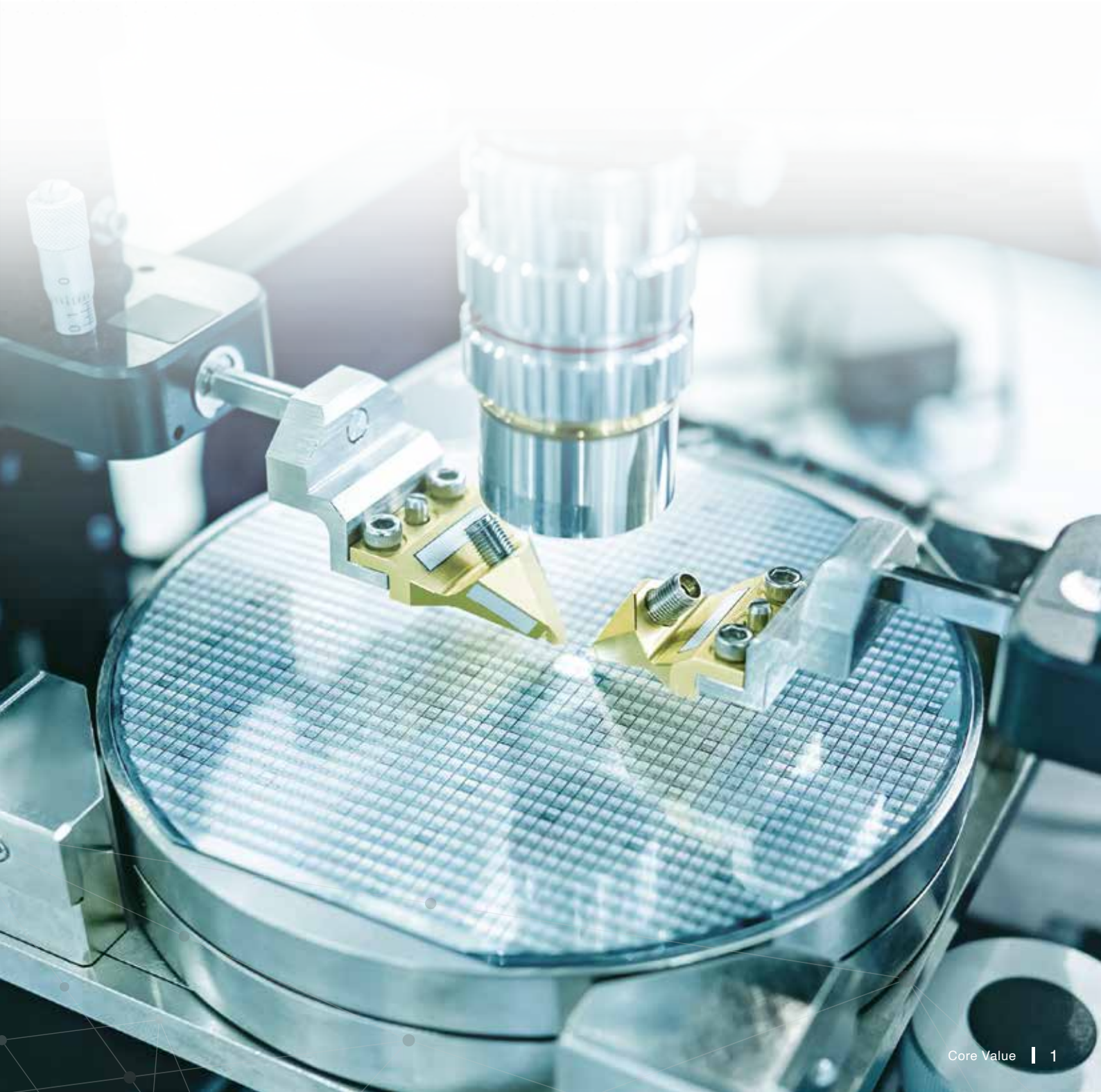


A Trusted Supplier of Advanced Memory Products

From research and development through advanced manufacturing to dedicated customer service, Winbond Electronics Corporation is a total memory solutions provider.

Winbond's customer-focused memory solutions are supported by extensive expertise in:

- Research and development
- Product design
- Wafer fabrication and device packaging, assembly and testing
- Sales and technical support provided directly to the world's largest OEMs

Winbond's product portfolio consists of Specialty DRAM, Mobile DRAM, Code Storage Flash, and TrustME® Secure Flash memories. The company serves customers in communications, consumer electronics, automotive, industrial, computer peripherals, and the IoT, supplying its products directly or via a global network of authorized distributors.

Winbond's headquarters is located in the Central Taiwan Science Park. It operates wafer fabrication plants in Taichung and the new Kaohsiung 12-inch fab in Taiwan. Subsidiaries in the USA, Japan, Israel, China, Hong Kong, and Germany perform marketing operations and provide direct support to customers.

Winbond's combination of advanced semiconductor technologies developed in-house and close relationships with customers support its position as a trusted supplier of advanced memory products.

Winbond's Quality Management Program

In high-technology products, the integrity of the software code and the reliable operation of memory are critical. Therefore, Winbond's Quality Management Program governs every stage of a product's life, from its start in the research and development laboratory to manufacturing and testing.

The program has three key elements:

Quality Control

Meticulously monitors materials and production processes to ensure they satisfy rigorous automotive and industrial standards.

Reliability Assurance

Performs a comprehensive set of accelerated electrical, thermal, cycling, and other tests to verify the reliability of production units.

Failure Analysis

Investigate the causes of product failures and propose corrective actions.

This is why Winbond is relied upon by the world's largest manufacturers to deliver high-quality and highly reliable memory products on schedule.

Independently Verified Quality and Safety Performance

The data that Winbond provides to customers gives direct assurance about the quality and reliability of its products. Comprehensive reliability test reports and quarterly average quality data are published on Winbond's website.

Customers can take assurance from independent verification of the quality and safety of Winbond's products and processes:

Quality

- IATF 16949
- ISO 9001

Safety

- ISO 26262
- ISO 45001

Cyber-Security

- ISO 27001
- ISO 21434

Environment

- ISO 14001
- QC 080000
- ISO 50001
- ISO 14064
- SONY Green Partner
- ISO 46001

Others

- RBA VAP Certificate
- AEC-Q100 Committee Member

IATF 16949 | ISO 9001 | ISO 26262 | ISO 45001 | ISO 27001 | ISO 21434 | RBA VAP

ISO 14001 | QC 080000 | ISO 50001 | ISO 14064 | SONY Green Partner | ISO 46001

Commitment to Longevity Support

Winbond owns its own 12-inch fabs - factories equipped with advanced technology and automation – located in Taichung and Kaohsiung Science Park. We offer a whole series of code storage NOR and NAND Flash memory as well as DRAM. Our technological autonomy and prudent capacity strategies allow us to establish a highly adaptable production system and create synergy among product lines. This enables us to fully commit to stable delivery and provide long-term product support to our customers.

Winbond Product Longevity Program

Winbond offers the Winbond Product Longevity Program (WPLP) to provide long-term support for customers who require stable lifecycle support for their applications. This program is designed to help customers select the most suitable parts for their applications, ensuring that they have access to products with extended availability and visibility. The WPLP offers a minimum 10-year availability for a variety of devices, along with extended timelines for part number changes or discontinuance. Customers can also benefit from roadmap visibility for up to 7 years, allowing them to plan their product lifecycles effectively. Winbond's commitment to form, fit, and function compatibility ensures that customers can seamlessly transition to lower geometry process nodes or alternate manufacturing facilities if required. With the WPLP, Winbond aims to provide uninterrupted support and reliable product availability, enabling customers to manage their applications with confidence.

Long-term Support Crucial for Applications

Winbond’s longevity support benefits various applications and industries that require stable and available memory products over extended periods. Industries such as industrial automation, automotive, aerospace and defense, medical devices, telecommunications, energy and utilities, and transportation rely on memory ICs with long-term support. These applications have long lifecycles and require reliable memory solutions for uninterrupted operation. Winbond’s longevity support ensures consistent performance, availability, and compatibility, enabling these industries to effectively manage their systems and meet their specific requirements.

The WPLP product lists can be found at the link below and will be updated quarterly on the Winbond website.
https://www.winbond.com/hq/application/wplp/

Hidden Champion in Providing Sustainable Semiconductors Products to Enrich Human Life

With our vision to be the hidden champion in providing sustainable semiconductors to enrich human life, we are dedicated to driving sustainable innovation by leveraging the company's core capabilities. Carbon footprint is used as a key measure of innovative value, and our sustainable culture is shaped through collective wisdom, AI, and green technology to drive green product design innovation, green smart manufacturing, and sustainable supply chain strategies. Winbond built a carbon accounting system and implemented data governance by leveraging its core competency and designing green products. We established an ESG performance management system to incentivize and reward team members for sustainable innovation and empower every team member to become a carrier of corporate sustainability.

Commitment to Sustainability and High-quality Product Delivery

Winbond has integrated our core innovative technology competencies with sustainable energy conservation and carbon reduction goals. Through green product design, digitalizing information systems, and improving production efficiency, Winbond can develop and optimize our products in various areas, strictly controlling each step of our product process. Winbond promises to deliver the highest-quality products to customers, minimizing the carbon emissions from product delivery.

Winbond's Renewable Energy Products

Winbond's renewable energy product means the direct electricity used in the manufacturing process of this device comes from renewable energy, including Winbond foundry manufacturing and all the stages at OSAT (Outsourced Semiconductor Assembly and Test). To indicate the part manufactured by renewable energy, the 13th code in the part No. is marked as "G". The part numbers are shown on all labels, including FOSB/AI Bag/box (for KGD wafer), AI Bag/Inner box (for Tray/Tube), Reel/AI Bag/Pizza box (for Tape-and-Reel), and Carton. The Renewable Energy icon is added to all labels, packing list, and invoice.

Renewable Energy Device Naming rule

Take Winbond Serial NOR Flash W25Q12PWBYIHG for example, the 13th code in the part No. is marked as "G".

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th
W	**2**	**5**	**Q**	**1**	**2**	**P**	**W**	**B**	**Y**	**I**	**H**	**G**

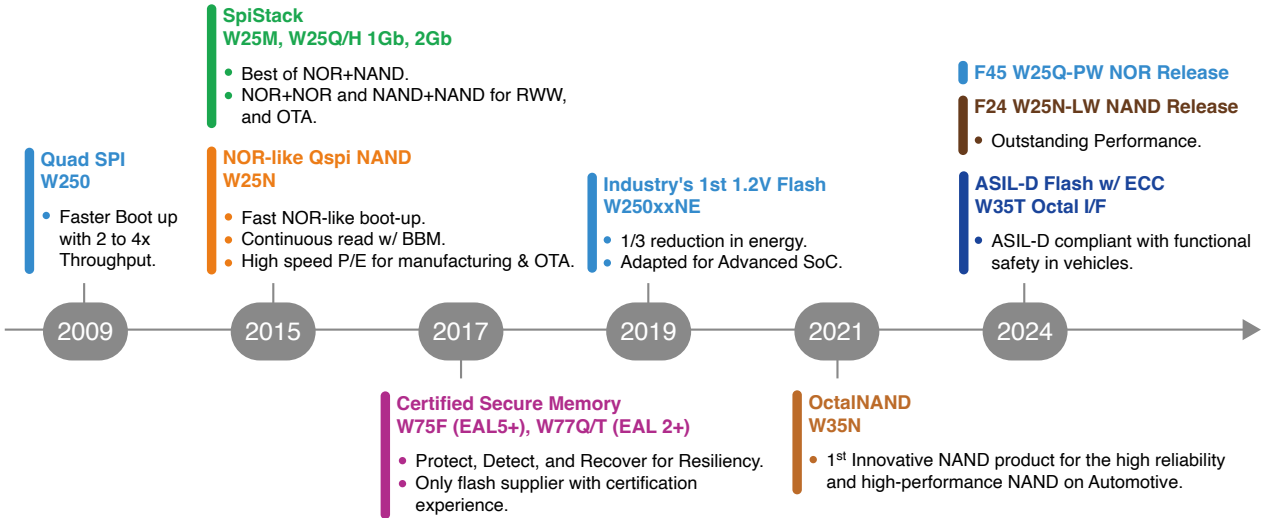
CODE STORAGE FLASH MEMORY

In today's rapidly advancing technology landscape, the demand for efficient, reliable, and compact memory solutions is ever-increasing. Winbond offers a wide range of Flash memories for various applications. Whether it's high-performance computing systems, consumer devices, mobile communications, automotive electronics, and emerging markets such as industrial control, AI server, and IoT, Winbond's Flash memories are designed to deliver the best-suit solutions.

Advanced Flash Memories Play a Pivotal Role across Industries

Winbond's comprehensive Flash memories allow customers to choose the product that best meets their needs and preferences for their applications. Our portfolio of Flash memories, including Serial NOR, 1.2V Serial NOR, Octal NOR, OctalNAND, QspiNAND, and SLC NAND, offers features such as high-speed access, low power consumption, and small form factors which enable designers and engineers to have precise tools they require to optimize their projects.

Winbond's innovations, which focus on high performance, energy efficiency, and flexible design solutions, make it a leader in the flash memory industry.



Quad SPI Flash:

- Serial NOR Flash with Quad SPI: Provides high eXecute-in-Place (XiP) performance, command, address and data all operate using Quad IO at clock rates up to 133MHz achieving a transfer rate of 66MB/s.
- QspiNAND Flash: Offers smaller package sizes and provides faster program and erase times, making it a highly competitive and cost-effective choice for reliable memory solutions.

High-speed Octal Flash:

- OctalNAND Flash: Delivers continuous read speeds of up to 240 MB/s making it ideal for applications requiring rapid data access and substantial storage.
- Octal NOR Flash: Achieves speeds of up to 400 MB/s, making it suitable for quick data retrieval.

Low-voltage 1.2V SPI NOR Flash:

- Winbond was the first manufacturer to introduce a comprehensive range of 1.2V SPI NOR Flash solutions, the industry's lowest-voltage standard. This low-voltage technology is perfect for enhancing power efficiency for mobile devices, wearables, IoT, and battery-powered applications.
- Features like deep power-down mode and signal indicators further optimize power consumption and battery life.

SpiStack® Technology:

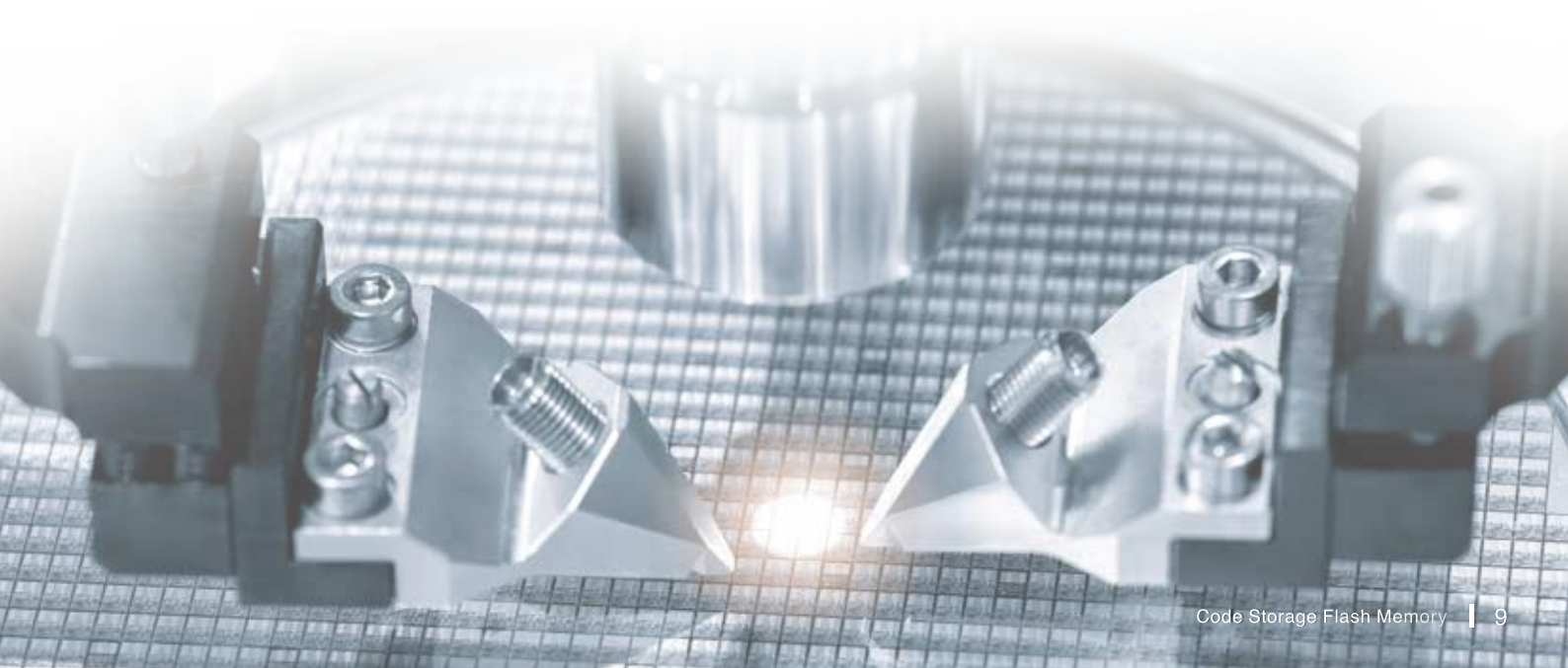
- Winbond's SpiStack® technology enables the integration of both NOR and NAND Flash within a single, compact package. This approach offers flexibility and space savings without compromising performance, accommodating a variety of design needs.

Advanced Packaging and Customization:

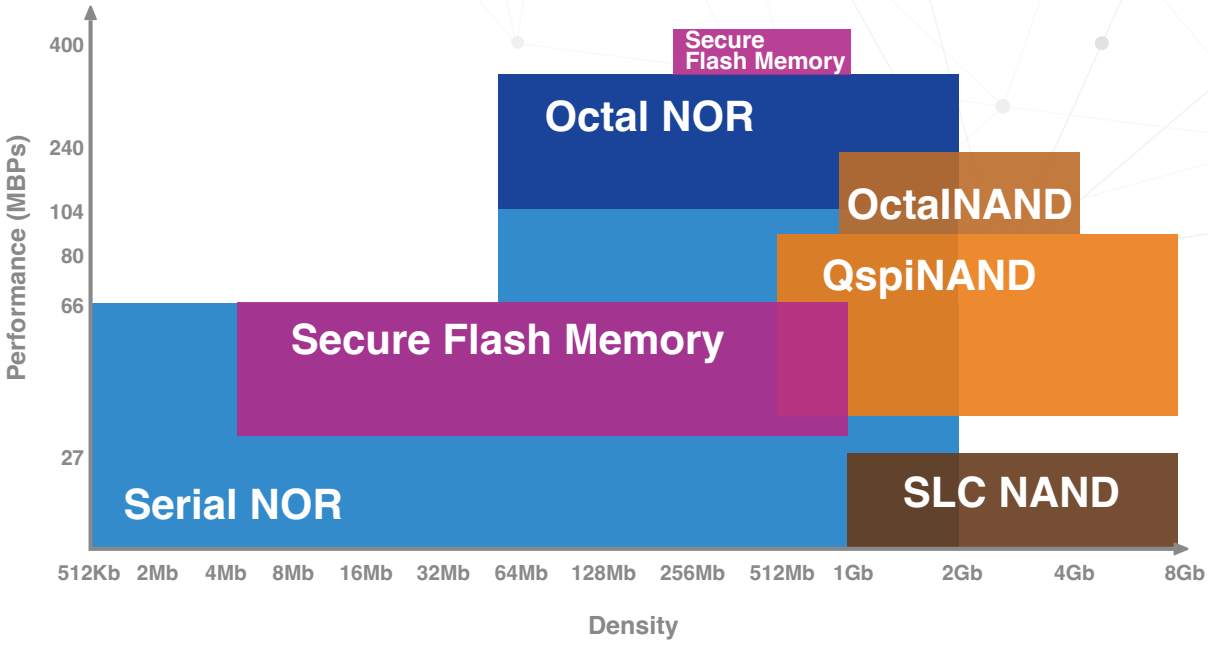
- Winbond provides diverse packaging options, such as WLCSP (Wafer-Level Chip Scale Package), KGD (Known Good Die), and tailored products. These options allow designers to choose the best fit for their specific applications.

Guaranteed Quality and Performance:

- Backed by Winbond's Quality Management Program, our Flash memory portfolio includes products qualified by the AEC-Q100 automotive standard for Grade 1 operation at temperatures up to 125°C. Built-in ECC protects the integrity of data stored.

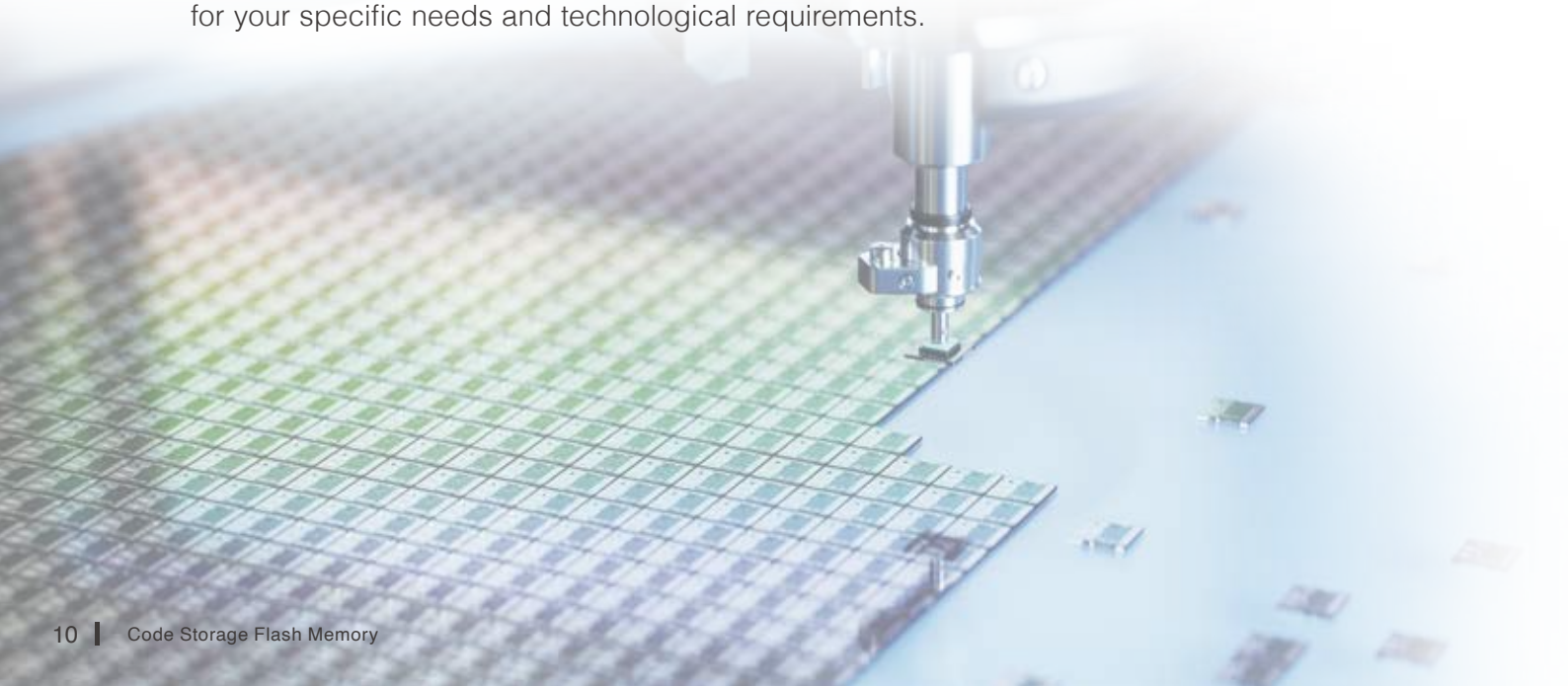


Broad Portfolio of Code Storage Products



Winbond Flash memories, enabling the storage of code and data in the rapidly evolving markets, serve as the backbone for the technology that powers the world's fastest-growing industries, facilitating seamless connectivity, advanced computing capabilities, automotive innovation, and the expansion of IoT ecosystems.

The table below provides a comprehensive overview of Winbond's extensive Flash memory series, highlighting key specifications and features. This detailed comparison will assist in selecting the most suitable memory solution for various applications, ensuring optimal performance and reliability. Explore the range of offerings available to find the ideal match for your specific needs and technological requirements.



Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Industrial	Serial NOR Flash	W25Q-JV	3V	• Deep power-down mode for low power consumption • Code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP)	IoT, Smart City, Health Care, and Smart Home
		W25Q-RV		• 133MHz STR and 84MHz Normal Read for fast boot • 105°C operating temperature	Industrial IoT, Image Processor, and PC Peripheral
		W25Q-RL	2.5V	• Operate with 2.5V range with all RV series features	HDD, Remote Controller, and Wearable Devices
		W25Q-NW	1.8V	• Deep power-down mode for low power consumption • 166MHz STR for instant boot	Laptops, BMC, and Human-Machine Interface (HMI)
		W25Q-JW		• Deep power-down mode for low power consumption • 66MHz DTR and QPI mode for XIP	True Wireless Stereo (TWS) and Machine-to-Machine (M2M) modules
		W25Q-EW		• Deep power-down mode for low power consumption • QPI mode in low density for XIP	GPS and AMOLED
		W25Q-PW		• BUSY function • Built-in ECC • Dual/quad SPI with 166MHz STR & 80MHz DTR • Die shrink for KGD segment • Deep power-down mode for low power consumption	Wearable, True Wireless Stereo (TWS), Networking, AMOLED, and Gaming controller
		W25Q-PY		• 1.2V I/O • BUSY function • Built-in ECC • Die shrink for KGD segment • Deep power-down mode for low power consumption	Wearable, True Wireless Stereo (TWS), Networking, AMOLED, and Gaming Controller
	1.2V Serial NOR Flash	W25Q-NE	1.2V	• 1.2V Vcc • BUSY function • One Time Programmable (OTP) • 42 MB/s transfer rate	AI Server, Notebook, Desktop Computer, OLED, GPU Accelerator, and Smartphone
	RPMC	W25R	1.8V / 3V	• Support RPMC • Operate with all W25M-JV/JW series features	PC, Emerging IoT Demanding Multi-layered Authenticity, and Home Automation

Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Industrial	Octal NOR Flash	W25Q-JV	1.8V	• 1.8V Vcc • BUSY function • Built-in ECC • One Time Programmable (OTP) • JEDEC xSPI interface	Data Center & Cloud Service, AI Accelerator, AI Server, Field Programmable Gate Array (FPGA), Wearable, Human Machine Interface (HMI), Instant Boot Camera Applications, IoT, Smart Lock, and Robot
	QspiNAND Flash	W25N-GV	3V	• Built-in ECC • Buffer read and Continuous read modes • One Time Programmable page (OTP) • Bad Block Management Lookup Table (BBM LUT)	Video Event Data Recorder (VEDR), Surveillance, Networking, xDSL, Gigabit Passive Optical Network (GPON), Set Top Box (STB), Smart Home, Wearable, and Home Entertainment Applications
		W25N-KV		• Built-in ECC • Deep power-down mode for low power consumption • One Time Programmable page (OTP) • Space-efficient packaging"	Gigabit Passive Optical Network (GPON), IP Camera, xDSL, and Surveillance
		W25N-JW	1.8V	• Built-in ECC • DTR 83MHz • Buffer read and Continuous read modes • One Time Programmable page (OTP) • Bad Block Management Lookup Table (BBM LUT)"	Fast booting, OTA, Smart Doorbell, and Wearable
		W25N-GW		• Operate with 1.8V range with all W25N-GV series features	Video Event Data Recorder (VEDR), Car Camera, Car Gateway, Surveillance and Automation, xDSL, GPON and Set top box (STB), Smart Home, Wearable, and Home Entertainment Applications
		W25N-KW		• Operate with 1.8V range with all W25N-KV series features	Gigabit Passive Optical Network (GPON), IP camera, xDSL, and Surveillance
		W25N-LW		• Built-in ECC • Buffer read, Continuous read, and Sequential read modes • One Time Programmable page (OTP) • Bad Block Management Lookup Table (BBM LUT) • Die shrink for KGD segment"	Machine-to-Machine (M2M), Automation, Surveillance, Gigabit Passive Optical Network (GPON), xDSL, and Smart Home

Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Industrial	OctalNAND Flash	W35N-JW	1.8V	• Built-in ECC • Octal SPI with 166MHz SDR & 120MHz DDR • A maximum Continuous read throughput of 240MB/s • Bad Block Management Lookup Table (BBM LUT)	Fast booting and OTA, Smart Doorbell
	SLC NAND Flash	W29N-GV	3V	• Fully ONFI 1.0 Compliant • 1bit/4bit ECC required • Page size 2048+64 byte • Longevity support	Automation, Point of Sale (POS), Switch, Consumer and Networking Applications, Gigabit Passive Optical Network (GPON), xDSL, Smart Home, Set Top Box (STB) and Surveillance
		W29N-HV		• Fully ONFI 1.0 Compliant • 1bit/4bit ECC required • Page size 2048+64 byte • Longevity support	Optical Network (GPON), XDSL, Multi-Function Printer, Surveillance, Instrument, Smart Energy, and Smart Home
		W29N-KV		• Fully ONFI 1.0 Compliant • 1bit/4bit ECC required • Page size 2048+128 byte	Point of Sale (POS), Wearable, Gigabit Passive Optical Network (GPON), xDSL, Set Top Box (STB), and Surveillance
		W29N-GZ	1.8V	• Operate with 1.8V range with all GV series features	Infotainment, Cluster, Video Event Data Recorder (VEDR), Vehicle to Everything (V2X), Automation, Point of Sale (POS), Wearable, Gigabit Passive Optical Network (GPON), xDSL, Smart-Home, Set Top Box (STB) and Surveillance
		W29N-HZ		• Operate with 1.8V range with all HV series features	Smart Speaker, MCP (ONFI NAND + LPDDR4x by 4+4/8+8 configurations) targets on M2M, 5G CPE, and FWA
		W29N-LZ		• Fully ONFI 1.0 Compliant • Supports 8bit ECC • Page size 4096+256 byte	Machine-to-Machine (M2M), Automation, Surveillance, Gigabit Passive Optical Network (GPON), xDSL, and Smart Home

Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Industrial	SpiStack® Flash	W25M-AV	3V	• SPI NOR + SPI NAND • Software type chip select • Continuous read mode in QspiNAND • Bad Block Management Lookup Table(BBM LUT) • NAND Page size 2048+64 byte	Smart Home, Musical Instruments, Game, Human Machine Interface (HMI), Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, and Cluster
		W25M-GV		• SPI NAND + SPI NAND • Built-in ECC • Continuous read mode in QspiNAND • Bad Block Management Lookup Table(BBM LUT) • NAND Page size 2048+64 byte	Smart Home, Musical instruments, Game, HMI, Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, Cluster, and Automotive
		W25M-JV		• SPI NOR + SPI NOR • Continuous read mod • Bad Block Management Lookup Table(BBM LUT)	Musical instruments, Point of Sale (POS), Handheld, Surveillance and Car-ETC
		W25M-AW	1.8V	• Operate with 1.8V range with all W25M-AV series features	Smart Home, Musical instruments, Game, HMI, Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, and Cluster
		W25M-JW		• Operate with 1.8V range with all W25M-JV series features	Musical Instruments, Point of Sale (POS), Handheld, and Surveillance
	NAND Based MCP	W71N	1.8V	• ONFI NAND + LPDDR4x • Space-efficient packaging	Machine-to-Machine (M2M), Customer Premise Equipment (CPE), and Fixed Wireless Access (FWA)

Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Automotive	NOR	W25H-JV	3V	• 125°C operating temperature • AEC-Q100	Domain, Zonal, Cluster, and Automotive
		W25Q-JV		• 125°C operating temperature • AEC-Q100	Domain, Zonal, Cluster, and Automotive
		W25Q-RV		• 125°C operating temperature • AEC-Q100 • Offer 133MHz STR and 84MHz DTR	Automotive
		W25Q-JW	1.8V	• 66MHz DTR and QPI mode for XIP • Operate with 1.8V range with all JV series features	Domain, Zonal, Cluster, and Automotive
		W25Q-EW		• 125°C operating temperature • AEC-Q100 • QPI mode in low density for XIP	Domain, Zonal, Cluster, and Automotive
		W25H-NW		• 125°C operating temperature • AEC-Q100 • 166MHz STR for instant boot	Domain, Zonal, Cluster, and Automotive
		W74M	1.8V / 3V	• Support RPMC • Operate with all W25M-JV/JW series features • AEC-Q100	Automotive
		W35T-NW	1.8V	• Octal NOR (JEDEC xSPI interface) • BUSY function • Built-in ECC • ISO26262 ASIL-D compliant for automotive	Instrument Cluster, Advanced Driver Assistance Systems (ADAS) & Driver Monitoring Systems (DMS), Gateway & Domain Controller, eCockpit, Infotainment, and Car Camera
	NAND	W25N-GV	3V	• Built-in ECC • Buffer read and Continuous read modes • Bad Block Management Lookup Table (BBM LUT) • Automotive Grade 2+ (115°C) • AEC-Q100	Video Event Data Recorder (VEDR), Car Camera, Car gateway, Surveillance, and Automation
		W29N-GV		• 105°C operating temperature • 1bit/4bit ECC required • Automotive Grade 2+ (115°C) • AEC-Q100	Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), and Vehicle-to-Everything (V2X)
		W29N-HV		• 105°C operating temperature • 1bit/4bit ECC required • Automotive Grade 2+ (115°C) • AEC-Q100	Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), and Vehicle-to-Everything (V2X)

Broad Portfolio of Code Storage Products

Type	Category	Series	Voltage	Features	Applications
Automotive	NAND	W25N-JW	1.8V	• Built-in ECC • Data transfer rate of 83MB/s • Buffer read and Continuous read modes • Bad Block Management Lookup Table (BBM LUT) • Automotive Grade 2+ (115°C) • AEC-Q100	Advanced Driver Assistance Systems (ADAS), Instrument Cluster Applications, Center Information Display (CID), Vehicle-to-Everything (V2X), and Fast booting
		W29N-GZ		• Operate with 1.8V range with all W29N-GV eries features	Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), and Vehicle-to-Everything (V2X)
		W29N-HZ		• Operate with 1.8V range with all W29N-HV eries features	Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), and Vehicle-to-Everything (V2X)
		W35N-JW		• Octal SPI with 166MHz SDR & 120MHz DDR • Built-in ECC • A maximum Continuous read throughput of 240MB/s • Bad Block Management Lookup Table (BBM LUT) • Automotive Grade 2+ (115°C) • AEC-Q100	Instrument Cluster Applications, Fast Firmware Update Over the Air (OTA), and Advanced Driver Assistance Systems (ADAS)
TrustME® Secure Flash		W77Q-JV W77Q-JW	1.8V / 3V	• STR 133MHz/DTR 66MHz • Automotive Grade 2 • ASIL-B/C compliant • Common Criteria EAL2	Industrial, Networking, and Server
		W77T W77Q-NW	1.8V	• Built-in ECC • DTR/STR 200MHz • ASIL-D ready (W77T) • AEC-Q100 Grade 2 • ISO 21434 compliant • Common Criteria EAL2 • PQC support • JEDEC JESD255 SPI CRC (W77T)	Automotive, High-performance IoT, Infrastructure, and Advanced server
		W75F		• 1.8V Vcc • ASIL-D certified • AEC-Q100 Grade 2 • Common Criteria EAL 5	Mobile Payment, Electronic Wallet, and High-Security Infrastructure

The tables below list the suggested series that are ideal for the highlighted applications.

5G and Wi-Fi

Advanced wireless communication technologies, such as 5G and Wi-Fi 7 applications, require both high-quality and high-density Flash memories. Winbond provides high-reliability Serial NOR Flash in densities up to 2Gb, supporting Execute-in-Place (XiP) mode to boot directly to a SoC or FPGA. QspiNAND Flash memories offer a cost-effective alternative to SPI NOR Flash in densities ranging from 512 Mb to 8Gb. A maximum Continuous Read speed of 83MB/s supports the high bandwidth/low latency requirements of 5G networking and Wi-Fi 7 applications.

Type	Series	Key Features	Special Highlights	Density
NOR	W25Q-NW	• XIP • OTP • Quad SPI • 166MHz (for 512M) • QPI • DTR	• 1.8V • Built-in ECC	512Mb-2Gb
	W25Q-JW	• XIP • OTP • Quad SPI • 133MHz • QPI • DTR	• 1.8V	16Mb-256Mb
	W25Q-JV		• 3V • Built-in ECC (512Mb-2Gb)	16Mb-2Gb
	W25Q-RV	• 105°C • XIP • OTP • Quad SPI • 133MHz • QPI • DTR	• 3V • Built-in ECC (64Mb-2GB) • RL series available (2.3V, 1Mb-32Mb)	2Mb-2Gb
NAND	W25N-GV	• OTP page • 104MHz Quad SPI • 85°C /105°C • 100K P/E Cycle • Bad Block Management Lookup Table (BBM LUT)	• 3V • Built-in 1bit ECC • Continuous Read (52MB/s) • Concurrent operation (W25M02GV)	512Mb-2Gb
	W25N-KV		• 3V • Built-in 8bit ECC (2Gb, 4Gb) • Built-in 4bit ECC (1Gb) • Sequential Read (52MB/s) • Small packing form (1Gb)	1Gb-4Gb
	W25N-KW	• OTP page • 104MHz Quad SPI • 85°C /105°C • 100K P/E Cycle	• 1.8V • Built-in 8bit ECC (2Gb, 4Gb) • Built-in 4bit ECC (1Gb) • Continuous Read (1Gb, 52MB/s) • Sequential Read (52MB/s) • Small packing form (1Gb)	1Gb-4Gb
	W25N-LW	• OTP page • 104MHz Dual/Quad SPI • 85°C /105°C • Bad Block Management Lookup Table (BBM LUT)	• 1.8V • Built-in 8-Bit ECC • Continuous/Sequential Read (52MB/s)	4Gb-8Gb
MCP	W71N	• Mainstream package type • 85°C • ECC required for ONFI	• Save PCB area. • Data bus ONFI x8, LPDDR2 x32 • Data bus ONFI x8, LPDDR4x x16	ONFI+LPDDR2 1Gb+512Mb 1Gb+1Gb ONFI+LPDDR4x 4Gb+4Gb 8Gb+8Gb

High-performance Computing

In high-performance computing (HPC) applications, the System on Chip (SoC) has been upgraded to a more advanced tech node, and the upgrade requires high-quality and high-reliability Flash to facilitate fast data access in a high-temperature environment. Winbond's Serial NOR Flash and NAND Flash memories are well-suited for HPC applications that require large datasets and also have space constraints.

Type	Series	Key Features	Special Highlights	Density
NOR	W25Q-RV	• 105°C • XIP • OTP • Quad SPI • 133MHz • QPI • DTR	• 3V • Built-in ECC (64Mb-2GB) • RL series available (2.3V, 1Mb-32Mb)	2Mb-2Gb
	W25R-NW	• 105°C • OTP • 133MHz • RPMC	• Security • Different resistance	512Mb-1Gb
	W25R-JW		• Security • Different resistance	64Mb-256Mb
	W25R-JV		• Security • Different resistance	64Mb-1Gb
	W35T-NW	• Octal SPI • DTR • 200MHz	• Built-in ECC • 1.2V I/O/BUSY (64Mb-256Mb)	64Mb-2Gb
NAND	W25N-JW	• OTP page • 166MHz SDR • Built-in 1bit ECC • 85°C /105°C /115°C • 100K P/E Cycle • Continuous Read • Bad Block Management Lookup Table (BBM LUT)	• 1.8V • 80MHz DTR (80MB/s) • Quad SPI • Package type TFBGA24 and WSON8	1Gb-2Gb
	W35N-JW		• 1.8V • 120MHz DTR (240MB/s) • Octal 8 data I/O • Package type TFBGA24	1Gb-4Gb
	W25N-LW	• OTP page • 104MHz Dual/Quad SPI • Built-in 8bit ECC • 85°C /105°C /125°C • Bad Block Management Lookup Table (BBM LUT)	• 1.8V • Continuous/Sequential Read (52MB/s)	2Gb-8Gb

Automotive

Winbond offers outstanding Flash memories specifically designed for the automotive industry. The automotive-grade SPI NOR and QspiNAND Flash with built-in ECC deliver ultra-high reliability. Octal NOR and OctalNAND Flash offer high Read speeds that deliver fast boot time in applications such as driver assistance, instrument cluster, and infotainment systems. Octal NOR Flash provides XIP capabilities and OctalNAND Flash offers Fast Write capability to support reliable over-the-air software updating.

Type	Series	Key Features	Special Highlights	Density
NOR	W25Q-CV	• Quad SPI • 104MHz	• 3V • AG1/AG2	1Mb-4Mb
	W25Q-DV		• 3V • AG1/AG2	8Mb
	W25Q-EW		• 1.8V • AG1/AG2	2Mb-8Mb
	W25Q-JV	• XIP • OTP • Quad SPI • 133MHz	• 3V • Built-in ECC (512Mb-2Gb) • /INT and /RSTO for safety • AG1/AG2	16Mb-2Gb
	W25Q-JW	• QPI • DTR	• 1.8V • AG1/AG2	16Mb-256Mb
	W25Q-RV	• 105°C • XIP • OTP • Quad SPI • 133MHz • QPI • DTR	• 3V • Provide RL (2.3V, 2Mb-32Mb) • Support /Busy • AG1/AG2	2Mb-2Gb
	W25Q-NW	• XIP • OTP • Quad SPI • 166MHz (for 512Mb) • QPI • DTR	• 1.8V • Built-in ECC • /INT and /RSTO for safety • AG1/AG2	512Mb-2Gb
	W35T-NW	• Octal SPI • DTR • 200MHz	• 1.8V • Built-in ECC • /BUSY (64Mb - 256Mb) • AG1/AG2	64Mb-2Gb
NAND	W25N-GV	• OTP page • 104MHz Quad SPI • 105°C /115°C • AG2 10K P/E Cycle	• 3V • Built-in 1bit ECC • Continuous Read (52MB/s) • Bad Block Management Lookup Table (BBM LUT) Concurrent operation (W25M02GV)	512Mb-2Gb
	W29N-GV	• 105°C /115°C • AG2 10K P/E cycles	• 3V • 4bit ECC required • Copy back • Random cache read	2Gb-8Gb
	W29N-HV	• 105°C /115°C • AG2 10K P/E cycles	• 3V • 4bit ECC required • Copy back • Small packing form VFBGA48	1Gb
	W25N-JW	• OTP page • 166MHz SDR • Built-in 1bit ECC • 105°C /115°C	• 1.8V • 80MHz DTR (80MB/s) • Quad SPI • Package type • TFBGA24 and WSON8	1Gb-2Gb
	W35N-JW	• AG2 10K P/E Cycle • Continuous Read • Bad Block Management Lookup Table (BBM LUT)	• 1.8V • 120MHz DTR (240MB/s) • Octal 8 data I/O • Package type TFBGA24	1Gb-4Gb

AIoT and Industrial IoT End Points

Winbond provides low-power Serial NOR Flash with rich new functions such as 1.2V I/O and a BUSY output. This uses Winbond's latest 45 nm process to achieve a small form factor, which is a benefit to space-constrained and battery-based IoT applications. Winbond's NAND Flash memories can operate at -40°C to 105°C and provide built-in ECC and bad block management lookup table, making it suitable for deployment in industrial-grade IoT applications.

Type	Series	Key Features	Special Highlights	Density
NOR	W25Q-NE	• XIP • OTP • Quad SPI • 133MHz • QPI	• 1.2V Vcc • 84MHz (64Mb), 104MHz (128Mb)	2Mb-2Gb
	W25Q-JW	• XIP • OTP • Quad SPI • 133MHz • QPI • DTR	• 1.8V	16Mb-256Mb
	W25Q-NW	• XIP • OTP • Quad SPI • 166MHz (for 512M) • QPI • DTR	• 1.8V • Built-in ECC	512Mb-2Gb
	W25Q-PW	• OTP • 166MHz • Deep power-down mode	• 1.8V • Built-in ECC (64Mb-256Mb) • Support /Busy	64Mb-1Gb
NAND	W25N-GV	• OTP • 104MHz Quad SPI • 85°C /105°C • 100K P/E Cycle	• 3V • Built-in 1bit ECC • Continuous Read (52MB/s) • Bad Block Management Lookup Table (BBM LUT) Concurrent operation (W25M02GV)	512Mb-2Gb
	W25N-KV	• OTP page • 104MHz Quad SPI • 100K P/E Cycle	• 3V • Built-in 8bit ECC (2Gb, 4Gb) • Built-in 4bit ECC (1Gb) • Sequential Read (52MB/s) • Small packing form (1Gb)	1Gb-4Gb
	W25N-KW	• OTP page • 104MHz Quad SPI • 100K P/E Cycle	• 1.8V • Built-in 8bit ECC (2Gb, 4Gb) • Built-in 4bit ECC (1Gb) • Continuous Read (1Gb, (52MB/s)) • Sequential Read (52MB/s) • Small packing form (1Gb)	1Gb-4Gb
	W25N-LW	• OTP page • 104MHz Dual/Quad SPI • 85°C /105°C	• 1.8V • Built-in 8bit ECC • Bad Block Management Lookup Table (BBM LUT)	2Gb-8Gb
	W25N-GW	• OTP page • 104MHz Quad SPI • 85°C /105°C • 100K P/E Cycle	• 1.8V • Built-in 1bit ECC • Continuous Read (52MB/s) • Bad Block Management Lookup Table (BBM LUT) Concurrent operation (W25M02GV)	512Mb-1Gb

Code Storage Flash Memory Product Brief

	Product	Serial NOR	1.2V Serial NOR	Octal NOR	QspiNAND	OctalNAND	SLC NAND	Authentication
Density	1Mb	√						
	2Mb	√						
	4Mb	√						
	8Mb	√	√					
	16Mb	√	√					
	32Mb	√	√					√
	64Mb	√	√	√				√
	128Mb	√	√	√				√
	256Mb	√	√	√				√
	512Mb	√	√	√	√			√
	1Gb	√	√	√	√	√	√	
	2Gb	√	√	√	√	√	√	
	4Gb				√	√	√	
	8Gb				√		√	
Voltage	1.2V		√					
	1.8V	√		√	√	√	√	√
	3V	√			√		√	√
Data Width	X1	√	√	√	√	√		√
	X2	√	√		√			√
	X4	√	√		√			√
	X8			√		√	√	
	X16						√	

Serial NOR Flash

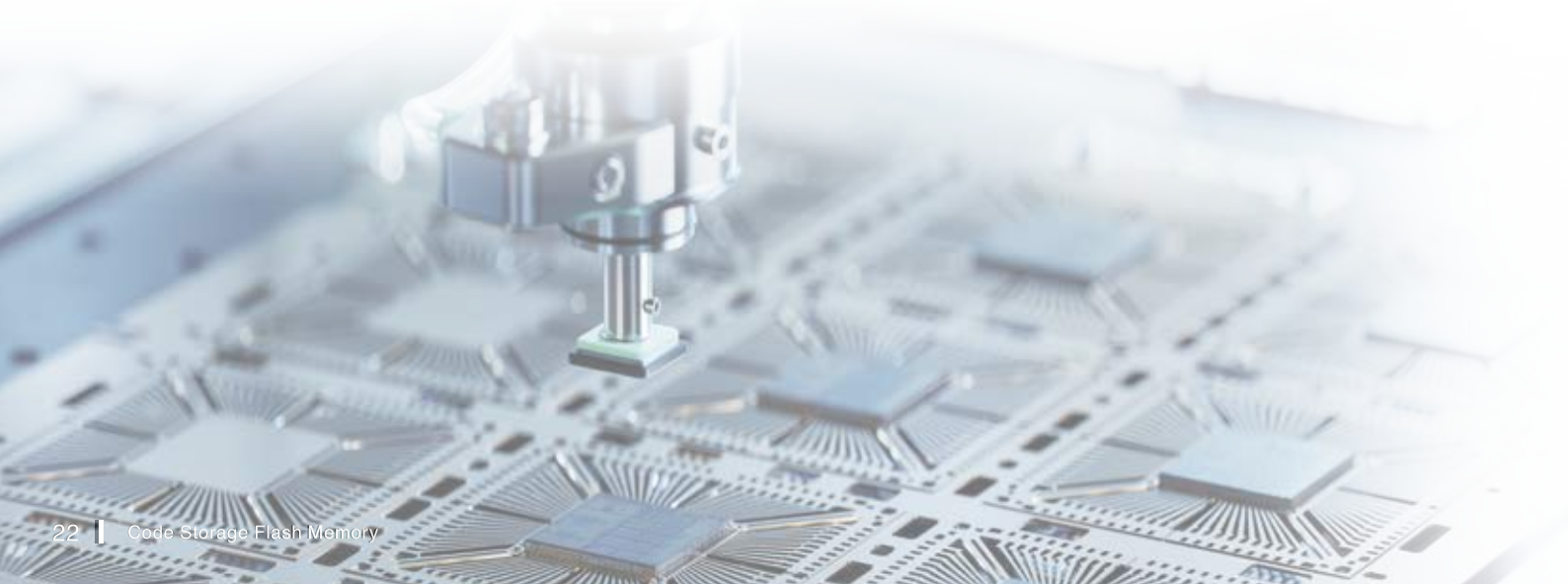
SpiFlash® Memories with SPI, Dual-SPI, Quad-SPI and QPI

Winbond's W25Q SpiFlash® Multi-I/O memories utilize the popular Serial Peripheral Interface (SPI) and are available in densities ranging from 1Mb to 2Gb. They have small erasable sectors and offer industry-leading performance. The W25Q family with Dual-I/O and Quad-I/O SPI can deliver even higher eXecute-in-Place (XiP) performance, especially when used in the Quad Peripheral Interface (QPI) mode where command, address, and data all operate using Quad IO at clock rates up to 166MHz achieving a transfer rate of 66M-Byte/s. Faster transfer rates improve boot time and support faster shadowing of code to RAM. New ultra-small form-factor packages are also ideal for space-constrained mobile and handheld applications.

Application

- Desktop PC, Notebook, PC peripheral memory, Server, Hard disk drive, Printer
- Bluetooth, True wireless stereo, Smart home, Musical Instrument
- 5G, WiFi, XDSL, Surveillance camera, Gigabit passive optical network, Switch
- Advanced driving assistance systems, Vehicle-to-Everything, Car-AV, Domain controller, Infotainment, Cluster

	Industrial	Industrial Plus	Automotive Grade 2	Automotive Grade 1
Temperature Range	-40°C~85°C	-40°C~105°C	-40°C~105°C	-40°C~125°C
Part # Example	W25Q64JVSSIQ	W25Q64JVSSJQ	W25Q64JVSSAQ	W25Q64JVSSSQ
AEC-Q100 Compliant	No	No	Yes	Yes
Change Control (PPAP)	No	No	Available	Available



W25Q-JV Series

It provides a storage solution for systems with limited space, pins, and power, offering exceptional flexibility and performance and ensuring reliable quality. It is ideal for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP) and storing voice, text, and data. The device operates on a single 3.0V power supply with current consumption as low as 1μA for power-down.

Key Feature:

- 105°C operating temperature
- Deep power-down mode for low power consumption

Key Application:

IoT, Smart city, Health care, Smart home, and Automotive.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q02JVTBIM	2 Gb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVSFIQ	1 Gb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01JVZEIQ	1 Gb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVTBIQ	1 Gb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVSFIM	1 Gb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01JVZEIM	1 Gb	133	66	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVTBIM	1 Gb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVSFJQ	1 Gb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01JVZEJQ	1 Gb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01JVTBJQ	1 Gb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512JVFIQ	512 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q512JVEIQ	512 Mb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512JVBIQ	512 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512JVFIN	512 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q512JVEIN	512 Mb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q512JVFIM	512 Mb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q512JVEIM	512 Mb	133	66	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512JVBIM	512 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512JVFJQ	512 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q512JVEJQ	512 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25Q-JV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q512JVBJQ	512 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFIQ	256 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEIQ	256 Mb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBIQ	256 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCIQ	256 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFIN	256 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q256JVEIN	256 Mb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q256JVFIM	256 Mb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEIM	256 Mb	133	66	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBIM	256 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCIM	256 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q257JVFIQ	256 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	4-Byte Address Mode Default
W25Q257JVEIQ	256 Mb	133	-	2.7	3.6	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	4-Byte Address Mode Default
W25Q256JVFJQ	256 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEJQ	256 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBJQ	256 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCJQ	256 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFJM	256 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEJM	256 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBJM	256 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCJM	256 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSIQ	128 Mb	133	-	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFIQ	128 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPIQ	128 Mb	133	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEIQ	128 Mb	133	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBIQ	128 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCIQ	128 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVYIQ	128 Mb	133	-	2.7	3.6	-40	85	WLCSP-24	-	SPI/Dual/Quad	-	B	P	-
W25Q128JVSIN	128 Mb	133	-	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JVFIN	128 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JVPIN	128 Mb	133	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JVEIN	128 Mb	133	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JVSIM	128 Mb	133	66	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q128JVFIM	128 Mb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPIM	128 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEIM	128 Mb	133	66	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBIM	128 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCIM	128 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSJQ	128 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFJQ	128 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPJQ	128 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEJQ	128 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBJQ	128 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCJQ	128 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSJM	128 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFJM	128 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPJM	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEJM	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBJM	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSIQ	64 Mb	133	-	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFIQ	64 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPIQ	64 Mb	133	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZEIQ	64 Mb	133	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGIQ	64 Mb	133	-	2.7	3.6	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTBIQ	64 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTCIQ	64 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVBYIQ	64 Mb	133	-	2.7	3.6	-40	85	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSIM	64 Mb	133	66	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFIM	64 Mb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPIM	64 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZEIM	64 Mb	133	66	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGIM	64 Mb	133	66	2.7	3.6	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTBIM	64 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSJQ	64 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFJQ	64 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPJQ	64 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q64JVZEJQ	64 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGJQ	64 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTBJQ	64 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTCJQ	64 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSJM	64 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFJM	64 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPJM	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZEJM	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGJM	64 Mb	133	66	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNIQ	32 Mb	133	-	2.7	3.6	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSIQ	32 Mb	133	-	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFIQ	32 Mb	133	-	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPIQ	32 Mb	133	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVZEIQ	32 Mb	133	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUIQ	32 Mb	133	-	2.7	3.6	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGIQ	32 Mb	133	-	2.7	3.6	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBIQ	32 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTCIQ	32 Mb	133	-	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNIM	32 Mb	133	66	2.7	3.6	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSIM	32 Mb	133	66	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFIM	32 Mb	133	66	2.7	3.6	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPIM	32 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUIM	32 Mb	133	66	2.7	3.6	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGIM	32 Mb	133	66	2.7	3.6	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBIM	32 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNJQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSJQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFJQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPJQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVZEJQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUJQ	32 Mb	133	-	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGJQ	32 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBJQ	32 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q32JVTCJQ	32 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNJM	32 Mb	133	66	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSJM	32 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFJM	32 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPJM	32 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUJM	32 Mb	133	66	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGJM	32 Mb	133	66	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBJM	32 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTCJM	32 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNIQ	16 Mb	133	-	2.7	3.6	-40	85	SOP-8	150 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSIQ	16 Mb	133	-	2.7	3.6	-40	85	SOP-8	208 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPIQ	16 Mb	133	-	2.7	3.6	-40	85	WSON-8	6x5 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXIQ	16 Mb	133	-	2.7	3.6	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUIQ	16 Mb	133	-	2.7	3.6	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVXGIQ	16 Mb	133	-	2.7	3.6	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVBYIQ	16 Mb	133	-	2.7	3.6	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNIM	16 Mb	133	66	2.7	3.6	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSIM	16 Mb	133	66	2.7	3.6	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPIM	16 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXIM	16 Mb	133	66	2.7	3.6	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUIM	16 Mb	133	66	2.7	3.6	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVTBIM	16 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNJQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSJQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPJQ	16 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXJQ	16 Mb	133	-	2.7	3.6	-40	105	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUJQ	16 Mb	133	-	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVXGJQ	16 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVBYJQ	16 Mb	133	-	2.7	3.6	-40	105	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNJM	16 Mb	133	66	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSJM	16 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPJM	16 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXJM	16 Mb	133	66	2.7	3.6	-40	105	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUJM	16 Mb	133	66	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-RV/RL Series

It combines high performance with energy efficiency for applications such as connected Internet of Things (IoT) edge devices. Designed to serve both industrial and consumer sectors, the compact form-factor reflects Winbond's commitment to innovation and meeting the evolving demands of the expanding IoT landscape. To ensure compatibility with industrial-plus grade applications, it provides an operating temperature range of 105°C and offers versatile solutions for diverse IoT implementations.

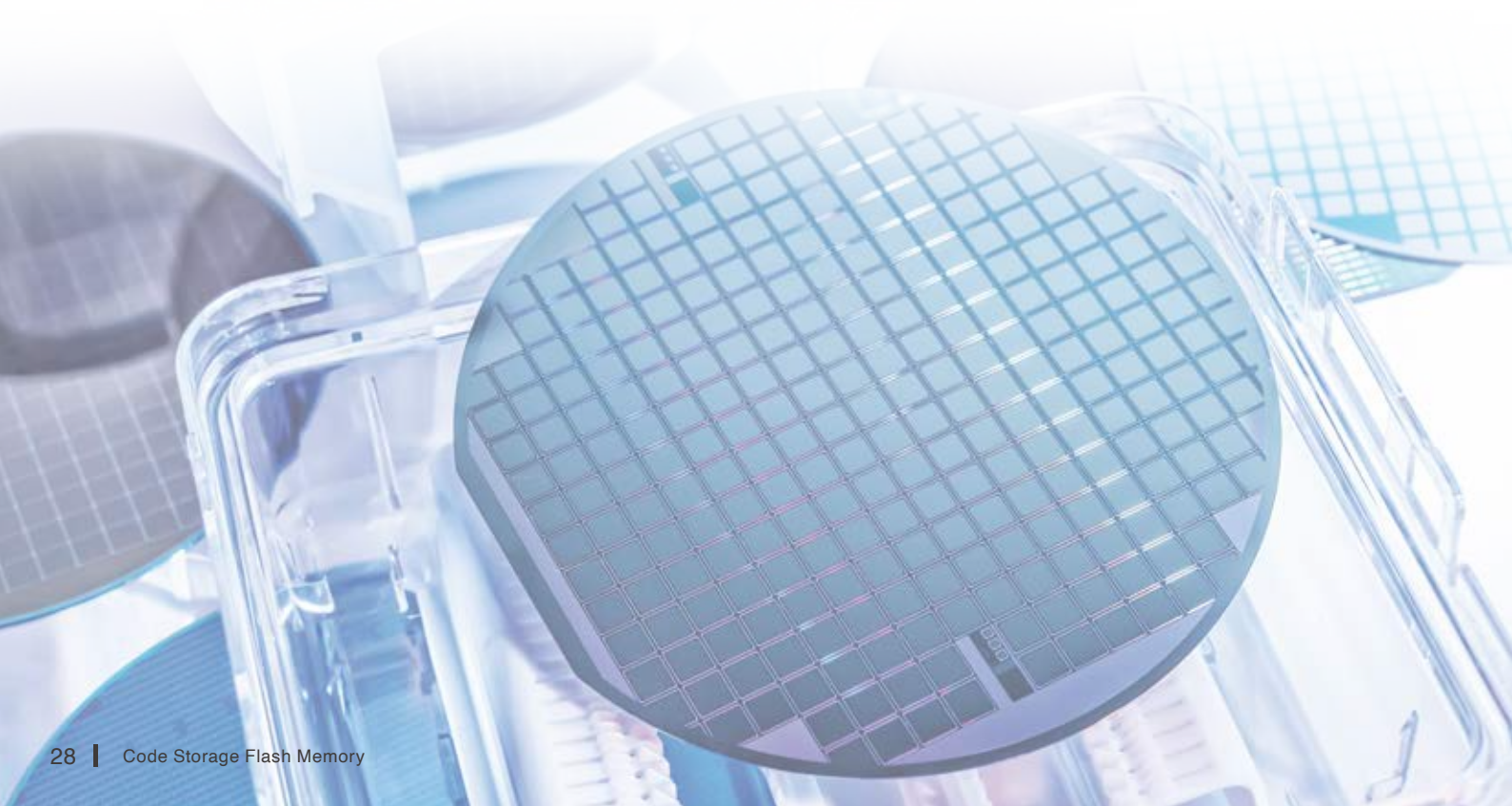
Key Feature:

- BUSY function[1]
- Built-in ECC[1]
- Read Command Bypass modes
- One Time Programmable (OTP)
- 105°C operating temperature (AC/DC spec are compatible with normal industrial 85°C)
- Die shrink for KGD segment
- Deep power-down mode for low power consumption
- Individual block protect[1]

Note: [1.] 32Mb – 2G.

Key Application:

Industrial, IoT, Wearable, Smart city, Smart energy, Camera, and Printer.



W25Q-RV Series

It supports 133MHz STR and 84MHz Normal Read for fast boot, short page program time and block erase time for better system performance, and all densities support 105°C as default. It is suitable for industrial IoT, image processor, PC peripheral, and automotive.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q51RVSFJQ	512 Mb	166	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q51RVZEJQ	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q51RVTBJQ	512 Mb	166	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q51RVSFJM	512 Mb	166	104	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q51RVZEJM	512 Mb	166	104	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q51RVTBJM	512 Mb	166	104	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	U Q2 2025	-
W25Q25RVSFJQ	256 Mb	166	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q25RVZEJQ	256 Mb	166	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q25RVTBJQ	256 Mb	166	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q25RVSFJM	256 Mb	166	104	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q25RVZEJM	256 Mb	166	104	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q25RVTBJM	256 Mb	166	104	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	U Q3 2025	-
W25Q32RVSNJQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q32RVSSJQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	P	-
W25Q32RVZPJQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q32RVXHJQ	32 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q32RVSNJM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q32RVSSJM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	P	-
W25Q32RVXHJM	32 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q32RVZPJM	32 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q16RVSNJQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q16RVZPJQ	16 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q16RVXHJQ	16 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q16RVSNJM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q16RVXHJM	16 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q16RVZPJM	16 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q16RVSSJQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	C	-
W25Q16RVSSJM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	C	-
W25Q80RVSNJQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q80RVSSJQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	P	-
W25Q80RVZPJQ	8 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q80RVXHJQ	8 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-

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W25Q-RV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q80RVSNJM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q80RVXHJM	8 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q80RVZPJM	8 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q80RVSSJM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	C	-
W25Q40RVSNJQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q40RVZPJQ	4 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q40RVXHJQ	4 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q40RVSNJM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	F	P	-
W25Q40RVZPJM	4 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	F	P	-
W25Q40RVXHJM	4 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	F	P	-
W25Q40RVSSJQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	C	-
W25Q40RVSSJM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	F	C	-

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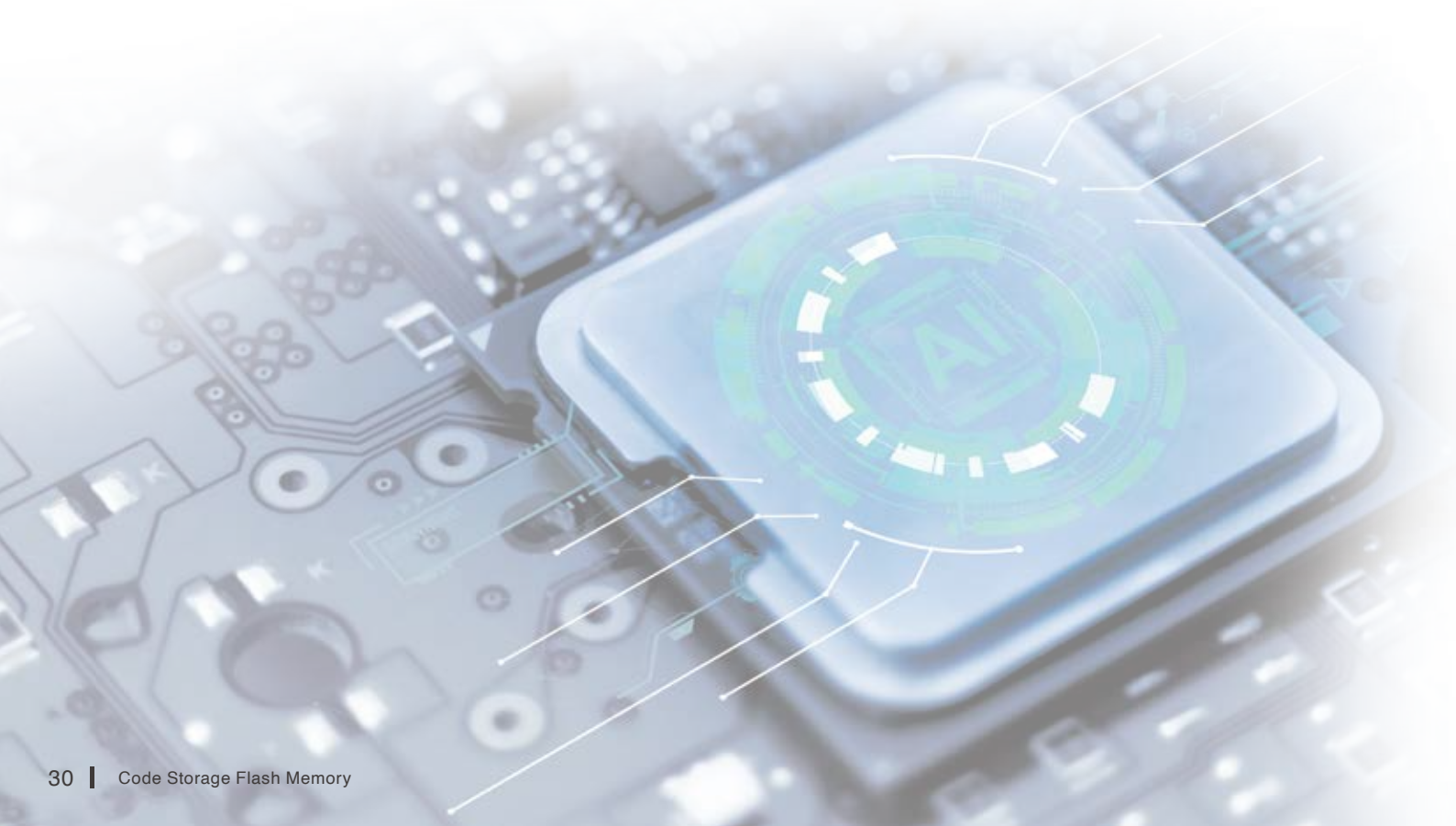

W25Q-RL Series

RL series can operate with 2.5V range with all RV series' features. It is suitable for HDD, Remote Controller, and Wearable Devices.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q40RLSNJQ	4 Mb	133	-	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q40RLZPJQ	4 Mb	133	-	2.3	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q40RLXHJQ	4 Mb	133	-	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q40RLSNJM	4 Mb	133	84	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q40RLZPJM	4 Mb	133	84	2.3	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q40RLXHJM	4 Mb	133	84	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q40RLSSJQ	4 Mb	133	-	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-
W25Q40RLSSJM	4 Mb	133	84	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-
W25Q20RLSNJQ	2 Mb	133	-	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q20RLXHJQ	2 Mb	133	-	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q20RLSNJM	2 Mb	133	84	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q20RLXHJM	2 Mb	133	84	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q20RLSSJQ	2 Mb	133	-	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-
W25Q20RLSSJM	2 Mb	133	84	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-
W25Q10RLSNJQ	1 Mb	133	-	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q10RLXHJQ	1 Mb	133	-	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q10RLSNJM	1 Mb	133	84	2.3	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q10RLXHJM	1 Mb	133	84	2.3	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q10RLSSJQ	1 Mb	133	-	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-
W25Q10RLSSJM	1 Mb	133	84	2.3	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	C	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-NW/JW/EW Series

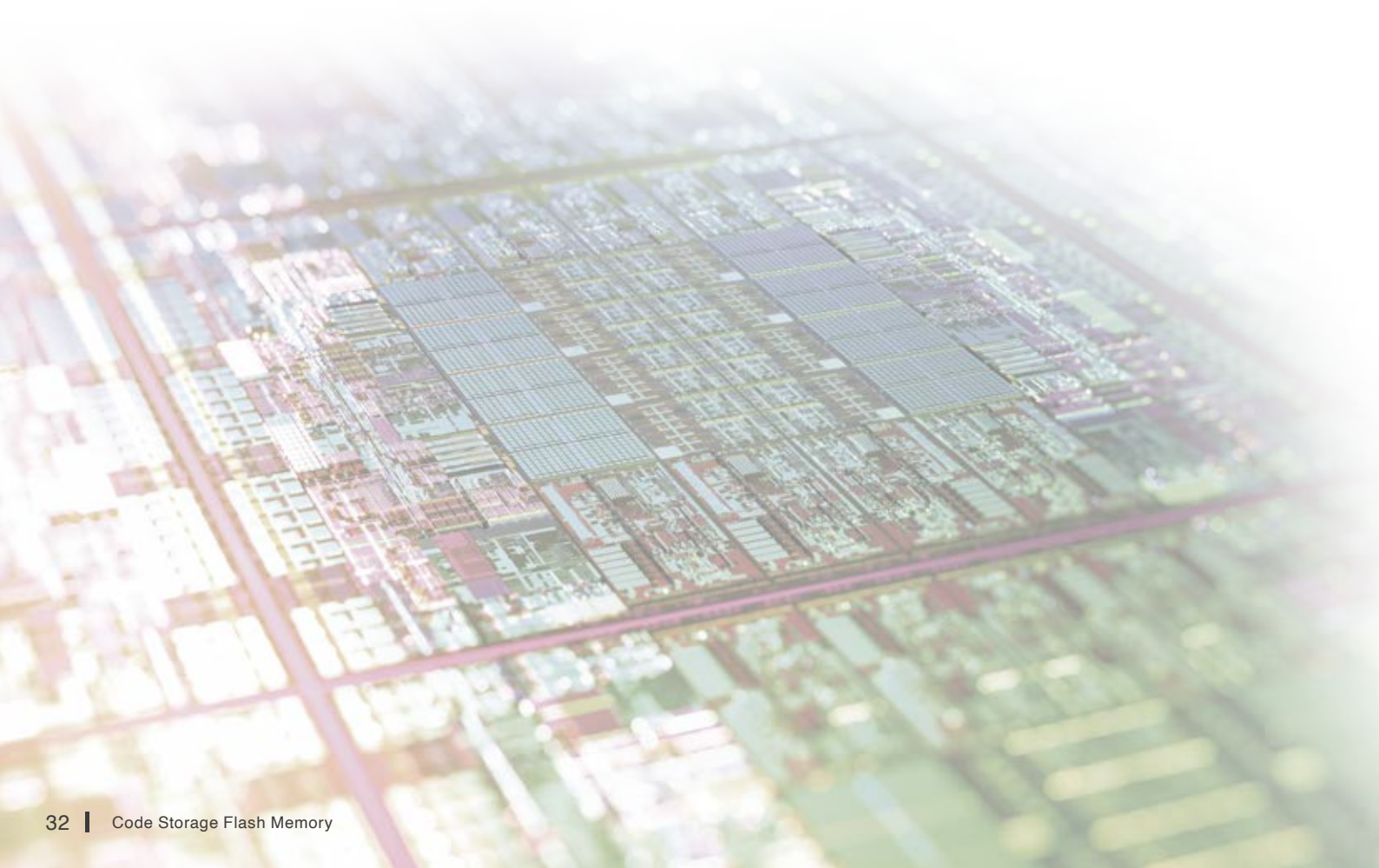
It provides ideal storage solutions for systems with constrained space, pins, and power, delivering outstanding flexibility, performance, and reliable quality. It is highly suitable for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP), and storing voice, text, and data. These series operate on a single 1.8V power supply, with power-down current consumption as low as 1μA.

Key Feature:

- 105°C operating temperature
- Deep power-down mode for low power consumption

Key Application:

IoT, Smart city, Health care, Smart home, and Automotive.



W25Q-NW Series

It supports 166MHz STR for instant boot and is suitable for laptops, BMC, and HMI.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q02NWTBIM	2 Gb	133	84	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q02NWTBJM	2 Gb	133	84	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q02NWTBIA	2 Gb	133	84	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	P	-
W25Q01NWSFIA	1 Gb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	F	P	-
W25Q01NWTBIA	1 Gb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	P	-
W25Q01NWSFIQ	1 Gb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01NWZEIQ	1 Gb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWTBIQ	1 Gb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWSFJQ	1 Gb	133	-	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01NWZEJQ	1 Gb	133	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWTBJQ	1 Gb	133	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWSFIN	1 Gb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	75% DRV
W25Q01NWZEIN	1 Gb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	75% DRV
W25Q01NWTBIN	1 Gb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	75% DRV
W25Q01NWSFIM	1 Gb	133	84	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01NWZEIM	1 Gb	133	84	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWTBIM	1 Gb	133	84	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWSFJM	1 Gb	133	84	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q01NWZEJM	1 Gb	133	84	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q01NWTBJM	1 Gb	133	84	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512NWFIQ	512 Mb	133	-	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q512NWEIQ	512 Mb	133	-	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512NWBIQ	512 Mb	133	-	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512NWYIQ	512 Mb	133	-	1.65	1.95	-40	85	WLCSP-88	-	SPI/Dual/Quad	-	B	P	-
W25Q512NWFIN	512 Mb	133	-	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q512NWEIN	512 Mb	133	-	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q512NWFIM	512 Mb	133	84	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q512NWEIM	512 Mb	133	84	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512NWBIM	512 Mb	133	84	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q512NWYIM	512 Mb	133	84	1.65	1.95	-40	85	WLCSP-88	-	SPI/Dual/Quad	-	B	P	-
W25Q512NWFIA	512 Mb	133	-	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	F	P	-
W25Q512NWEIA	512 Mb	133	-	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	F	P	-
W25Q512NWBIA	512 Mb	133	-	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	P	-
W25Q512NWBIS	512 Mb	133	84	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	F	P	-
W25Q512NWBIV	512 Mb	133	84	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	U Q4 2024	Separate / WP

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JW Series

It supports 66MHz DTR and QPI mode for XIP and is suitable for TWS and M2M modules.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25M512JWFIQ	512 Mb	104	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25M512JWEIQ	512 Mb	104	-	1.7	1.95	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25M512JWBIQ	512 Mb	104	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25M512JWCIQ	512 Mb	104	-	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWFIQ	256 Mb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPIQ	256 Mb	133	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWEIQ	256 Mb	133	-	1.7	1.95	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBIQ	256 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWCIQ	256 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWYIQ	256 Mb	133	-	1.7	1.95	-40	85	WLCSP-32	-	SPI/Dual/Quad	-	B	P	-
W25Q256JWFIN	256 Mb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q256JWEIN	256 Mb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q256JWFIM	256 Mb	133	66	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPIM	256 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWEIM	256 Mb	133	66	1.7	1.95	-40	85	WSON -8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBIM	256 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWCIM	256 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWYIM	256 Mb	133	66	1.7	1.95	-40	85	WLCSP-32	-	SPI/Dual/Quad	-	B	P	-
W25Q256JWFJQ	256 Mb	133	-	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPJQ	256 Mb	133	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWEJQ	256 Mb	133	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWSIQ	128 Mb	133	-	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFIQ	128 Mb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPIQ	128 Mb	133	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWEIQ	128 Mb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBIQ	128 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWCIQ	128 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWYIQ	128 Mb	133	-	1.7	1.95	-40	85	WLCSP-21	-	SPI/Dual/Quad	-	B	P	-
W25Q128JWSIN	128 Mb	133	-	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JWFIN	128 Mb	133	-	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JWEIN	128 Mb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q128JWSIM	128 Mb	133	66	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFIM	128 Mb	133	66	1.7	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPIM	128 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWEIM	128 Mb	133	66	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBIM	128 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWYIM	128 Mb	133	66	1.7	1.95	-40	85	WLCSP-21	-	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q128JWSJQ	128 Mb	133	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFJQ	128 Mb	133	-	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPJQ	128 Mb	133	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWEJQ	128 Mb	133	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBJQ	128 Mb	133	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWYJQ	128 Mb	133	-	1.7	1.95	-40	105	WLCSP-21	-	SPI/Dual/Quad	-	B	P	-
W25Q128JWSJM	128 Mb	133	66	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPJM	128 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWYJM	128 Mb	133	66	1.7	1.95	-40	105	WLCSP-21	-	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSIQ	64 Mb	133	-	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPIQ	64 Mb	133	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZEIQ	64 Mb	133	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUIQ	64 Mb	133	-	1.7	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGIQ	64 Mb	133	-	1.7	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBIQ	64 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWBYIQ	64 Mb	133	-	1.7	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSIN	64 Mb	133	-	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q64JWZPIN	64 Mb	133	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	DRV=75%
W25Q64JWSSIM	64 Mb	133	66	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPIM	64 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZEIM	64 Mb	133	66	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUIM	64 Mb	133	66	1.7	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGIM	64 Mb	133	66	1.7	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBIM	64 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWBYIM	64 Mb	133	66	1.7	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSJQ	64 Mb	133	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPJQ	64 Mb	133	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZEJQ	64 Mb	133	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUJQ	64 Mb	133	-	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGJQ	64 Mb	133	-	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBJQ	64 Mb	133	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWBYJQ	64 Mb	133	-	1.7	1.95	-40	105	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNIQ	32 Mb	133	-	1.7	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSIQ	32 Mb	133	-	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPIQ	32 Mb	133	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUIQ	32 Mb	133	-	1.7	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGIQ	32 Mb	133	-	1.7	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBIQ	32 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCIQ	32 Mb	133	-	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25Q-JW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q32JWBYIQ	32 Mb	133	-	1.7	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNIM	32 Mb	133	66	1.7	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSIM	32 Mb	133	66	1.7	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPIM	32 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUIM	32 Mb	133	66	1.7	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGIM	32 Mb	133	66	1.7	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBIM	32 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCIM	32 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWBYIM	32 Mb	133	66	1.7	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNJQ	32 Mb	133	-	1.7	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSJQ	32 Mb	133	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPJQ	32 Mb	133	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUJQ	32 Mb	133	-	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGJQ	32 Mb	133	-	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBJQ	32 Mb	133	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCJQ	32 Mb	133	-	1.7	1.95	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNIQ	16 Mb	133	-	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSIQ	16 Mb	133	-	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPIQ	16 Mb	133	-	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWUUIQ	16 Mb	133	-	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHIQ	16 Mb	133	-	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWBYIQ	16 Mb	133	-	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNIM	16 Mb	133	66	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSIM	16 Mb	133	66	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPIM	16 Mb	133	66	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHIM	16 Mb	133	66	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWBYIM	16 Mb	133	66	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNJQ	16 Mb	133	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSJQ	16 Mb	133	-	1.65	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPJQ	16 Mb	133	-	1.65	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWUUJQ	16 Mb	133	-	1.65	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHJQ	16 Mb	133	-	1.65	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWBYJQ	16 Mb	133	-	1.65	1.95	-40	105	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-EW Series

It supports QPI mode in low density for XIP and is suitable for GPS and AMOLED.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q80EWSNIQ	8 Mb	104	-	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q80EWSSIQ	8 Mb	104	-	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q80EWZPIQ	8 Mb	104	-	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q80EWBYIQ	8 Mb	104	-	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q80EWUXIE	8 Mb	104	-	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q80EWSNJQ	8 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q80EWSSJQ	8 Mb	104	-	1.65	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q40EWSNIG	4 Mb	104	-	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q40EWSSIG	4 Mb	104	-	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q40EWBYIG	4 Mb	104	-	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q40EWUXIE	4 Mb	104	-	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q40EWSNJG	4 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q40EWSSJG	4 Mb	104	-	1.65	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q40EWUXJE	4 Mb	104	-	1.65	1.95	-40	105	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q20EWSNIG	2 Mb	104	-	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q20EWBYIG	2 Mb	104	-	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q20EWUXIE	2 Mb	104	-	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q20EWSNJG	2 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q10EWSSIG	1 Mb	104	-	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q10EWBYIG	1 Mb	104	-	1.65	1.95	-40	85	WLCSP-8	-	SPI/Dual/Quad	-	B	P	-
W25Q10EWUXIE	1 Mb	104	-	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-PW Series

It is the highest-performance SPI NOR Flash with very useful BUSY output new function. It uses Winbond's latest 4x nm process to achieve a small form factor, which benefits size-concerned applications.

Key Feature:

- BUSY function[1]
- Built-in ECC[2]
- Read Command Bypass mode
- One Time Programmable (OTP)
- 105°C operating temperature (AC/DC spec are compatible with normal industrial 85°C)
- Dual/quad SPI with 166MHz STR and 80MHz DTR
- Die shrink for KGD segment
- Deep power-down mode for low power consumption
- Space-efficient packaging

Note: 1. 64Mb, 128Mb, 256Mb support
2. 64Mb-256Mb

Key Application:

Wearable, True Wireless Stereo (TWS), Networking, AMOLED, and Gaming controller.

W25Q-PW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q25PWSSIQ	256 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	P	-
W25Q25PWSFIQ	256 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25Q25PWXCIQ	256 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWZPIQ	256 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWZEIQ	256 Mb	166	104	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWTBIQ	256 Mb	166	104	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWBYIQ	256 Mb	166	104	1.65	1.95	-40	85	WLCSP-32	-	SPI/Dual/Quad	1	B	P	-
W25Q25PWSSIM	256 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	P	-
W25Q25PWSFIM	256 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25Q25PWXCIM	256 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWZPIM	256 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWZEIM	256 Mb	166	104	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWTBIM	256 Mb	166	104	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q25PWBYIM	256 Mb	166	104	1.65	1.95	-40	85	WLCSP-32	-	SPI/Dual/Quad	1	B	P	-
W25Q12PWSSIQ	128 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	P	-
W25Q12PWSFIQ	128 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25Q12PWZPIQ	128 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWZEIQ	128 Mb	166	104	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWTBIQ	128 Mb	166	104	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	C	-
W25Q12PWUUIQ	128 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWXGIQ	128 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWBYIH	128 Mb	166	104	1.65	1.95	-40	85	WLCSP-16	-	SPI/Dual/Quad	1	B	P	-
W25Q12PWSSIM	128 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	P	-
W25Q12PWSFIM	128 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25Q12PWZPIM	128 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWZEIM	128 Mb	166	104	1.65	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWUUIQ	128 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWXGIQ	128 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	1	B	P	-
W25Q12PWBYIM	128 Mb	166	104	1.65	1.95	-40	85	WLCSP-16	-	SPI/Dual/Quad	1	B	P	-
W25Q64PWSNIQ	64 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWSSIQ	64 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWSFIQ	64 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWXHIQ	64 Mb	166	104	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWUUIQ	64 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWXGIQ	64 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWZPIQ	64 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWTBIQ	64 Mb	166	104	1.65	1.95	-40	85	BGA-24	8x6 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWBYIQ	64 Mb	166	104	1.65	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	1	B	U Q2 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-PW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q64PWSNIM	64 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWSSIM	64 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWSFIM	64 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWXHIM	64 Mb	166	104	1.65	1.95	-40	85	USON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWUUIM	64 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWXGIM	64 Mb	166	104	1.65	1.95	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWZPIM	64 Mb	166	104	1.65	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q64PWTBIM	64 Mb	166	104	1.65	1.95	-40	85	BGA-24	8x6 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWSNIQ	32 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWSSIQ	32 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWXHIQ	32 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWUUIQ	32 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWSNIM	32 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWSSIM	32 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWXHIM	32 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q33PWUUIM	32 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWSNIQ	16 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWSSIQ	16 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWXHIQ	16 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWUUIQ	16 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWSNIM	16 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWSSIM	16 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWXHIM	16 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q16PWUUIM	16 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWSNIQ	8 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWSSIQ	8 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWXHIQ	8 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWUUIQ	8 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWSNIM	8 Mb	166	104	1.65	1.95	-40	85	SOP-8	208 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWSSIM	8 Mb	166	104	1.65	1.95	-40	85	SOP-8	150 mil	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWXHIM	8 Mb	166	104	1.65	1.95	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-
W25Q80PWUUIM	8 Mb	166	104	1.65	1.95	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	1	B	U Q2 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-PY Series

It is the highest-performance SPI NOR Flash with the new BUSY output function. Its page program and block erase times are the same for the 1.8 V W25Q-PW.

Key Feature:

- 1.2V I/O[1]
- BUSY function[2]
- Built-in ECC[2]
- Read Command Bypass mode
- One Time Programmable (OTP)
- Die shrink for KGD segment
- Deep power-down mode for low power consumption
- Space-efficient packaging

Note: 1. 8Mb, 16Mb, 32Mb, 64Mb, 256Mb support.
2. 64Mb, 128Mb, 256Mb support.

Key Application:

Wearable, True Wireless Stereo (TWS), Networking, AMOLED, and Gaming controller.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q25PYSFIQ	256 Mb	166	-	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYTBIQ	256 Mb	166	-	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYSFIM	256 Mb	166	104	1.65	1.95	-40	85	SOP-16	300 mil	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYZNIM	256 Mb	166	104	1.65	1.95	-40	85	WQFN-12	6x5-mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYTBIM	256 Mb	166	104	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYBYIH	256 Mb	166	-	1.65	1.95	-40	85	WLCSP-32	-	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYZNIH	256 Mb	166	104	1.65	1.95	-40	85	WQFN-12	6x5-mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q25PYTBIH	256 Mb	166	104	1.65	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q64PYTBIH	64 Mb	166	104	1.65	1.95	-40	85	BGA-24	8x6 mm	SPI/Dual/Quad	1	B	U Q1 2025	-
W25Q64PYBYIH	64 Mb	166	104	1.65	1.95	-40	85	WLCSP-12	-	SPI/Dual/Quad	1	B	U Q1 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

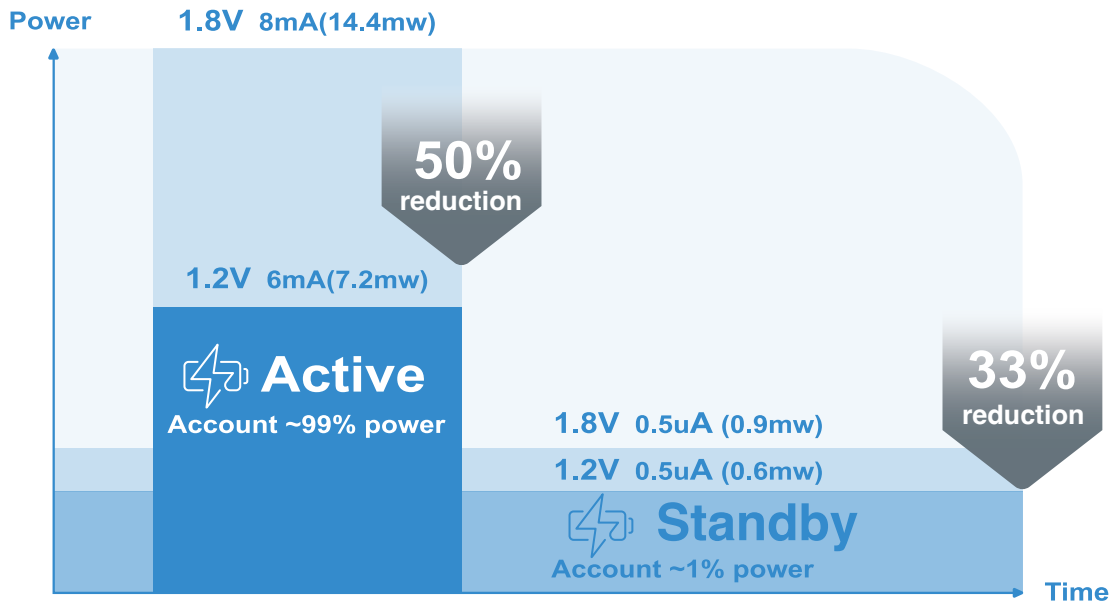
1.2V Serial NOR Flash

The First Ultra-Low-Voltage SpiFlash® Memories - 1.2V Device Features Small 8-Pin Package

1.2V Multi-I/O Serial NOR Flash memories, ranging in densities from 8Mb to 512Mb, featuring small packages and low power consumption, are offered in Dual SPI, Dual I/O, Quad I/O, and QPI versions, which offer even higher performance transfer rates up to 133MB/s.

Application

- PC and PC peripheral
- Display
- AI accelerator



Back ward compatible command set

- No software / firmware change required
- Voltage change only

Small package for portable device

- SOP8
- SON8
- WLCSP
- Known Good Die

W25Q NE Series

It is the 1.2V low-voltage NOR Flash with an 8-pin package. It provides designers for demanding applications that require low power in small packages. With a 42 MB/s transfer rate, it is optimal for a broad range of consumer and industrial applications.
Advanced processes enable more applications to migrate to lower Vcc levels. Removing the 1.8V IO bank can be more cost-effective for some application suppliers. For specific application ICs, especially those related to AI computing, 1.2V is the only choice.

Key Feature:

- BUSY function[1]
- Built-in ECC[1]
- Continuous and Read Command Bypass mode
- One Time Programmable (OTP)
- 1.2V Vcc
- Deep power-down mode for low power consumption
- Individual block protect[1]

Note: [1.] 512Mb only.

Key Application:

AI server, Notebook, Desktop computer, OLED, GPU accelerator, Smartphone

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	SFDP Version	Mass Production
W25Q25NESFIG	256 Mb	133	133	1.14	1.26	-40	85	SOP-16	300 mil	SPI/Dual/Quad	F	U Q2 2025
W25Q25NEZEIG	256 Mb	133	133	1.14	1.26	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	F	U Q2 2025
W25Q25NEZPIG	256 Mb	133	133	1.14	1.26	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	F	U Q2 2025
W25Q25NEBYIG	256 Mb	133	133	1.14	1.26	-40	85	WLCSP	-	SPI/Dual/Quad	F	U Q2 2025
W25Q12NESSIG	128 Mb	104	-	1.14	1.26	-40	85	SOP-8	208 mil	SPI/Dual/Quad	F	P
W25Q12NEZPIG	128 Mb	104	-	1.14	1.26	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	F	P
W25Q12NEXGIG	128 Mb	104	-	1.14	1.26	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	F	P
W25Q12NEBYIG	128 Mb	104	-	1.14	1.26	-40	85	WLCSP-20	-	SPI/Dual/Quad	F	P
W25Q64NESSIG	64 Mb	84	-	1.14	1.26	-40	85	SOP-8	208 mil	SPI/Dual/Quad	B	P
W25Q64NEXGIG	64 Mb	84	-	1.14	1.26	-40	85	XSON-8	4x4 mm	SPI/Dual/Quad	B	P
W25Q64NEBYIG	64 Mb	84	-	1.14	1.26	-40	85	WLCSP-16	-	SPI/Dual/Quad	B	P
W25Q64NEZPIG	64 Mb	84	-	1.14	1.26	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	B	C
W25Q64NEUUIG	64 Mb	84	-	1.14	1.26	-40	85	USON-8	4x3 mm	SPI/Dual/Quad	B	C
W25Q16NESNIG	16 Mb	104	104	1.14	1.26	-40	85	SOP-8	150 mil	SPI/Dual/Quad	F	U Q2 2025
W25Q16NEXHIG	16 Mb	104	104	1.14	1.26	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	F	U Q2 2025
W25Q16NEBYIG	16 Mb	104	104	1.14	1.26	-40	85	WLCSP-8	-	SPI/Dual/Quad	F	U Q2 2025
W25Q81NESNIG	8 Mb	104	104	1.14	1.26	-40	85	SOP-8	150 mil	SPI/Dual/Quad	F	U Q2 2025
W25Q81NEXHIG	8 Mb	104	104	1.14	1.26	-40	85	XSON-8	2x3 mm	SPI/Dual/Quad	F	U Q2 2025

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

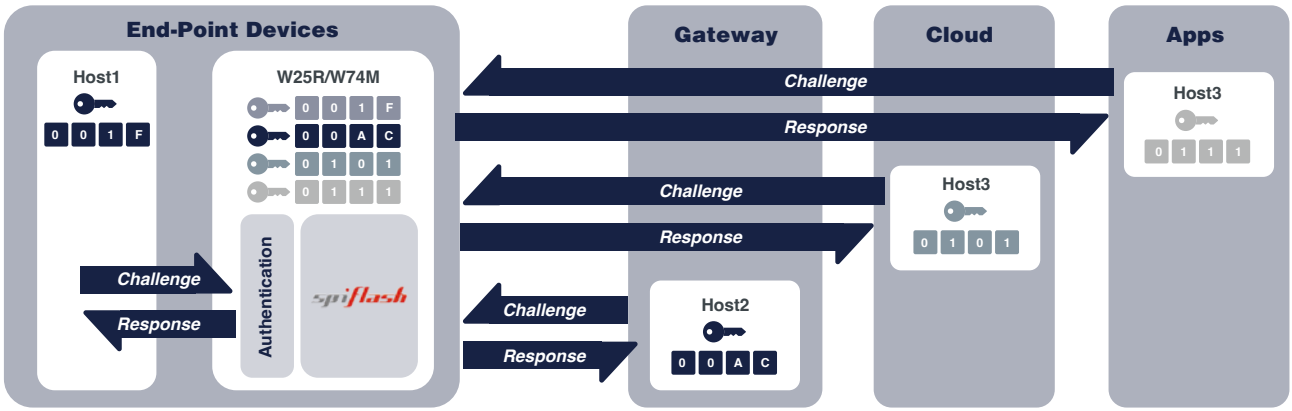
RPMC Authentication Flash

The Simplest and Quickest Way to Add “Multi-layer Authentication” into Your Existing Designs

Winbond’s RPMC Authentication Flash memories feature a standard HMAC-SHA-256 cryptographic accelerator and four Monotonic Flash Counters, each authenticated with unique secret keys. It includes a Replay Protection Monotonic Counter (RPMC) that allows the system to check the integrity and authenticity of counter readings while attaching secure timestamps to messages sent. This configuration guarantees a highly secure link between the flash device and its controller, greatly minimizing the risk of hardware attacks. These capabilities enable system designers to enhance the security of code/data storage, addressing the increasing security requirements of the evolving IoT environment.

Application

- Consumer IoT
- Industrial IoT, Industrial PC, Servers
- Critical infrastructure equipment
- Multi-function printer



W25R Series

It has a standard HMAC-SHA-256 crypto accelerator and 4 separate Monotonic Flash Counters that are HMAC-signed by individual secret keys. A system utilizing each Monotonic Flash Counter can verify the integrity and authenticity of the counter values and add a timestamp to the message/information transmitted with the resistance to reply to attacks. It enables system designers to strengthen code/data storage and delivers increased security for the emerging IoT demanding multi-layered authenticity.

Key Feature:

- One Time Programmable (OTP)
- 105°C operating temperature
- Deep power-down mode for low power consumption
- Replay Protection Monotonic Counter (RPMC)

Key Application:

PC, Emerging IoT demanding multi-layered authenticity, Home automation.

Part No.	Density	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production	Note
W25R01JVZHIQ	1 Gb	133	2.7	3.6	-40	85	VSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R01NWZHIQ	1 Gb	133	1.7	1.95	-40	85	VSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R512JVEIQ	512 Mb	133	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R512JVFIQ	512 Mb	133	2.7	3.6	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R512JVEIN	512 Mb	133	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R512JVFIN	512 Mb	133	2.7	3.6	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R512NWEIQ	512 Mb	133	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R512NWFIQ	512 Mb	133	1.7	1.95	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R256JVEIQ	256 Mb	133	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R256JVFIQ	256 Mb	133	2.7	3.6	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R256JVEIN	256 Mb	133	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R256JVFIN	256 Mb	133	2.7	3.6	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R256JWPIQ	256 Mb	104	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R256JWEIQ	256 Mb	104	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R256JWFIQ	256 Mb	104	1.7	1.95	-40	85	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R128JVSIQ	128 Mb	133	2.7	3.6	-40	85	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R128JVPIQ	128 Mb	133	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R128JVEIQ	128 Mb	133	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R128JWSIQ	128 Mb	104	1.7	1.95	-40	85	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R128JWPIQ	128 Mb	104	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R128JWEIQ	128 Mb	104	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R64JVSSIQ	64 Mb	133	2.7	3.6	-40	85	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R64JVZPIQ	64 Mb	133	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 50%, RPMC fixed
W25R64JWSSIQ	64 Mb	104	1.7	1.95	-40	85	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 75%, RPMC fixed
W25R64JWZPIQ	64 Mb	104	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 75%, RPMC fixed

Remark 1 : DRV=75%, DRV=50%, means Default Driver Strength 50% or 75%.
Remark 2 : RPMC fixed means W25R is for RPMC, W74M is for Authentication.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Octal NOR Flash

High Bandwidth Octal Interface 1.8V NOR Flash Memories in Densities from 64Mb to 2Gb

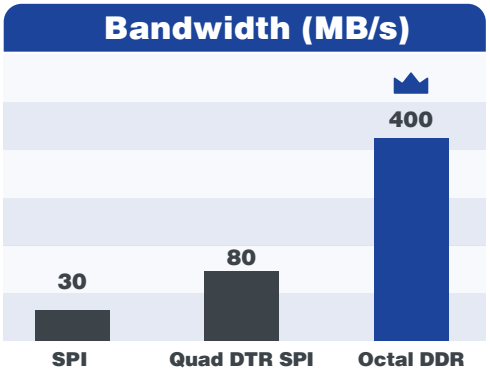
Winbond's Octal NOR Flash memories with the JEDEC xSPI interface offer a combination of high bandwidth, advanced features, and exceptional reliability. They deliver the highest synchronous byte-wide (8-bit) data bandwidth on code and data storage solutions for instant-on and eXecute-In-Place (XIP) embedded applications. This innovative Octal DDR interface ensures maximum performance, low signal count, and backward compatibility with legacy x1 SPI systems for seamless migration. This series offers greater flexibility and a fast burst speed than the regular SPI interface NOR Flash.

The W35T family provides a maximum Continuous Read throughput of 400MB/s, five times faster than the standard high-performance W25Q SpiFlash® family. The memory chip comes with built-in ECC, CRC-at-Rest, and CRC-in-Transit support, ensuring the integrity of the data stored in the Flash as well as the fidelity of the content transported through the Octal interface. With additional features, including Security Registers, Hardware Write Protection, and adherence to ISO26262 ASIL-D compliance procedures, the highest classification of automotive standards, the Octal NOR Flash helps automotive manufacturers meet stringent requirements for functional safety.

Manufactured using Winbond's 58nm process, the W35T family, which offers 100,000 Program/Erase Cycles and supports 20-year data retention. It is an ideal choice for mission-critical automotive and industrial applications that require high endurance and reliability.

Application

- Instrument cluster application, Advanced driving assistance systems, Driving monitoring systems, Gateway and domain controller, eCockpit, Infotainment
- AI accelerator, AI server, Field Programmable Gate Array (FPGA)
- Wearable, Human Machine Interface (HMI), Instant boot camera applications
- Smart lock, Robot



W35T-NW Series

With the JEDEC xSPI interface, it offers a combination of high bandwidth, advanced features, and exceptional reliability. It delivers the highest synchronous byte-wide (8-bit) data bandwidth on code and data storage solutions for instant-on and eXecute-In-Place (XIP) embedded applications.

Key Feature:

- 1.2V I/O[1]
- BUSY function[1]
- Built-in ECC
- CRC-in-Transit support
- Read Command Bypass mode
- One Time Programmable (OTP)
- Automotive Grade (AG)
- AEC-Q100
- Octal SPI with 166MHz SDR and 120MHz DDR
- Deep power-down mode for low power consumption
- Individual block protect[1]

Note: [1.] 64Mb, 128Mb, 256Mb only

Key Application:

Data center and cloud service, AI accelerator, AI server, Field Programmable Gate Array (FPGA), Wearable, Human Machine Interface (HMI), Instant boot camera applications, IoT, Smart lock, and Robot.

W35T-NW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production
W35T02NWTBIE	2 Gb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q2 2025
W35T02NWTBIF	2 Gb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T02NWTBJE	2 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q2 2025
W35T02NWTBJF	2 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T01NWTBIE	1 Gb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q2 2025
W35T01NWTBIF	1 Gb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T01NWTBJE	1 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q2 2025
W35T01NWTBJF	1 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T51NWTBIE	512 Mb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	P
W35T51NWTBIF	512 Mb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	P
W35T51NWTBJE	512 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	C
W35T51NWTBJF	512 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	C
W35T51NWSFIE	512 Mb	166	200	1.65	2	-40	85	SOP-16	300 mil	SPI/Octal	1	F	C
W35T51NWSFIF	512 Mb	166	200	1.65	2	-40	85	SOP-16	300 mil	Octal	1	F	C
W35T51NWSFJE	512 Mb	166	200	1.65	2	-40	105	SOP-16	300 mil	SPI/Octal	1	F	C
W35T51NWSFJF	512 Mb	166	200	1.65	2	-40	105	SOP-16	300 mil	Octal	1	F	C
W35T25NWTBIE	256 Mb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q1 2025
W35T25NWTBIF	256 Mb	166	200	1.65	2	-40	85	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T25NWTBJE	256 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q2 2025
W35T25NWTBJF	256 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q2 2025
W35T25NWSFIE	256 Mb	166	200	1.65	2	-40	85	SOP-16	300 mil	SPI/Octal	1	F	U Q3 2025
W35T25NWSFIF	256 Mb	166	200	1.65	2	-40	85	SOP-16	300 mil	Octal	1	F	U Q3 2025
W35T25NWSFJE	256 Mb	166	200	1.65	2	-40	105	SOP-16	300 mil	SPI/Octal	1	F	U Q3 2025
W35T25NWSFJF	256 Mb	166	200	1.65	2	-40	105	SOP-16	300 mil	Octal	1	F	U Q3 2025

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

QspiNAND Flash

High Data Throughput with Continuous Read and Robust Built-in ECC

Winbond's QspiNAND Flash memories offer embedded designers a winning combination of affordability and reliability and come in four densities: 512Mb, 1Gb, 2Gb, and 4Gb which feature the Quad SPI interface and cater to storage needs in NOR Flash systems that exceed 512Mb.

Compared to ONFI NAND Flash memories, they offer smaller package sizes, leading to significant savings in manufacturing processes, such as PCB cost. They also offer faster program and erase times, greatly enhancing overall system performance. With the "continuous read" functionality features, they effectively transfer NAND contents to DRAM. They increase the efficiency of code shadowing, resulting in a notable improvement in system performance.

Winbond's QspiNAND Flash memories is an exceptional product that stands out compared to other NAND Flash in that they offer a data transfer rate of up to 83MB/s, much faster than competing options. They also support a hardware reset pin, which helps to simplify hardware and software designs, especially in automotive applications. The single, dual, and quad I/O options make it easy to tailor your storage density and data transfer rates to your specific needs. With built-in ECC reduces SoC loading for every application, they boast faster data transfer rates, making it an excellent fit for automotive applications and beyond.

Application

- Instrument cluster applications, Advanced driver assistance systems (ADAS), Center Information Display, Vehicle-to-everything (V2X)
- xDSL, Gigabit passive optical network, Voice over IP, IP camera, Cable, IP set-top box, Switch
- Smart home, Smart speaker, Smart watch, Wearable, Earphone

W25N-GV Series

It is a 3V QspiNAND Flash designed to provide reliable and cost-effective storage solutions. It leverages the Serial Peripheral Interface (SPI) for efficient data transfer. It offers a small form factor with high-capacity storage, making it ideal for Industrial and Automotive applications.

Key Feature:

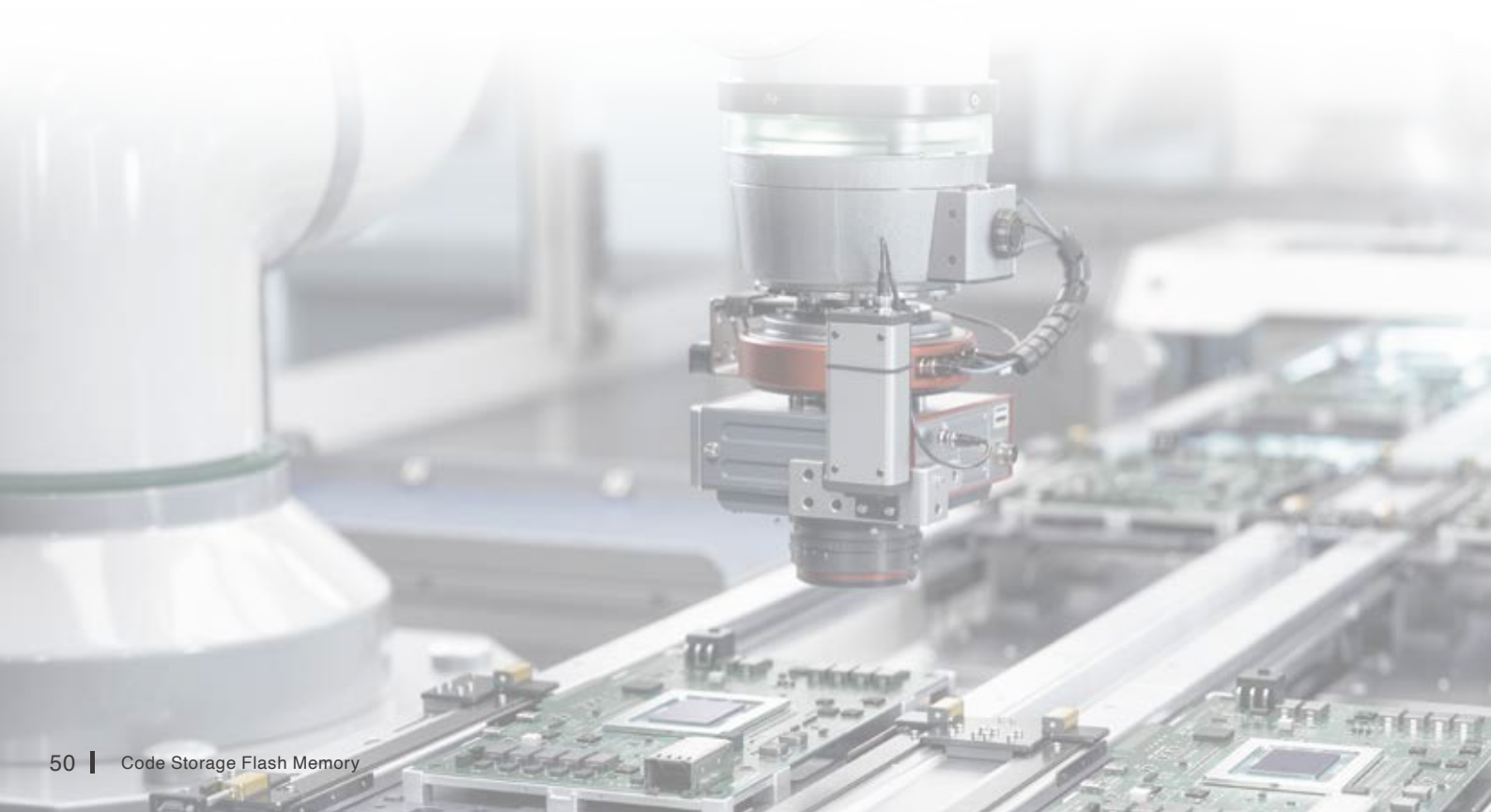
- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- 105°C operating temperature
- Deep power-down mode for low power consumption[1]
- Space-efficient packaging[2]

Note: [1.] 512Mb only.

[2.] Feasible to WSON8 (6x5) for 512Mb and mainstream WSON8 (8x6) for 1Gb and 2Gb.

Key Application:

Video Event Data Recorder (VEDR), Surveillance, Networking, xDSL, Gigabit Passive Optical Network (GPON), Set Top Box (STB), Smart home, Wearable, and Home entertainment applications.



W25N-GV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N01GVSFIG	1 Gb	104	-	2.7	3.6	-40	85	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVZEIG	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVSFIT	1 Gb	104	-	2.7	3.6	-40	85	SOIC-16	300 mil	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVZEIT	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVTBIT	1 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVZEIR	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVZEJG	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVZEJR	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVTBIG	1 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	C
W25N512GVEIG	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVEIT	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVPIG	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	C
W25N512GVBIG	512 Mb	166	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	C
W25N512GVPIT	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N512GVBIT	512 Mb	166	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N512GVPIR	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	C
W25N512GVEIR	512 Mb	166	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	C
W25N512GVBIR	512 Mb	166	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	C
W25N512GVEJG	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	C

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25N-KV Series

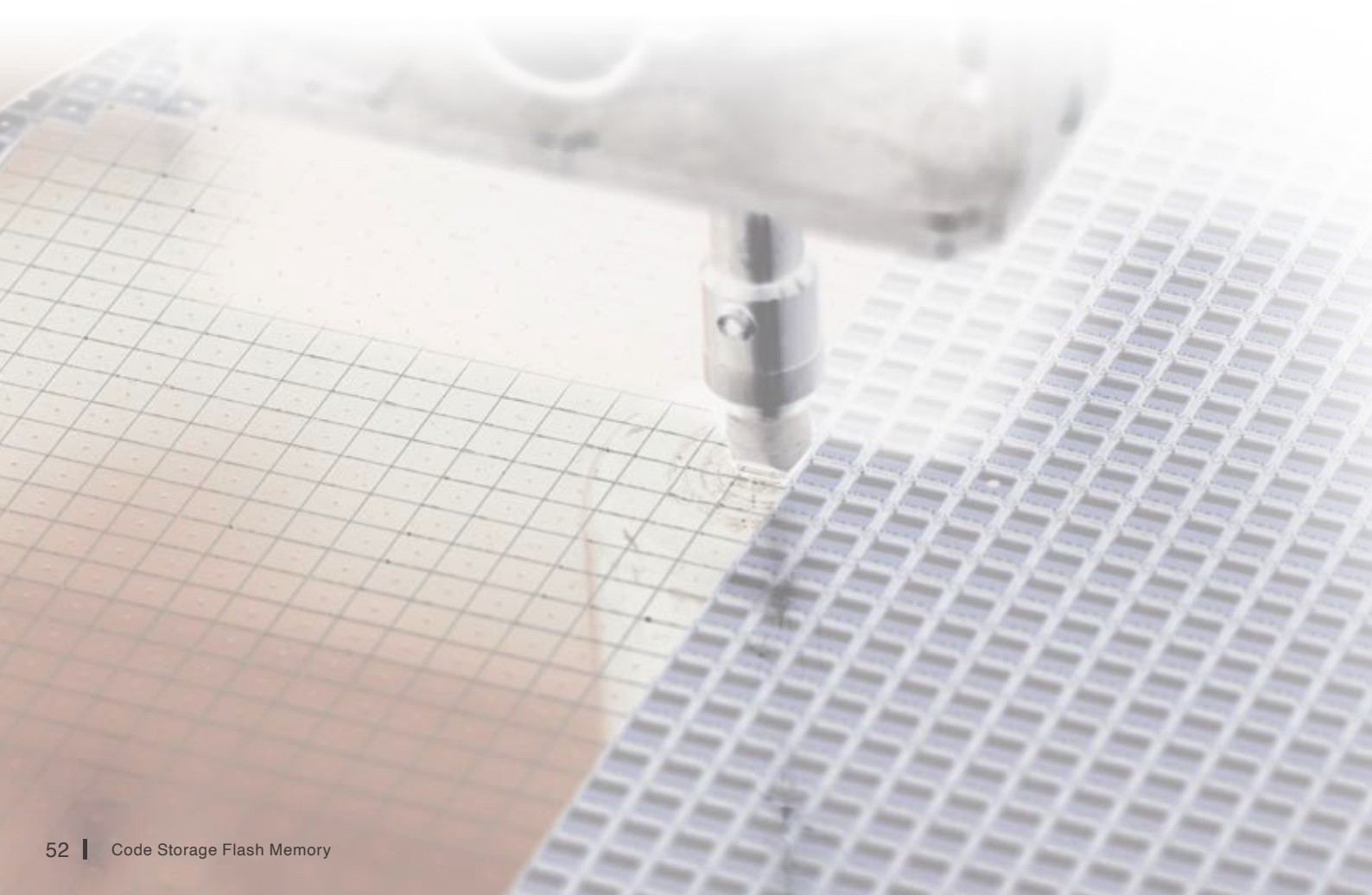
It offers densities from 1Gb to 4Gb. It can be a cost-effective option, as it is available in packages that are up to 80% smaller than ONFI NAND. It offers a competitive advantage when comparing cost per bit to high-density NOR Flash.

Key Feature:

- One Time Programmable page (OTP)
- 105°C operating temperature
- Deep power-down mode for low power consumption
- Die shrink for KGD segment
- WSON5x6 for 1Gb

Key Application:

Gigabit Passive Optical Network (GPON), IP camera, xDSL, and Surveillance.



W25N-KV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N04KVZEIR	4 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KVTBIR	4 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KVZEJR	4 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KVTBJR	4 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KVZEIU	4 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KVTBIU	4 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KVZEJU	4 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KVTBJU	4 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KVZEIR	2 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KVTBIR	2 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KVZEIE	2 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	Sequential	2048	128	P
W25N02KVZEJR	2 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KVTBJR	2 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KVZEIU	2 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KVTBIU	2 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KVTBIE	2 Gb	104	-	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	Sequential	2048	128	C
W25N02KVZEJU	2 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KVTBJU	2 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KVZEJE	2 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	Sequential	2048	128	C
W25N02KVTBJE	2 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	Sequential	2048	128	C
W25N01KVZPIR	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	P
W25N01KVZEIR	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	P
W25N01KVZEIE	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	Sequential	2048	64	P
W25N01KVZPIU	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	C
W25N01KVZEIU	1 Gb	104	-	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	C
W25N01KVZEJR	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	C

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25N-GW/JW Series

W25N-GW/JW is highly reliable and fast boot QspiNAND Flash; it enables a data transfer rate of 40MB/s and provides a new solution for accelerating cluster boot-up time. It's also feasible for mainstream package types such as WSON8(8x6) and TFBGA24.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- 105°C operating temperature
- Dual/quad SPI with 166MHz STR and 80MHz DTR

Key Application:

Video Event Data Recorder (VEDR), Surveillance, Networking, xDSL, Gigabit Passive Optical Network (GPON), Set Top Box (STB), Smart home, Wearable, and Home entertainment applications.

W25N-GW Series

It supports 104MHz Standard/Dual/Quad SPI clocks, Built-in 1bit ECC for memory array, 100,000 erase/program cycles, and more than 16 Good blocks. It is suitable for VEDR, car camera, car gateway, surveillance and automation, xDSL, GPON and Set top box (STB), Smart home, wearable, and home entertainment applications.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N01GWZEIG	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GWZEIT	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GWZEJG	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GWEIT	512 Mb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GWYIT	512 Mb	104	-	1.7	1.95	-40	85	WLCSP-48	-	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GWEIR	512 Mb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N512GWPIT	512 Mb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N512GWPIR	512 Mb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	C
W25N512GWYIR	512 Mb	104	-	1.7	1.95	-40	85	WLCSP-48	-	SPI/Dual/Quad	1	Buffer	-	2048	64	C

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25N-JW Series

It supports high performance Dual/quad SPI with 166MHz STR and 80MHz DTR, Continuous Read mode with ECC, built-in 1bit ECC, Bad Block Management Lookup Table (BBM LUT), 100,000 erase/program cycles, TFBGA24 package, and support AG2/AG2+ grade. It targets fast booting and OTA, smart doorbell, and wearable applications.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N02JWZEIF	2 Gb	166	80	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWTBIF	2 Gb	166	80	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWZEJF	2 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWTBJF	2 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWZEIC	2 Gb	166	80	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N02JWTBIC	2 Gb	166	80	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N02JWZEJC	2 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N02JWTBJC	2 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	C
W25N01JWZEIG	1 Gb	166	80	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWTBIG	1 Gb	166	80	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWZEIT	1 Gb	166	80	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWTBIT	1 Gb	166	80	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWZEJG	1 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWTBJG	1 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWZEJT	1 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWTBJT	1 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25N-KW Series

It offers densities from 1Gb to 4Gb. It can be a cost-effective option, as it is available in packages that are up to 80% smaller than ONFI NAND. It offers a competitive advantage when comparing cost per bit to high-density NOR Flash.

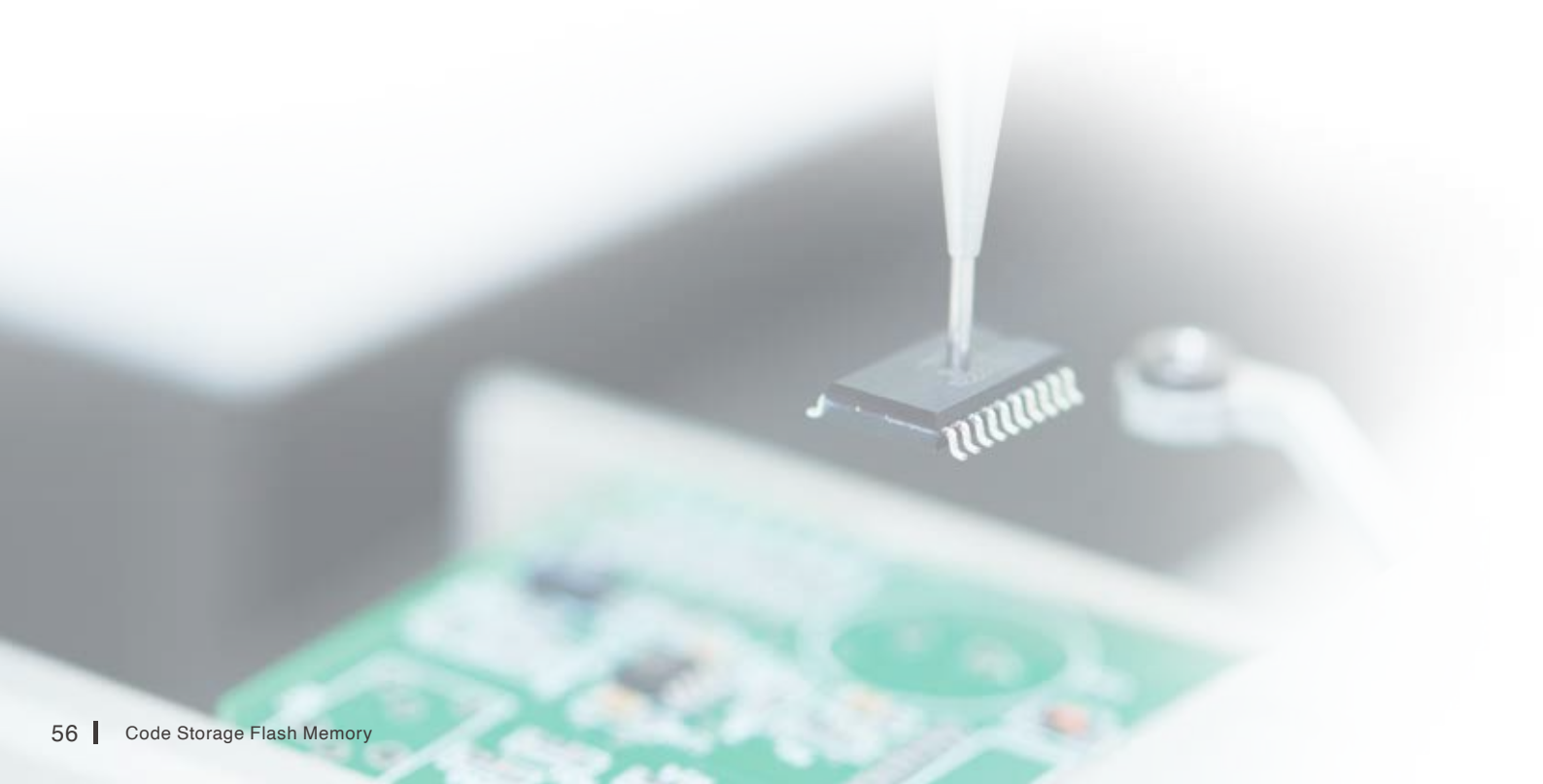
Key Feature:

- Built-in ECC[1]
- Bad Block Management Lookup Table (BBM LUT)
- Support Buffer Read
- Continuous Read and Sequential Read modes
- One Time Programmable page (OTP)
- 105°C operating temperature
- Die shrink for KGD segment
- Deep power-down mode for low power consumption
- Space-efficient packaging[2]

Note: 1. 4-bit ECC for 1Gb and 8-bit ECC for 2Gb and 4Gb.
2. 1Gb could fit into WSON8(6x5), 1Gb, 2Gb, and 4Gb could fit into WSON8(8x6).

Key Application:

Gigabit Passive Optical Network (GPON), IP camera, xDSL, and Surveillance.



Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N04KWZEIR	4 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KWTBIR	4 Gb	104	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KWZEJR	4 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KWTBJR	4 Gb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N04KWZEIU	4 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KWTBIU	4 Gb	104	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KWZEJU	4 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N04KWTBJU	4 Gb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KWZEIR	2 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KWTBIR	2 Gb	104	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KWZEJR	2 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KWTBJR	2 Gb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Buffer	-	2048	128	P
W25N02KWZEIU	2 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KWTBIU	2 Gb	104	-	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KWZEJU	2 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N02KWTBJU	2 Gb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	8	Sequential	Buffer	2048	128	C
W25N01KWZPIG	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	Continuous	2048	64	P
W25N01KWZEIG	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	Continuous	2048	64	P
W25N01KWZPIT	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Continuous	Buffer	2048	64	P
W25N01KWZEIT	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Continuous	Buffer	2048	64	P
W25N01KWZPIR	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	P
W25N01KWZEIR	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	P
W25N01KWZPIU	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	P
W25N01KWZEIU	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	P
W25N01KWZPIE	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	Sequential	2048	64	P
W25N01KWZEIE	1 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	Sequential	2048	64	P
W25N01KWZPJG	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	Continuous	2048	64	C
W25N01KWZEJG	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	Continuous	2048	64	C
W25N01KWZPJT	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	4	Continuous	Buffer	2048	64	C
W25N01KWZEJT	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Continuous	Buffer	2048	64	C
W25N01KWZPJR	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	C
W25N01KWZEJR	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	-	2048	64	C
W25N01KWZPJU	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	C
W25N01KWZEJU	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Sequential	Buffer	2048	64	C
W25N01KWZPJE	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	4	Buffer	Sequential	2048	64	C
W25N01KWZEJE	1 Gb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	4	Buffer	Sequential	2048	64	C

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Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25N-LW Series

It is designed to meet both general-purpose and high-performance application needs. It's feasible to smaller packing form, reducing manufacturing costs compared to the same memory density ONFI NAND Flash. It improves overall system performance and features Continuous Read, and Sequential Read mode functions that enhance code shadowing efficiency and boosts system performance with better read performance[1]. The density ranges up to 8Gb.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read
- Continuous read and Sequential read modes
- One Time Programmable (OTP) page
- -40~85°C operating temperature
- Die shrink for KGD segment, Mainstream Package Type
- Individual block protect[1]

Note: [1.] Only high performance QspiNAND.

Key Application:

Machine-to-Machine (M2M), Automation, Surveillance, GPON, xDSL, and Smart home.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N08LWZEIG	8 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	Continuous	4096	256	U Q3 2025
W25N04LWZEIG	4 Gb	104	-	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	8	Buffer	Continuous	4096	256	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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OctalNAND Flash

Read Throughput Achieves Up to 240MB/s

Winbond introduced the first OctalNAND Flash memories in the market, which achieved the highest speed in a serial interface NAND Flash memory. Operating at 1.8V, 1GB, 2Gb, and 4Gb densities are available and support an Octal Single Data Rate and a Dual Data Rate up to 240MB/s.

Manufactured using Winbond's proven 46nm NAND fabrication process, they are specified to perform 100,000 Program/Erase cycles and provide the high level of endurance and reliability required in mission-critical automotive and industrial applications which the boot code size is often bigger than 512 Mb.

Application

- Instrument cluster applications, Advanced driver assistance systems
- Devices that need fast OTA (Firmware update over the air), including industry, automation, smart home, smart energy, IoT, smart watch, automotive applications.

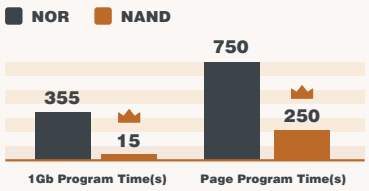
OctalNAND Benefits

Faster

Read Throughput
240MB/s

8 I/O Interface

Program & Erase Time
Saving 96%



Easier Replacement

No Need PCB Re-layout

Hardware Compatible

W35N-JW Series

It is the world's first x8 Octal interface for NAND Flash, which enables automotive and industrial manufacturers to provide code storage in higher density without paying a premium than NOR Flash. It provides a maximum Continuous read throughput of 240MB/s, which is three times faster than the earlier high-performance W25N-JW Quad Serial NAND Flash. It can also erase up to 400 times faster and program up to 50 times faster than serial NOR Flash, making it suitable for OTA applications.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- 105°C operating temperature
- Octal SPI with 166MHz SDR and 120MHz DDR
- Mainstream package type.

Key Application:

Cluster, car camera, ADAS, DSC, smart doorbell.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W35N04JWTBIF	4 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N04JWTBJF	4 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N04JWTBIC	4 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N04JWTBJC	4 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N02JWTBIF	2 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N02JWTBJF	2 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N02JWTBIC	2 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N02JWTBJC	2 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N01JWTBIG	1 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N01JWTBIT	1 Gb	166	120	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N01JWTBJG	1 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N01JWTBJT	1 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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SLC NAND Flash

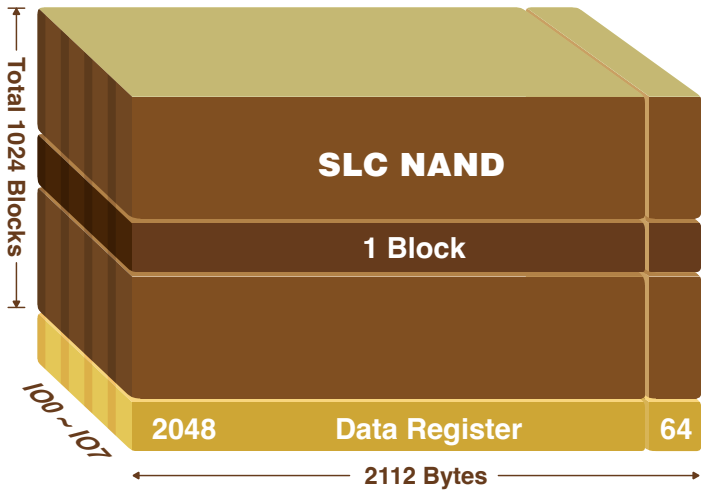
Gigabit Code Storage Solution for High-density Applications

With densities ranging from 1Gb to 8Gb, Winbond's SLC NAND Flash memories follow the industry standard for command sets, interfaces, and packages. They are compliant with ONFI 1.0 and are available in various temperature ratings. To meet the strict requirements of embedded applications, industrial and automotive grades are offered, with temperature ratings of up to 115°C.

Winbond's SLC NAND Flash memories offer two different versions, one requiring 1bit or 4bit ECC and the other requiring 4bit or 8bit ECC. They allow customers to choose the product that best meets their needs and preferences. Whether you are considering upgrading your current code storage system or exploring new options, they can address a variety of industrial, consumer, and automotive applications.

Application

- Automotive / Industrial
- Central Information Center
- Vehicle-To-Everything (V2X)
- Point of Sale (POS), Automation
- Networking, XDSL, Passive Optical Network (PON)
- Machine-to-Machine (M2M) Module, Surveillance
- Printer, Digital Camera
- Set-Top Box (STB)
- IoT



1 page = 2048 + 64 Bytes

1 Block = 64 pages
1 Block = (128K + 4K) Bytes

1 Device = 1024 Blocks
1 Device = (128M + 4M) Bytes

Note: Regarding the page size of each part number, please refer to the tables below.

W29N-GV/HV/KV Series

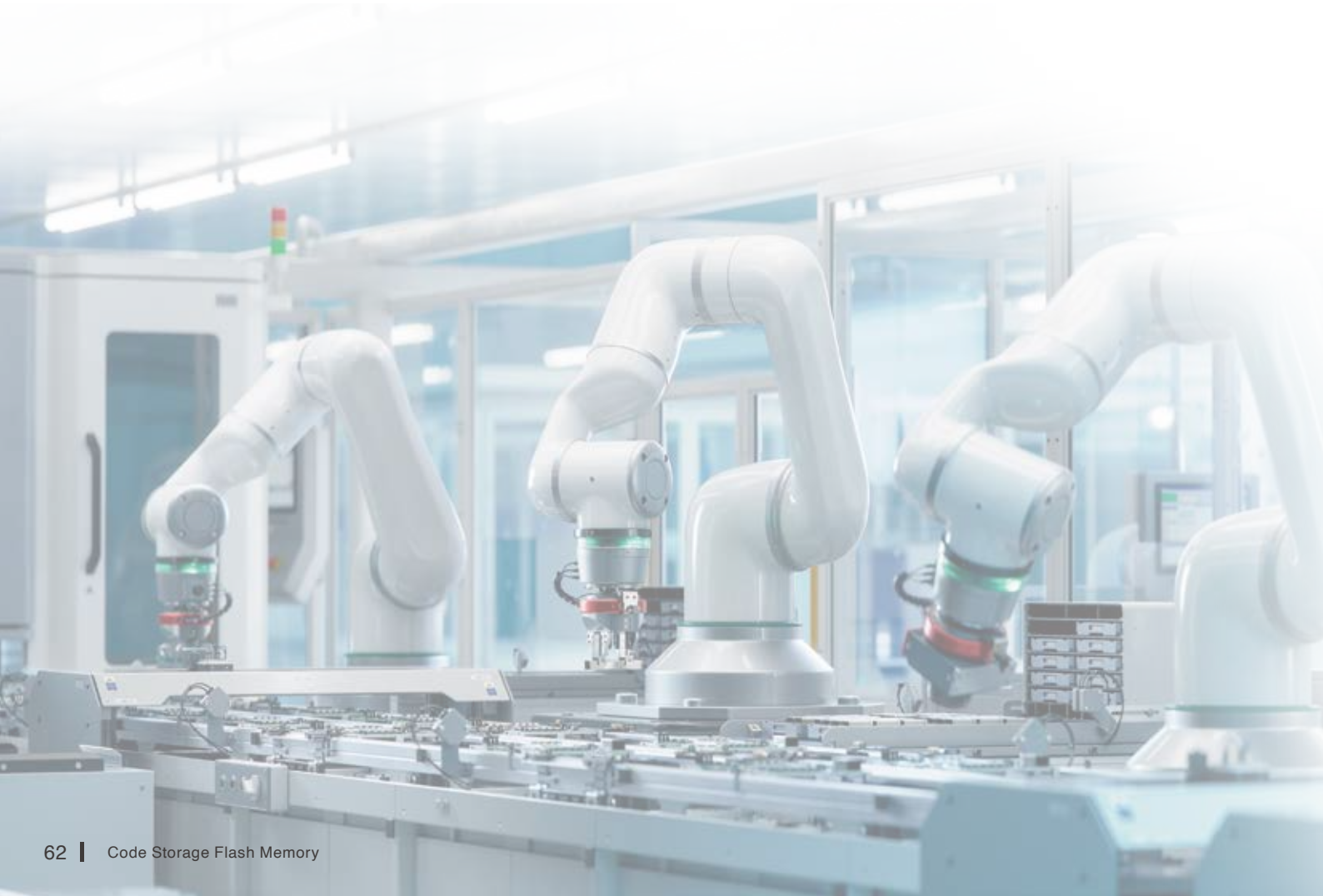
It is designed to provide reliable code storage solutions. It delivers high-quality performance to meet the demands of applications requiring high reliability. Additionally, it supports the standard NAND Flash memory interface by utilizing a multiplexed 8-bit bus for transferring data, addresses, and command instructions.

Key Feature:

- Fully ONFI 1.0 Compliant
- Support applications with 1bit, 4bit, or 8bit ECC algorithm
- Longevity support

Key Application:

Automation, Point of Sale (POS), Switch, Consumer and networking applications, Gigabit Passive Optical Network (GPON), xDSL, Smart home, Set Top Box (STB) and Surveillance.



W29N-GV Series

It supports 1bit/4bit ECC, x8 Bus Width, 25us random read, 250us(typ.) page program time, 2ms(typ.) block erase time, OTP memory area. It is suitable for V2X, car camera, infotainment, surveillance, point of sale (POS), switch, gigabit passive optical network (GPON), xDSL, smart home, and set top box (STB).

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N08GVSIAA	8 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	1	Copy Back, OTP	2048	64	P
W29N08GVBIAA	8 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	1	Copy Back, OTP	2048	64	P
W29N08GVSJAA	8 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	1	Copy Back, OTP	2048	64	P
W29N08GVBJAA	8 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	1	Copy Back, OTP	2048	64	P
W29N08GVSIAF	8 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N08GVBIAF	8 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N08GVSJAF	8 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N08GVBJAF	8 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N04GVSIAA	4 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	1	Copy Back, OTP	2048	64	P
W29N04GVBIAA	4 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	1	Copy Back, OTP	2048	64	P
W29N04GVSIAF	4 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N04GVBIAF	4 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N04GVSJAA	4 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	1	Copy Back, OTP	2048	64	P
W29N04GVBJAA	4 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	1	Copy Back, OTP	2048	64	P
W29N04GVSJAF	4 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N04GVBJAF	4 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N02GVSIAA	2 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	1	Copy Back, OTP	2048	64	P
W29N02GVBIAA	2 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	1	Copy Back, OTP	2048	64	P
W29N02GVSIAF	2 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N02GVBIAF	2 Gb	2.7	3.6	-40	85	BGA-48	6.5x8	8	4	Copy Back, OTP	2048	64	P
W29N02GVSJAF	2 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N02GVBJAF	2 Gb	2.7	3.6	-40	105	BGA-48	6.5x8	8	4	Copy Back, OTP	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W29N-HV Series

It supports 4bit ECC required, copy back, small packing form VFBGA48, automotive grade, sequential read cycle: 25ns, and copy back.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N01HVSINA	1 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N01HVDINA	1 Gb	2.7	3.6	-40	85	BGA-48	6.5x8	8	1	Copy Back	2048	64	P
W29N01HVBINA	1 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N01HVSINF	1 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N01HVDINF	1 Gb	2.7	3.6	-40	85	BGA-48	6.5x8	8	4	Copy Back	2048	64	P
W29N01HVBINF	1 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N01HVSJNF	1 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N01HVDJNF	1 Gb	2.7	3.6	-40	105	BGA-48	6.5x8	8	4	Copy Back	2048	64	P
W29N01HVBJNF	1 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P

W29N-KV Series

It supports 4bit/8bit ECC, x8 Bus Width, 25us Random Read, 250us (typ.) Page Program Time, 2ms (typ.) Block Erase Time, OTP Memory Area. It is suitable for Optical Network (GPON), XDSL, Multi-Function Printer, Surveillance, Instrument, Smart Energy, and Smart home.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N02KVSIAE	2 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	8	Copy Back, OTP	2048	64	P
W29N02KVSIAF	2 Gb	2.7	3.6	-40	85	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N02KVSJAE	2 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	8	Copy Back, OTP	2048	64	P
W29N02KVDIAF	2 Gb	2.7	3.6	-40	85	BGA-48	6.5x8	8	4	Copy Back, OTP	2048	64	P
W29N02KVBIAE	2 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	8	Copy Back, OTP	2048	64	P
W29N02KVBIAF	2 Gb	2.7	3.6	-40	85	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W29N-HZ/GZ/LZ Series

It offers robust quality performance to fulfill high reliability demanding applications and supports the standard NAND flash memory interface by using the multiplexed 8-bit bus to transfer data, addresses, and command instructions. W29N-LZ provides an efficient storage solution for embedded systems with limited space and pin count. It supports the standard NAND Flash interface with x8 and x16 bus widths for data transfer.

Key Feature:

- ONFI 1.0 compliant
- Support applications with 1bit/4bit/8bit ECC

Key Application:

Industrial applications, Automation, Point of Sale (POS), Wearable, Consumer and networking applications, Gigabit Passive Optical Network (GPON), xDSL, Smart home, Set Top Box (STB), and Surveillance.

W29N-HZ Series

It supports VFBGA-48, 1bit / 4bit ECC requirement, Automotive grade, and 1 plan operation. It is suitable for infotainment, cluster, VEDR, V2X (Vehicle to Everything), automation, POS (Point of Sale), wearable, GPON, xDSL, Smart-Home, STB (Set Top Box) and Surveillance.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N01HZDINA	1 Gb	1.7	1.95	-40	85	BGA-48	6.5x8	8	1	Copy Back	2048	64	P
W29N01HZBINA	1 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N01HZSINF	1 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N01HZBINF	1 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W29N-GZ Series

It supports 1bit/4bit ECC requirement, x8 Bus Width, 25us Random Read, 250us (typ.) Page Program Time, 2ms (typ.) Block Erase Time, OTP Memory Area, Page size 2112 bytes, 2 plan operation. It is suitable for Point of Sale (POS), Wearable, Gigabit Passive Optical Network (GPON), xDSL, Set Top Box (STB), and Surveillance.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N08GZSIBA	8 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N08GZBIBA	8 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N08GZSIBF	8 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N08GZBIBF	8 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N08GZSJBA	8 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N08GZBJBA	8 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N08GZSJBF	8 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N08GZBJBF	8 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N04GZSIBA	4 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N04GZBIBA	4 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N04GZSIBF	4 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N04GZBIBF	4 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N04GZSJBA	4 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N04GZBJBA	4 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N04GZSJBF	4 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N04GZBJBF	4 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N02GZSIBA	2 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	1	Copy Back	2048	64	P
W29N02GZBIBA	2 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N02GZSIBF	2 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N02GZBIBF	2 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N02GZBJBF	2 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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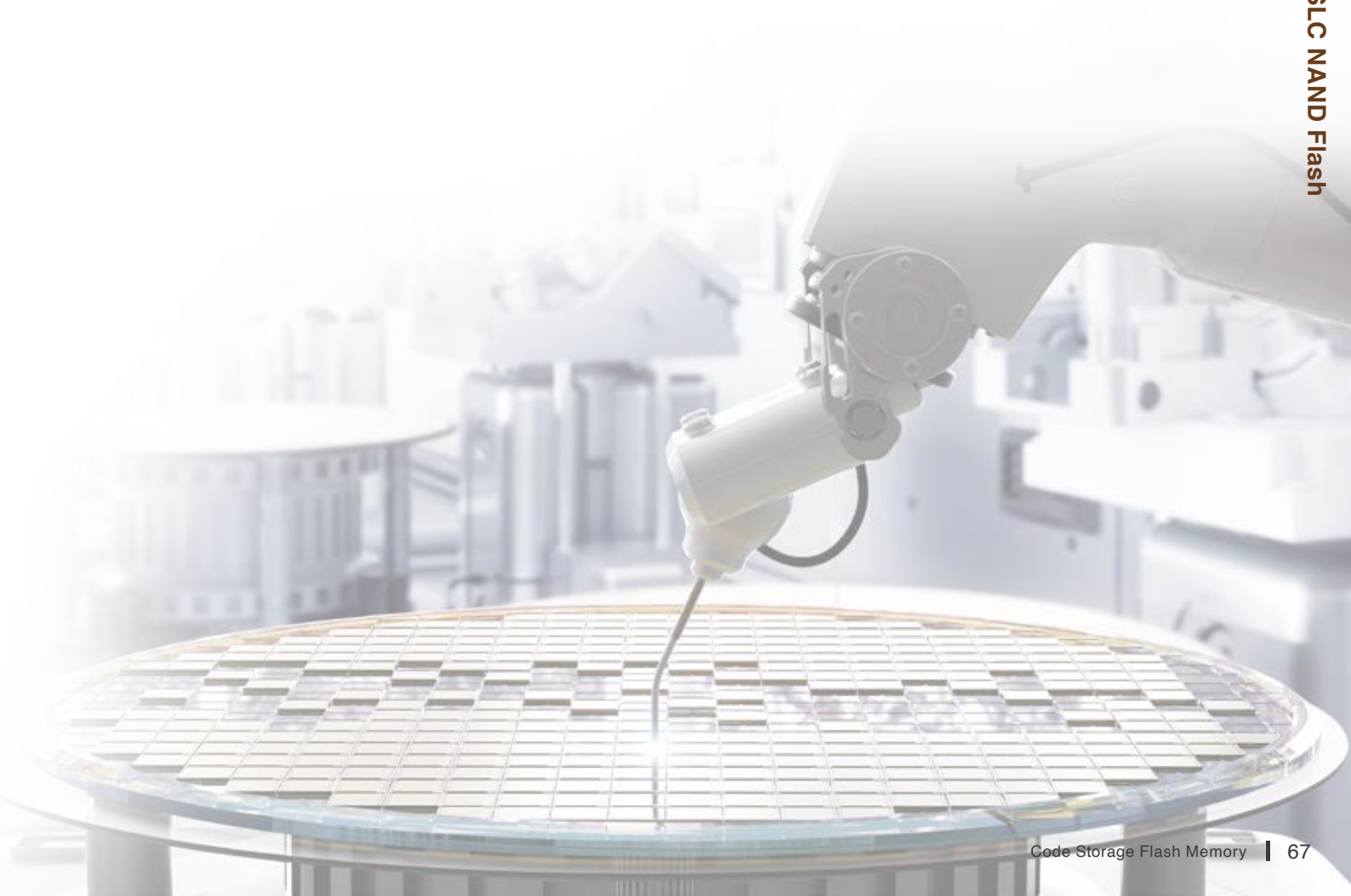
W29N-LZ Series

It supports Page Size 4KByte+256byte, 8bit ECC requirement, 4Gb-8Gb (Stack die), Copy Back, Block LOCK, OPT Memory Area, 1 plan operation, and 60K/100K P/E endurance. It is suitable for Smart speaker, MCP (ONFI NAND + LPDDR4x by 4+4/8+8 configurations) targets on M2M, 5G CPE and FWA.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N04LZSIBG	4 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	8	Copy Back, OTP	4096	256	U Q3 2025
W29N04LZBIBG	4 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	8	Copy Back, OTP	4096	256	U Q3 2025
W29N08LZSIBG	4 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	8	Copy Back, OTP	4096	256	U Q3 2025
W29N08LZBIBG	4 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	8	Copy Back, OTP	4096	256	U Q3 2025
W29N08LZSJBG	4 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	8	Copy Back, OTP	4096	256	U Q4 2025
W29N08LZBJBG	4 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	8	Copy Back, OTP	4096	256	U Q4 2025
W29N04LZSJBG	4 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	8	Copy Back, OTP	4096	256	U Q4 2025
W29N04LZBJBG	4 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	8	Copy Back, OTP	4096	256	U Q4 2025

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.



SpiStack® Flash

Ideal OTA Solution for Concurrent Operation

The SpiStack® memories are innovative solutions specifically designed for code storage applications that combine multiple dies within a single IC package. Each die can operate independently and be individually addressable.
This solution allows the system to read from one die while erasing or programming another, or multiple dies can be programmed or erased simultaneously. These concurrent operations mean the SpiStack® memories can support Read operations for Execute-in-Place (XIP) while they are being erased. During initial programming or code updates, all dies can be erased and programmed simultaneously, greatly improving manufacturing throughput.

It is an ideal product for Firmware Over-The-Air (FOTA) updates. With a range of NOR and NAND density combinations available in popular SPI packages, SpiStack® memories can be adopted in diverse application scenarios and use cases while achieving a high level of system-level performance.

W25M SpiStack® Family

- Provides various memory types, voltages, and density configurations to fulfill customer requirements.
- Supports the popular Serial Peripheral Interface (SPI).
- backward compatible with existing SpiFlash memories.

Homogeneous stacking - two or more dies

- NOR Flash die can be stacked for higher density requirements and automotive applications.
- NAND Flash die can be stacked for higher density and faster Program/Erase requirements.

Heterogeneous stacking - two or more dies

- NOR and NAND Flash can be stacked together to combine the familiarity and ease-of-use of boot from NOR Flash and the data storage capacity of NAND Flash.

Concurrent Operation

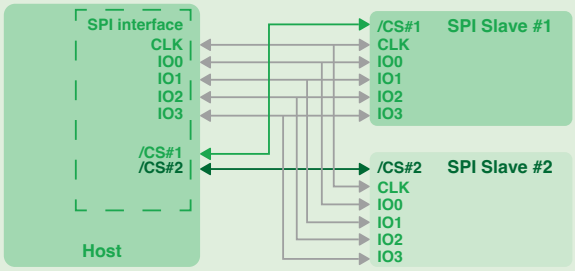
- Read while write/program operation is available.
- Write while write operation is available.
- Code execution (XIP) is not interrupted while Programming/Erasing

Application

- Smart home, Musical instruments, Human Machine Interface (HMI).
- Servers, 5G, WiFi, Surveillance, Switch.
- Field Programmable Gate Array (FPGA), Advanced driver assistance systems, Vehicle-to-everything, Gateway, Infotainment, Cluster.

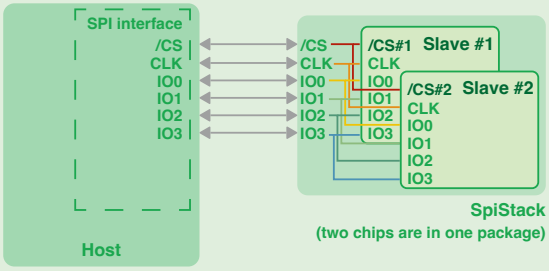
Save Space On PCB Area:

General Solution of connection:
Each / CS pin needs one isolated connection.



Winbond SpiStack Solution:

Host and slave /CS pins are connected directly and select slave IC#1 / #2 by C2h command.



General Solution on PCB:
Need to reserve two pcakages' area on PCB.

Winbond SpiStack Solution on PCB:

Only need one package area on PCB, user could control selected IC by C2h command.

W25M-AV Series

The configuration is 3V 32Mb Qspi NOR + 3V 1Gb Qspi NAND and supports Software Die Select instruction by C2h command. It supports high performance SPI NAND 104MHz/ NOR 133MHz Standard/Dual/Quad SPI clocks, Flexible Concurrent Operations: allow to operate by “Read while Program/Erase” and “Multi Die Program/Erase”, Built-in 1-bit ECC for NAND memory array, 50MB/s continuous data transfer rate, and page size is 2048+64 bytes.

Key Feature:

- Bad Block Management Lookup Table (BBM LUT) on NAND flash
- Buffer Read and Continuous Read modes

Applications:

Smart Home, Musical instruments, Game, HMI, Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, Cluster.

Part No.	Memory Configuration	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	NAND On-Chip ECC (bit)	Concurrent Operation	Default Read Mode	Read Switchable to	NAND Page Size (Byte)	NAND Spare Area (Byte)	Boot	Mass Production	Note
W25M321AVEIT	32Mb NOR +1Gb NAND	NOR 133 & NAND 104	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Yes	Continuous	Buffer	2048	64	128Mb NOR	P	C2h, Default BUF=0, ECC=1

Remark 1 : C2h means access die ID is assigned in SpiStack by C2h command.

Remark 2 : The default and switchable read modes could be identified by the suffix of part number. Please refer to datasheet for details.

Remark 3 : Default BUF=0, ECC=1 or Default BUF=1, ECC=1 means QspiNAND Flash’s Buffer or Continuous Read mode could be set by BUF=1 or 0 with on chip ECC enabled.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25M-AW Series

The configuration is 1.8V 32Mb Qspi NOR + 1.8V 1Gb Qspi NAND and supports Software Die Select instruction by C2h command. It supports SPI NAND 104MHz/ NOR 133MHz Standard/Dual/Quad SPI clocks. Flexible Concurrent Operations: allow to operate by “Read while Program/Erase” and “Multi Die Program/Erase”, Built-in 1-bit ECC for NAND memory array, 40MB/s continuous data transfer rate, and page size is 2048+64 bytes.

Key Feature:

- Bad Block Management Lookup Table (BBM LUT) on NAND flash, Buffer Read and Continuous Read modes.

Applications:

Smart Home, Musical instruments, Game, HMI, Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, and Cluster.

Part No.	Memory Configuration	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	NAND On-Chip ECC (bit)	Concurrent Operation	Default Read Mode	Read Switchable to	NAND Page Size (Byte)	NAND Spare Area (Byte)	Boot	Mass Production	Note
W25M321AWEIT	32Mb NOR +1Gb NAND	NOR 133 & NAND 104	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	1	Yes	Continuous	Buffer	2048	64	128Mb NOR	P	C2h, Default BUF=0, ECC=1

Remark 1 : C2h means access die ID is assigned in SpiStack by C2h command.

Remark 2 : The default and switchable read modes could be identified by the suffix of part number. Please refer to datasheet for details.

Remark 3 : Default BUF=0, ECC=1 or Default BUF=1, ECC=1 means QspiNAND Flash’s Buffer or Continuous Read mode could be set by BUF=1 or 0 with on chip ECC enabled.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25M-JV/JW Series

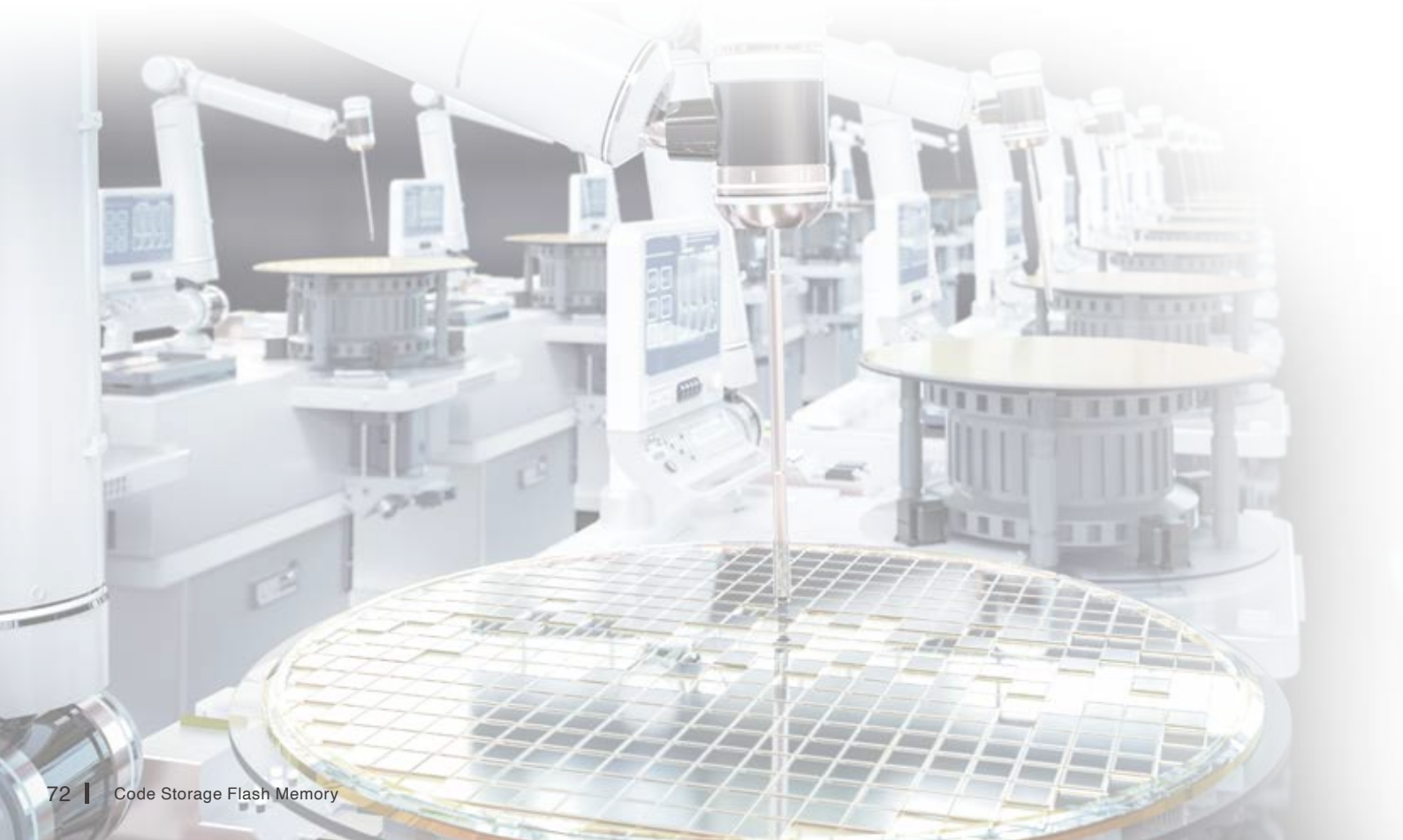
The W25M-JV/JW are homogeneous flash type SpiStack®. W25M-JV is two 3V 256Mb Serial NOR flash stacking in a single IC package. W25M-JW is two 1.8V 256Mb Serial NOR flash stacking in a single IC package. Each die can operate independently and is individually addressable. It allows the system to execute Read operation on one die and Program or Erase operation on another die, the code execution won't be interrupted during data update.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Continuous read mode
- One Time Programmable page (OTP)
- Mainstream package type
- Industrial Grade and Automotive Grade 1

Key Application:

Smart home, Industry, Automation, Musical Instruments, Human Machine Interface (HMI).



W25M-JV Series

It is 3V 256Mb SPI NOR + 3V 256Mb SPI NOR, supports One Time Programmable page (OTP), Simultaneous Operation, 3 or 4-Byte Addressing modes, Individual Block/Sector Write Protection and Volatile and Non-Volatile Status Registers. It is suitable for Musical instruments, POS, Handheld, Surveillance and Car-ETC.

Part No.	Memory Configuration	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	NAND On-Chip ECC (bit)	Concurrent Operation	Default Read Mode	Read Switchable to	NAND Page Size (Byte)	NAND Spare Area (Byte)	Boot	Mass Production	Note
W25M512JVFIQ	256Mb NOR+256Mb NOR	104	2.7	3.6	-40	85	SOIC-16	300 mil	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	P	C2h
W25M512JVEIQ	256Mb NOR+256Mb NOR	104	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	P	C2h
W25M512JVBIQ	256Mb NOR+256Mb NOR	104	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	P	C2h
W25M512JVCIQ	256Mb NOR+256Mb NOR	104	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	C	C2h

W25M-JW Series

It is 1.8V 256Mb SPI NOR + 1.8V 256Mb SPI NOR, and supports One Time Programmable Page (OTP), Simultaneous Operation, 3 or 4-Byte Addressing modes, Individual Block/Sector Write Protection and Volatile and Non-Volatile Status Registers. It is suitable for Musical instruments, POS, Handheld, Surveillance.

Part No.	Memory Configuration	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	NAND On-Chip ECC (bit)	Concurrent Operation	Default Read Mode	Read Switchable to	NAND Page Size (Byte)	NAND Spare Area (Byte)	Boot	Mass Production	Note
W25M512JWFIQ	256Mb NOR+256Mb NOR	104	1.7	1.95	-40	85	SOIC-16	300 mil	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	C	C2h
W25M512JWEIQ	256Mb NOR+256Mb NOR	104	1.7	1.95	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	C	C2h
W25M512JWBIQ	256Mb NOR+256Mb NOR	104	1.7	1.95	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	Yes	-	-	-	-	256Mb NOR	C	C2h

Remark 1 : C2h means access die ID is assigned in SpiStack by C2h command.

Remark 2 : The default and switchable read modes could be identified by the suffix of part number. Please refer to datasheet for details.

Remark 3 : Default BUF=0, ECC=1 or Default BUF=1, ECC=1 means QspiNAND Flash's Buffer or Continuous Read mode could be set by BUF=1 or 0 with on chip ECC enabled.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25M-GV Series

It is 3V 1Gb SPI NAND + 3V SPI 1Gb NAND, and supports Software Die Select instruction (C2h), High performance SPI NAND 104MHz Standard/Dual/Quad SPI clocks, Built-in 1bit ECC for NAND memory array, Flexible Concurrent Operations: allow “Read while Program/Erase” and “Multi Die Program/Erase”, Page size 2112 bytes, 50MB/s continuous data transfer rate, Automotive grade.

Key Feature:

- Bad Block Management Lookup Table (BBM LUT) on NAND flash
- Buffer Read and Continuous Read modes
- Industrial Grade and Automotive Grade 2

Key Application:

Smart Home, Musical instruments, Game, HMI, Server, 5G, WiFi, Surveillance Camera, Switch, FPGA, ADAS, V2X, Gateway, Infotainment, Cluster, and Automotive.

Part No.	Memory Configuration	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	NAND On-Chip ECC (bit)	Concurrent Operation	Default Read Mode	Read Switchable to	NAND Page Size (Byte)	NAND Spare Area (Byte)	Boot	Mass Production	Note
W25M02GVZEJG	1Gb NAND+1Gb NAND	104	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	Yes	Buffer	Continuous	2048	64	-	P	C2h
W25M02GVSFIG	1Gb NAND+1Gb NAND	104	2.7	3.6	-40	85	SOIC-16	300 mil	SPI/Dual/Quad	-	Yes	Buffer	Continuous	2048	64	-	P	C2h
W25M02GVZEIG	1Gb NAND+1Gb NAND	104	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	-	Yes	Buffer	Continuous	2048	64	-	P	C2h
W25M02GVTBIG	1Gb NAND+1Gb NAND	104	2.7	3.6	-40	85	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	Yes	Buffer	Continuous	2048	64	-	C	C2h
W25M02GVTCIG	1Gb NAND+1Gb NAND	104	2.7	3.6	-40	85	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	Yes	Buffer	Continuous	2048	64	-	C	C2h

Remark 1 : C2h means access die ID is assigned in SpiStack by C2h command.

Remark 2 : The default and switchable read modes could be identified by the suffix of part number. Please refer to datasheet for details.

Remark 3 : Default BUF=0, ECC=1 or Default BUF=1, ECC=1 means QspiNAND Flash’s Buffer or Continuous Read mode could be set by BUF=1 or 0 with on chip ECC enabled.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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NAND Based MCP

A Space-efficient Solution with SLC NAND and LPDDR Memories

Winbond's Multi-Chip Package (MCP) memories integrate 1.8V SLC NAND Flash memories with a 1.8/1.2V LPDDR2 or a 1.8/1.1/0.6V LPDDR4x within a single package. This configuration provides a highly efficient solution for conserving space on Printed Circuit Boards (PCBs).

It offers several advantages, including space savings, reduced power consumption, and simplified circuit design, resulting in more compact and efficient devices. Additionally, it also enhances performance by lowering data transfer latency between chips. These benefits make Winbond's NAND based MCP an ideal choice for high-integration applications.

Application:

- Machine-to-Machine (M2M), 5G customer premise equipment, Fixed wireless access.

W71N Series

W71N consists of 1.8V ONFI NAND Flash memories combined with a Low Power SDRAM in one package to provide the most space effective solution for saving area on Printed Circuit Boards (PCBs).

One of the benefits of NAND Flash memories is their non-volatile storage of data; they retain data even when the power is off. This benefit becomes more critical in small PCBs for modules and space-critical designs, particularly in mobile and portable applications.

Key Feature:

- Mainstream package type
- Configurations: ONFI NAND 4Gb x8/x16 + LPDDR4x 4Gb x16, ONFI NAND 8Gb x8/x16 + LPDDR4x 8Gb x16

Key Application:

Machine-to-Machine (M2M), Customer Premise Equipment (CPE), Fixed Wireless Access (FWA).

Part No.	Flash Density	DRAM Density	Flash I/O Bus	DRAM I/O Bus	DRAM Type	Flash STR Frequency (MHz)	DRAM STR Frequency (MHz)	Flash Operating Voltage (min) (V)	Flash Operating Voltage (max) (V)	DRAM Operating Voltage VDD1 (min) (V)	DRAM Operating Voltage VDD1 (max) (V)	DRAM Operating Voltage VDD2 (min) (V)	DRAM Operating Voltage VDD2 (max) (V)	DRAM Operating Voltage VDDQ (min) (V)	DRAM Operating Voltage VDDQ (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	Interface Type	Concurrent Operation	Page Size (Byte)	Spare Area (Byte)	Mass Production
W71N88AALRNI	8 Gb	8 Gb	8	16	LPDDR4x	-	1866/ 2133	1.7	1.95	1.7	1.95	1.06	1.17	0.57	0.65	-40	85	VFBGA-149	8x9.5	ONFI & LPDDR4x	No	4096	256	U Q2 2025
W71N44AALRNI	4 Gb	4 Gb	8	16	LPDDR4x	-	1866/ 2133	1.7	1.95	1.7	1.95	1.06	1.17	0.57	0.65	-40	85	VFBGA-149	8x9.5	ONFI & LPDDR4x	No	4096	256	U Q1 2025
W71NW10HM3FW	1 Gb	1 Gb	8	32	LPDDR2	-	400	1.7	1.95	1.7	1.95	1.14	1.3	1.14	1.3	-40	85	VFBGA-162	8x10.5	ONFI & LPDDR2	No	2048	64	P
W71NW10HE3FW	1 Gb	512 Mb	8	32	LPDDR2	-	400	1.7	1.95	1.7	1.95	1.14	1.3	1.14	1.3	-40	85	VFBGA-162	8x10.5	ONFI & LPDDR2	No	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

Automotive

Winbond's AEC-Q100 Qualified Memories Tailored to Automotive Applications

With its own ISO 16949 certified fab, Winbond demonstrated its dedication to upholding high-quality standards for its products. This commitment is particularly crucial for the automotive industry where product innovation and longevity support are paramount for ensuring reliable performance over extended periods. Winbond offers outstanding Flash memories specifically designed for the automotive industry. NOR Flash memories feature multi-I/O and the standard Serial Peripheral Interface (SPI) capabilities. Ranging from 2Mb to 2Gb, these memories enable fast transfer rates at a frequency up to 133MHz. They enable application processors to execute code directly from the SPI interface or speed up boot times by shadowing code to RAM.

NAND Flash memories are available in sizes ranging from 512Mb to 8Gb and can operate at ambient temperatures of -40°C to 115°C. The ONFI NAND families are fully industry standard and can be directly used as a drop-in replacement of existing flash. QspiNAND Flash achieves a data throughput rate of up to 80MB/s, while OctalNAND Flash memories offer a maximum Continuous Read throughput of 240MB/s and can perform 100,000 Program/Erase cycles. These NOR and NAND Flash memories can meet various requirements for automotive applications and are excellent choices for those seeking reliable and high-performing solutions.

	Automotive Grade 2	Automotive Grade 1
Temperature Range	-40°C~105°C	-40°C~125°C
Part # Example	W25Q64JVSSAQ	W25Q64JVSSSQ
AEC-Q100 Compliant	Yes	Yes
Change Control (PPAP)	Available	Available

Applications

- Advanced Driver Assist Systems (ADAS)
- Driver Monitoring Systems (DMS)
- Infotainment
- Integrated smart cockpit systems

W25H-JV/ W25Q-JV/ W25Q-RV Series

It provides a storage solution for systems with limited space, pins and power. It not only offers exceptional flexibility and performance, but also ensures reliable quality for all your code storage requirements. It is ideal for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP) and storing voice, text and data. It operates on a single 3.0V power supply with current consumption as low as 1μA for power-down. It is offered in space-saving packages.

Key Feature:

- Execute in Place (XIP)
- One Time Programmable (OTP)
- Automotive Grade (AG)
- 125°C operating temperature
- AEC-Q100

Key Application:

Domain, Zonal, Cluster, and Automotive

W25H-JV Series

It supports built-in ECC, SED, DED, /INT, and /RSTO. The series operates on a single 3.0V power supply with current consumption as low as 1μA for power-down.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25H02JVTBAM	2 Gb	133	80	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H02JVTBSM	2 Gb	133	80	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01JVSFAM	1 Gb	133	80	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H01JVZEAM	1 Gb	133	80	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01JVTBAM	1 Gb	133	80	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01JVSFSM	1 Gb	133	80	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H01JVZESM	1 Gb	133	80	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01JVTBSM	1 Gb	133	80	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512JVFAM	512 Mb	133	80	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H512JVEAM	512 Mb	133	80	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512JVBAM	512 Mb	133	80	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512JVFSM	512 Mb	133	80	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H512JVESM	512 Mb	133	80	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512JVBSM	512 Mb	133	80	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H256JVFAM	256 Mb	104	80	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H256JVEAM	256 Mb	104	80	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H256JVBAM	256 Mb	104	80	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H256JVFSM	256 Mb	104	80	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H256JVESM	256 Mb	104	80	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H256JVBSM	256 Mb	104	80	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25Q-JV Series

It provides a storage solution for systems with limited space, pins, and power, offering exceptional flexibility and performance and ensuring reliable quality. It is ideal for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP) and storing voice, text, and data. The device operates on a single 3.0V power supply with current consumption as low as 1μA for power-down.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q256JVFAQ	256 Mb	104	-	2.7	3.6	-40	105	SOP-8	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEAQ	256 Mb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBAQ	256 Mb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCAQ	256 Mb	104	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFSQ	256 Mb	104	-	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVESQ	256 Mb	104	-	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBSQ	256 Mb	104	-	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCSQ	256 Mb	104	-	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFAM	256 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVEAM	256 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBAM	256 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCAM	256 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVFSM	256 Mb	133	66	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JVESM	256 Mb	133	66	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVBSM	256 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JVCSM	256 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSAQ	128 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFAQ	128 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPAQ	128 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEAQ	128 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBAQ	128 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCAQ	128 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSSQ	128 Mb	133	-	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFSQ	128 Mb	133	-	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPSQ	128 Mb	133	-	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q128JVESQ	128 Mb	133	-	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBSQ	128 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCSQ	128 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSAM	128 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFAM	128 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPAM	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVEAM	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBAM	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCAM	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVSSM	128 Mb	133	66	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVFSM	128 Mb	133	66	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JVPSM	128 Mb	133	66	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVESM	128 Mb	133	66	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVBSM	128 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JVCSM	128 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSAQ	64 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFAQ	64 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPAQ	64 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZEAQ	64 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGAQ	64 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTBAQ	64 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTCAQ	64 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSSQ	64 Mb	133	-	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFSQ	64 Mb	133	-	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPSQ	64 Mb	133	-	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZESQ	64 Mb	133	-	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGSQ	64 Mb	133	-	2.7	3.6	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTBSQ	64 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVTCSQ	64 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSAM	64 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFAM	64 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPAM	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q64JVZEAM	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGAM	64 Mb	133	66	2.7	3.6	-40	105	XSON-8	4x4x0.5 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVSSSM	64 Mb	133	66	2.7	3.6	-40	125	SOP-8	208 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVSFSM	64 Mb	133	66	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JVZPSM	64 Mb	133	66	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVZESM	64 Mb	133	66	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JVXGSM	64 Mb	133	66	2.7	3.6	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNAQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSAQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFAQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-16	300 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPAQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVZEAQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUAQ	32 Mb	133	-	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGAQ	32 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBAQ	32 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTCAQ	32 Mb	133	-	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNSQ	32 Mb	133	-	2.7	3.6	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSSQ	32 Mb	133	-	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFSQ	32 Mb	133	-	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPSQ	32 Mb	133	-	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVZESQ	32 Mb	133	-	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUSQ	32 Mb	133	-	2.7	3.6	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGSQ	32 Mb	133	-	2.7	3.6	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBSQ	32 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTCSQ	32 Mb	133	-	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNAM	32 Mb	133	66	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSAM	32 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFAM	32 Mb	133	66	2.7	3.6	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPAM	32 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUAM	32 Mb	133	66	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGAM	32 Mb	133	66	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBAM	32 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q32JVTCAM	32 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVSNSM	32 Mb	133	66	2.7	3.6	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSSSM	32 Mb	133	66	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVSFSM	32 Mb	133	66	2.7	3.6	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JVZPSM	32 Mb	133	66	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVUUSM	32 Mb	133	66	2.7	3.6	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVXGSM	32 Mb	133	66	2.7	3.6	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTBSM	32 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JVTCSM	32 Mb	133	66	2.7	3.6	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNAQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSAQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPAQ	16 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXAQ	16 Mb	133	-	2.7	3.6	-40	105	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUAQ	16 Mb	133	-	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVXGAQ	16 Mb	133	-	2.7	3.6	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNSQ	16 Mb	133	-	2.7	3.6	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSSQ	16 Mb	133	-	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPSQ	16 Mb	133	-	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXSQ	16 Mb	133	-	2.7	3.6	-40	125	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUSQ	16 Mb	133	-	2.7	3.6	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVXGSQ	16 Mb	133	-	2.7	3.6	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNAM	16 Mb	133	66	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSAM	16 Mb	133	66	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPAM	16 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXAM	16 Mb	133	66	2.7	3.6	-40	105	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUAM	16 Mb	133	66	2.7	3.6	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVSNSM	16 Mb	133	66	2.7	3.6	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVSSSM	16 Mb	133	66	2.7	3.6	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JVZPSM	16 Mb	133	66	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUXSM	16 Mb	133	66	2.7	3.6	-40	125	USON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JVUUSM	16 Mb	133	66	2.7	3.6	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-

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W25Q-RV Series

It is a high-quality and high-performance NOR flash memory series, offering 133MHz STR and 84MHz DTR, utilizing Winbond's 58um 3V process. Ranging from 2Mb to 32Mb, it offers versatile solutions for diverse automotive implementations

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q32RVSNAQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSSAQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVZPAQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVXHAQ	32 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSNAM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSSAM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVXHAM	32 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVZPAM	32 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSNSQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSSSQ	32 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVZPSQ	32 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVXHSQ	32 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSNSM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVSSSM	32 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVXHSM	32 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q32RVZPSM	32 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSNAQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSSAQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVZPAQ	16 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVXHAQ	16 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSNAM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSSAM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVXHAM	16 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVZPAM	16 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSNSQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSSSQ	16 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVZPSQ	16 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q16RVXHSQ	16 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSNSM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVSSSM	16 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVXHSM	16 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q16RVZPSM	16 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSNAQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSSAQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVZPAQ	8 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVXHAQ	8 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSNAM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSSAM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVXHAM	8 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVZPAM	8 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSNSQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSSSQ	8 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVZPSQ	8 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVXHSQ	8 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSNSM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVSSSM	8 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVXHSM	8 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q80RVZPSM	8 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSNAQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSSAQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVZPAQ	4 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVXHAQ	4 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSNAM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSSAM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVZPAM	4 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVXHAM	4 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSNSQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSSSQ	4 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVZPSQ	4 Mb	133	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-RV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q40RVXHSQ	4 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSNSM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVSSSM	4 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVZPSM	4 Mb	133	84	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q40RVXHSM	4 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSNAQ	2 Mb	133	-	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSSAQ	2 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVXHAQ	2 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSNAM	2 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSSAM	2 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVXHAM	2 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSNSQ	2 Mb	133	-	2.7	3.6	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSSSQ	2 Mb	133	-	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVXHSQ	2 Mb	133	-	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSNSM	2 Mb	133	84	2.7	3.6	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVSSSM	2 Mb	133	84	2.7	3.6	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	U Q1 2025	-
W25Q20RVXHSM	2 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-

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W25H-NW / W25Q-EW/ W25Q-JW Series

It provides a storage solution for systems with limited space, pins, and power. It not only offers exceptional flexibility and performance, but also ensures reliable quality for all your code storage requirements. It is ideal for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP) and storing voice, text and data. It operates on a single 1.8V power supply with current consumption as low as 1μA for power-down. It is offered in space-saving packages.

Key Feature:

- Execute in Place (XIP)
- One Time Programmable (OTP)
- Automotive Grade (AG)
- 125°C operating temperature
- AEC-Q100

Key Application:

Domain, Zonal, Cluster, and Automotive

W25H-NW Series

It features built-in ECC, SED, DED, /INT, and /RSTO. The series supports 166MHz STR for instant boot and is suitable for laptops, BMC, and HMI.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25H02NWTBAM	2Gb	133	84	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	U	-
W25H02NWTBSM	2Gb	133	84	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	U	-
W25H01NWSFAM	1Gb	133	84	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H01NWZEAM	1Gb	133	84	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01NWTBAM	1Gb	133	84	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01NWSFSM	1Gb	133	84	1.7	1.95	-40	125	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H01NWZESM	1Gb	133	84	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H01NWTBSM	1Gb	133	84	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512NWFAM	512 Mb	133	84	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H512NWEAM	512 Mb	133	84	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512NWBAM	512 Mb	133	84	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512NWFSM	512 Mb	133	84	1.7	1.95	-40	125	SOP-16	300 mil	SPI/Dual/Quad	1	B	P	-
W25H512NWESM	512 Mb	133	84	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25H512NWBSM	512 Mb	133	84	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	B	P	-
W25Q20RVXHSM	2 Mb	133	84	2.7	3.6	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	U Q1 2025	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W25Q-EW Series

It supports QPI mode in low density for XIP and is suitable for GPS and AMOLED.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q81EWSNAQ	8 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q81EWSSAQ	8 Mb	104	-	1.65	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q81EWZPAQ	8 Mb	104	-	1.65	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q81EWXHAQ	8 Mb	104	-	1.65	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q81EWSNSQ	8 Mb	104	-	1.65	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q81EWSSSQ	8 Mb	104	-	1.65	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q81EWZPSQ	8 Mb	104	-	1.65	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q81EWXHSQ	8 Mb	104	-	1.65	1.95	-40	125	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWSNAG	4 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q41EWZPAG	4 Mb	104	-	1.65	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWUUAG	4 Mb	104	-	1.65	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWXHAG	4 Mb	104	-	1.65	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWSNSG	4 Mb	104	-	1.65	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q41EWZPSG	4 Mb	104	-	1.65	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWUUSG	4 Mb	104	-	1.65	1.95	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q41EWXHSG	4 Mb	104	-	1.65	1.95	-40	125	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q21EWSNAG	2 Mb	104	-	1.65	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q21EWXHAG	2 Mb	104	-	1.65	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q21EWSNSG	2 Mb	104	-	1.65	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q21EWXHSG	2 Mb	104	-	1.65	1.95	-40	125	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JW Series

It supports 66MHz DTR and QPI mode for XIP and is suitable for TWS and M2M modules.

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q256JWFAQ	256 Mb	104	-	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPAQ	256 Mb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWEAQ	256 Mb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBAQ	256 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWCAQ	256 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWFSQ	256 Mb	104	-	1.7	1.95	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPSQ	256 Mb	104	-	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWESQ	256 Mb	104	-	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBSQ	256 Mb	104	-	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWFAM	256 Mb	104	66	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPAM	256 Mb	104	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWEAM	256 Mb	104	66	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBAM	256 Mb	104	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWFSM	256 Mb	104	66	1.7	1.95	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q256JWPSM	256 Mb	104	66	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWESM	256 Mb	104	66	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q256JWBSM	256 Mb	104	66	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWSAQ	128 Mb	104	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFAQ	128 Mb	104	-	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPAQ	128 Mb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWEAQ	128 Mb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBAQ	128 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWSSQ	128 Mb	104	-	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFSQ	128 Mb	104	-	1.7	1.95	-40	125	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPSQ	128 Mb	104	-	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWESQ	128 Mb	104	-	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBSQ	128 Mb	104	-	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWSAM	128 Mb	104	52	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFAM	128 Mb	104	52	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q128JWPAM	128 Mb	104	52	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWEAM	128 Mb	104	52	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBAM	128 Mb	104	52	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWSSM	128 Mb	104	52	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWFSM	128 Mb	104	52	1.7	1.95	-40	105	SOP-16	300 mil	SPI/Dual/Quad	-	B	P	-
W25Q128JWPSM	128 Mb	104	52	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWESM	128 Mb	104	52	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q128JWBSM	128 Mb	104	52	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSAQ	64 Mb	104	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPAQ	64 Mb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZEAQ	64 Mb	104	-	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUAQ	64 Mb	104	-	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGAQ	64 Mb	104	-	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBAQ	64 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSSQ	64 Mb	104	-	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPSQ	64 Mb	104	-	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZESQ	64 Mb	104	-	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUSQ	64 Mb	104	-	1.7	1.95	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGSQ	64 Mb	104	-	1.7	1.95	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBSQ	64 Mb	104	-	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSAM	64 Mb	104	66	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPAM	64 Mb	104	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZEAM	64 Mb	104	66	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUAM	64 Mb	104	66	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGAM	64 Mb	104	66	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBAM	64 Mb	104	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWSSSM	64 Mb	104	66	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q64JWZPSM	64 Mb	104	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWZESM	64 Mb	104	66	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWUUSM	64 Mb	104	66	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWXGSM	64 Mb	104	66	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q64JWTBSM	64 Mb	104	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25Q-JW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q32JWSNAQ	32 Mb	104	-	1.7	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSAQ	32 Mb	104	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPAQ	32 Mb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUAQ	32 Mb	104	-	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGAQ	32 Mb	104	-	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBAQ	32 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCAQ	32 Mb	104	-	1.7	1.95	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNSQ	32 Mb	104	-	1.7	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSSQ	32 Mb	104	-	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPSQ	32 Mb	104	-	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUSQ	32 Mb	104	-	1.7	1.95	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGSQ	32 Mb	104	-	1.7	1.95	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBSQ	32 Mb	104	-	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCSQ	32 Mb	104	-	1.7	1.95	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNAM	32 Mb	104	66	1.7	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSAM	32 Mb	104	66	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPAM	32 Mb	104	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUAM	32 Mb	104	66	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGAM	32 Mb	104	66	1.7	1.95	-40	105	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBAM	32 Mb	104	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCAM	32 Mb	104	66	1.7	1.95	-40	105	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNSM	32 Mb	104	66	1.7	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSSM	32 Mb	104	66	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPSM	32 Mb	104	66	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWSNSM	32 Mb	104	66	1.7	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWSSSM	32 Mb	104	66	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q32JWZPSM	32 Mb	104	66	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWUUSM	32 Mb	104	66	1.7	1.95	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWXGSM	32 Mb	104	66	1.7	1.95	-40	125	XSON-8	4x4x0.5 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTBSM	32 Mb	104	66	1.7	1.95	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q32JWTCSM	32 Mb	104	66	1.7	1.95	-40	125	TFBGA-24 (6x4)	8x6 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNAQ	16 Mb	104	-	1.7	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production	Note
W25Q16JWSSAQ	16 Mb	104	-	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPAQ	16 Mb	104	-	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWUUAQ	16 Mb	104	-	1.7	1.95	-40	105	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHAQ	16 Mb	104	-	1.7	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNSQ	16 Mb	104	-	1.7	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSSQ	16 Mb	104	-	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPSQ	16 Mb	104	-	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWUUSQ	16 Mb	104	-	1.7	1.95	-40	125	USON-8	4x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHSQ	16 Mb	104	-	1.7	1.95	-40	125	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNAM	16 Mb	104	66	1.7	1.95	-40	105	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSAM	16 Mb	104	66	1.7	1.95	-40	105	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPAM	16 Mb	104	66	1.7	1.95	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHAM	16 Mb	104	66	1.7	1.95	-40	105	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWSNSM	16 Mb	104	66	1.7	1.95	-40	125	SOP-8	150 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWSSSM	16 Mb	104	66	1.7	1.95	-40	125	SOP-8	208 mil	SPI/Dual/Quad	-	B	P	-
W25Q16JWZPSM	16 Mb	104	66	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	-	B	P	-
W25Q16JWXHSM	16 Mb	104	66	1.7	1.95	-40	125	XSON-8	2x3 mm	SPI/Dual/Quad	-	B	P	-

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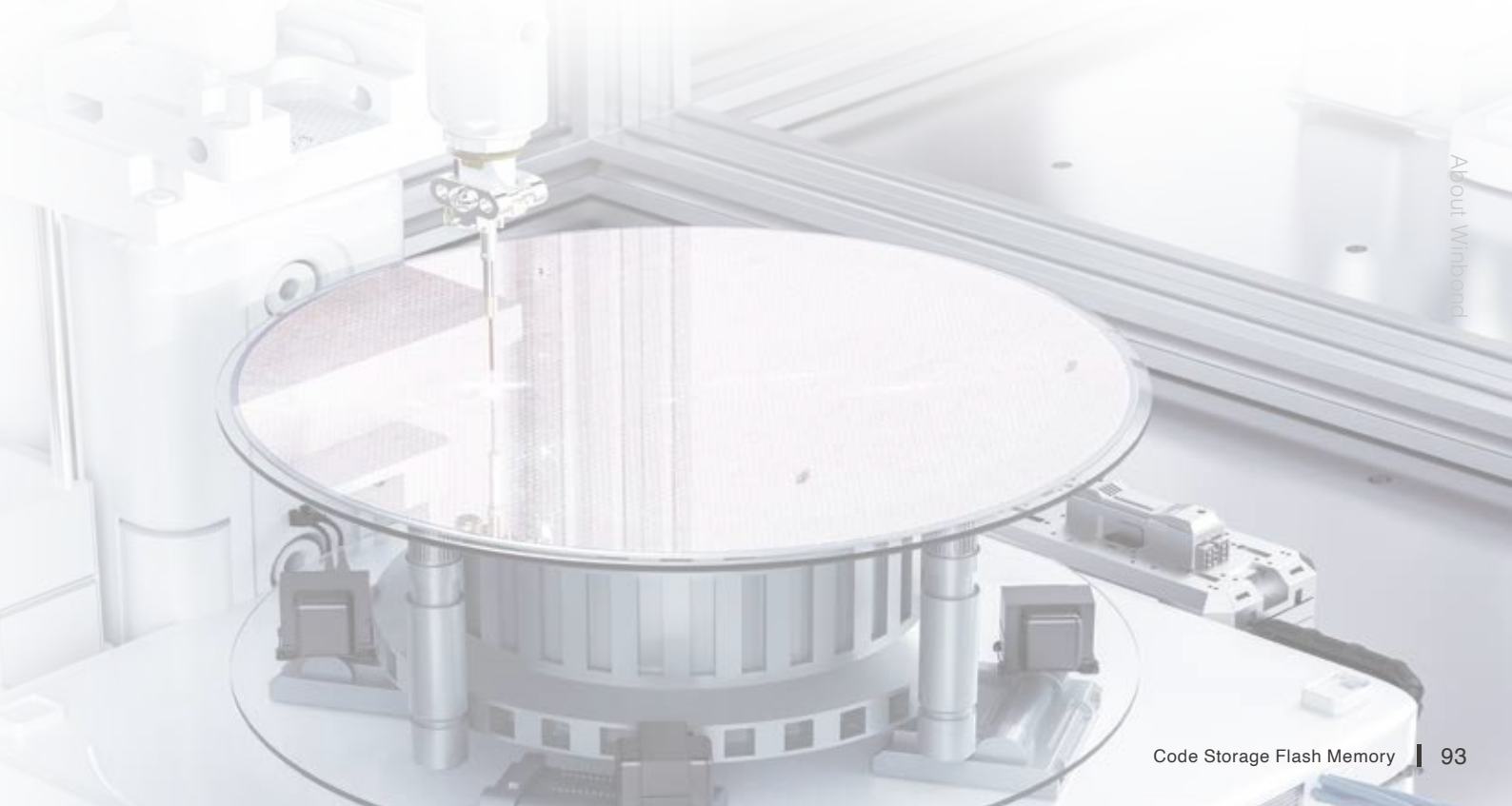

W74M Series

It comes with standard HMAC-SHA-256 crypto accelerator and 4 separate Monotonic Flash Counters that are HMAC-signed by individual secret keys. The system utilizing each Monotonic Flash Counter can not only verify the integrity and authenticity of the counter values, but also add a timestamp to the message/information transmitted with the resistance to reply to attacks. W74M enables system designers to strengthen code/data storage as well as delivers increased security for the emerging IoT demanding multi-layered authenticity.

Key Feature:

- One Time Programmable (OTP)
- Automotive Grade (AG)
- 125°C operating temperature
- AEC-Q100
- Deep power-down mode for low power consumption
- Replay Protection Monotonic Counter (RPMC)

Key Application:

Automotive

Part No.	Density	STR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production	Note
W74M01GVZEAG	1 Gb	104	2.7	3.6	-40	85	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, Authentication NAND Page Size 2048 Byte, Spare Area 64 Byte Default Read Mode-Buffer Read Switchable to Continuou On-Chip ECC 1 Bit
W74M25JVZESQ	256 Mb	133	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, Authentication
W74M25JVSFSQ	256 Mb	133	2.7	3.6	-40	125	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 50%, Authentication
W74M25JWZPSQ	256 Mb	104	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M25JWZESQ	256 Mb	104	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M25JWZFSQ	256 Mb	104	1.7	1.95	-40	125	SOP-16	300 Mil	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M12JVSSSQ	128 Mb	133	2.7	3.6	-40	125	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 50%, Authentication
W74M12JVZPSQ	128 Mb	133	2.7	3.6	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 50%, Authentication
W74M12JVZESQ	128 Mb	133	2.7	3.6	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 50%, Authentication
W74M12JWSSSQ	128 Mb	104	1.7	1.95	-40	125	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M12JWZPSQ	128 Mb	104	1.7	1.95	-40	125	WSON-8	6x5 mm	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M12JWZESQ	128 Mb	104	1.7	1.95	-40	125	WSON-8	8x6 mm	SPI/Dual/Quad	P	DRV 75%, Authentication
W74M64JVSSSQ	64 Mb	133	2.7	3.6	-40	125	SOP-8	208 Mil	SPI/Dual/Quad	P	DRV 50%, Authentication

Remark 1 : DRV=75%, DRV=50%, means Default Driver Strength 50% or 75%.
Remark 2 : RPMC fixed means W25R is for RPMC, W74M is for Authentication.

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

W35T-NW Series

W35T-NW with the JEDEC xSPI interface offers a combination of high bandwidth, advanced features, and exceptional reliability. It meets the highest grade ISO26262 ASIL-D compliant for automotive. Winbond's Octal NOR Flash delivers the highest synchronous byte-wide (8-bit) data bandwidth on code and data storage solutions for instant-on and Execute-In-Place (XIP) embedded applications. This series offers greater flexibility and burst speed than the regular SPI interface NOR Flash.

Key Feature:

- Execute in Place (XIP)
- 1.2V I/O[1]
- BUSY function[1]
- Built-in ECC
- SED and DED
- /INT and /RSTO
- CRC-in-Transit support
- Read Command Bypass mode
- One Time Programmable (OTP)
- Automotive Grade (AG)
- 105°C operating temperature
- AEC-Q100
- Octal SPI with 166MHz SDR and 120MHz DDR
- Deep power-down mode for low power consumption
- Individual block protect[1]

Note: [1.] 64Mb, 128Mb, 256Mb only

Key Application:

Instrument cluster, Advanced Driver Assistance Systems (ADAS) and Driver Monitoring Systems (DMS), Gateway and Domain controller, eCockpit, Infotainment, Car Camera.

W35T-NW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	SFDP Version	Mass Production
W35T02NWTBAE	2 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T02NWTBSE	2 Gb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T02NWTBAF	2 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025
W35T02NWTBSF	2 Gb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025
W35T01NWTBAE	1 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T01NWTBSE	1 Gb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T01NWTBAF	1 Gb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025
W35T01NWTBSF	1 Gb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025
W35T51NWTBAE	512 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q1 2025
W35T51NWTBSE	512 Mb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q1 2025
W35T51NWTBAF	512 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q1 2025
W35T51NWTBSF	512 Mb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q1 2025
W35T25NWTBAE	256 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T25NWTBAF	256 Mb	166	200	1.65	2	-40	105	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025
W35T25NWTBSE	256 Mb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	SPI/Octal	1	F	U Q4 2025
W35T25NWTBSF	256 Mb	166	200	1.65	2	-40	125	TFBGA-24 (5x5)	8x6 mm	Octal	1	F	U Q4 2025

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25N-GV Series

It is designed to provide reliable and cost-effective storage solutions. It leverages the Serial Peripheral Interface (SPI) for efficient data transfer and offers a compact form factor with high-capacity storage, making it an ideal choice for applications requiring reliable, non-volatile memory.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- Automotive Grade 2 (AG2)
- 105°C operating temperature
- AEC-Q100
- Deep power-down mode for low power consumption[1]

Note: [1.] W25N512GV

Key Application:

Video Event Data Recorder (VEDR), Car camera, Car gateway, Surveillance, and Automation.

W25N-GV Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N01GVSFAG	1 Gb	104	-	2.7	3.6	-40	105	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVZEAG	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVTBAG	1 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVSFAT	1 Gb	104	-	2.7	3.6	-40	105	SOIC-16	300 mil	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVZEAT	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVTBAT	1 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVSFAR	1 Gb	104	-	2.7	3.6	-40	105	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVZEAR	1 Gb	104	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVTBAR	1 Gb	104	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVSFKG	1 Gb	104	-	2.7	3.6	-40	115	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVZEKG	1 Gb	104	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVTBKG	1 Gb	104	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01GVSFKT	1 Gb	104	-	2.7	3.6	-40	115	SOIC-16	300 mil	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVZEKT	1 Gb	104	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVTBKT	1 Gb	104	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01GVSFKR	1 Gb	104	-	2.7	3.6	-40	115	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVZEKR	1 Gb	104	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N01GVTBKR	1 Gb	104	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N512GVPAG	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVEAG	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVBAG	512 Mb	166	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVPAT	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	6x5 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVEAT	512 Mb	166	-	2.7	3.6	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVBAT	512 Mb	166	-	2.7	3.6	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVPKG	512 Mb	166	-	2.7	3.6	-40	115	WSON-8	6x5 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVEKG	512 Mb	166	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVBKG	512 Mb	166	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N512GVFKT	512 Mb	166	-	2.7	3.6	-40	115	SOIC-16	300 mil	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	
W25N512GVEKT	512 Mb	166	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVBKT	512 Mb	166	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N512GVFKR	512 Mb	166	-	2.7	3.6	-40	115	SOIC-16	300 mil	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N512GVEKR	512 Mb	166	-	2.7	3.6	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P
W25N512GVBKR	512 Mb	166	-	2.7	3.6	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	-	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W25N-JW Series

It uses Winbond's mature 46nm process and offering robust reliability performance. It enables a data transfer rate of 83MB/s and provides solutions for accelerating cluster boot-up time. Hardware reset pin is available for hardware/ software design on automotive applications.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- Automotive Grade 2 (AG2)
- 105°C operating temperature
- AEC-Q100
- Dual/quad SPI with 166MHz STR and 80MHz DTR

Key Application:

Advanced Driver Assistance Systems (ADAS), Instrument cluster applications, Center Information Display (CID), Vehicle-to-Everything (V2X), and Fast booting.

W25N-JW Series

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W25N02JWZEAF	2 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWTBAF	2 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWZEAC	2 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N02JWTBAC	2 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N02JWZEKF	2 Gb	166	80	1.7	1.95	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWTBKF	2 Gb	166	80	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N02JWZEKC	2 Gb	166	80	1.7	1.95	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N02JWTBKC	2 Gb	166	80	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWZEAG	1 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWTBAG	1 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWZEAT	1 Gb	166	80	1.7	1.95	-40	105	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWTBAT	1 Gb	166	80	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWZEKG	1 Gb	166	80	1.7	1.95	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWTBKG	1 Gb	166	80	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Buffer	Continuous	2048	64	P
W25N01JWZEKT	1 Gb	166	80	1.7	1.95	-40	115	WSON-8	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P
W25N01JWTBKT	1 Gb	166	80	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6 mm	SPI/Dual/Quad	1	Continuous	Buffer	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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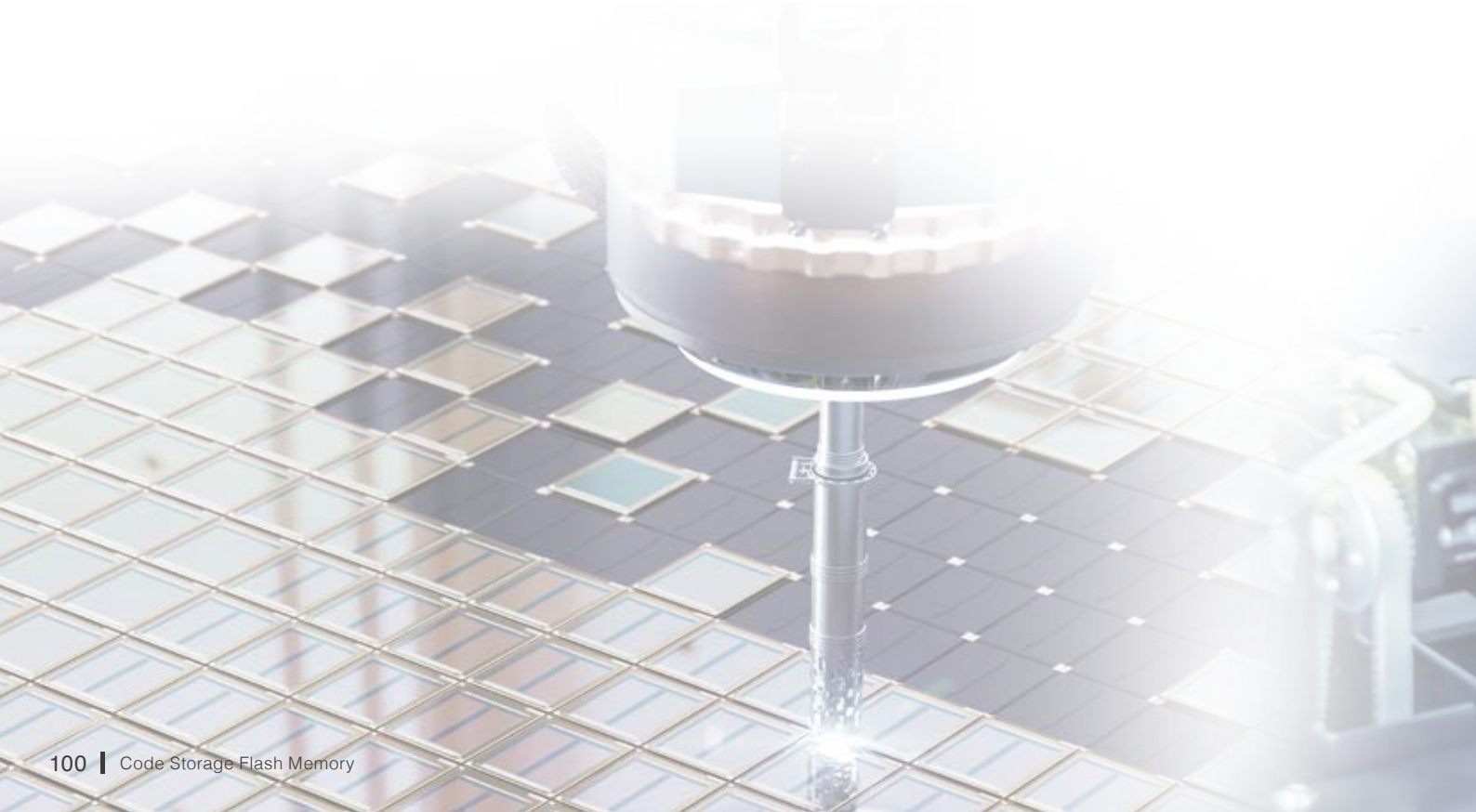


W29N-GV/HV Series

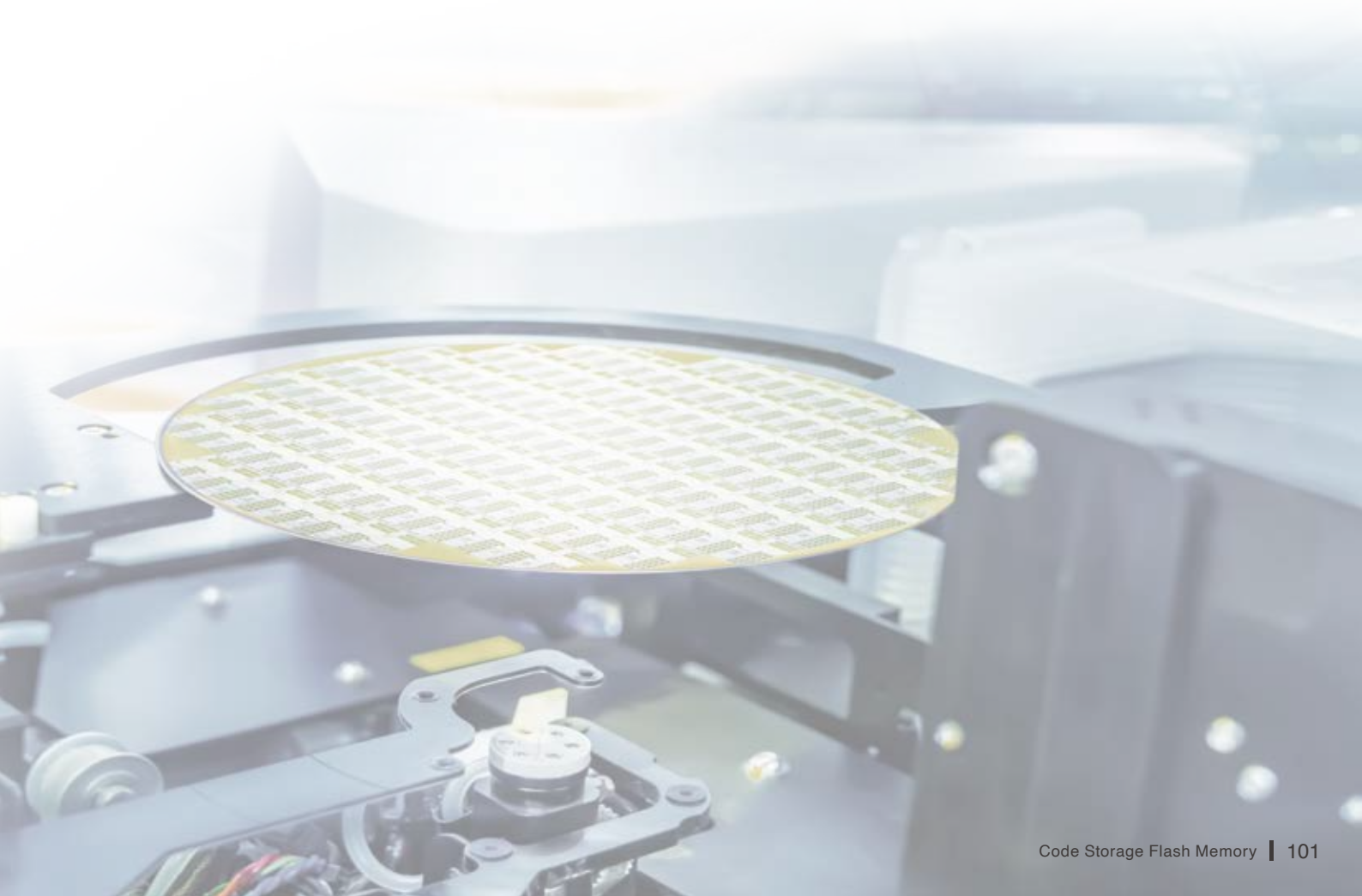
It uses Winbond's mature 46nm process and offering very robust quality performance to fulfill high reliability demanding applications. It supports the standard NAND flash memory interface by using the multiplexed 8-bit bus to transfer data, addresses, and command instructions.

Key Feature:

- One Time Programmable (OTP) page
- Automotive Grade (AG2)
- 105°C operating temperature
- AEC-Q100
- Mainstream package type

Key Application:

Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), Vehicle-to-Everything (V2X)



W29N-GV Series

It supports 1bit/4bit ECC, x8 Bus Width, 25us random read, 250us(typ.) page program time, 2ms(typ.) block erase time, OTP memory area. It is suitable for V2X, car camera, and infotainment.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N04GVSAAF	4 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N04GVBAAF	4 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N02GVSAAF	2 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back, OTP	2048	64	P
W29N02GVBAAF	2 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back, OTP	2048	64	P
W29N02GVBKAF	2 Gb	2.7	3.6	-40	115	BGA-48	6.5x8	8	4	Copy Back, OTP	2048	64	P

W29N-HV Series

It supports 4bit ECC required, copy back, small packing form VFBGA48, automotive grade, sequential read cycle: 25ns, and copy back.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N01HVSANF	1 Gb	2.7	3.6	-40	105	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N01HVDANF	1 Gb	2.7	3.6	-40	105	BGA-48	6.5x8	8	4	Copy Back	2048	64	P
W29N01HVBANF	1 Gb	2.7	3.6	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W29N-GZ/HZ Series

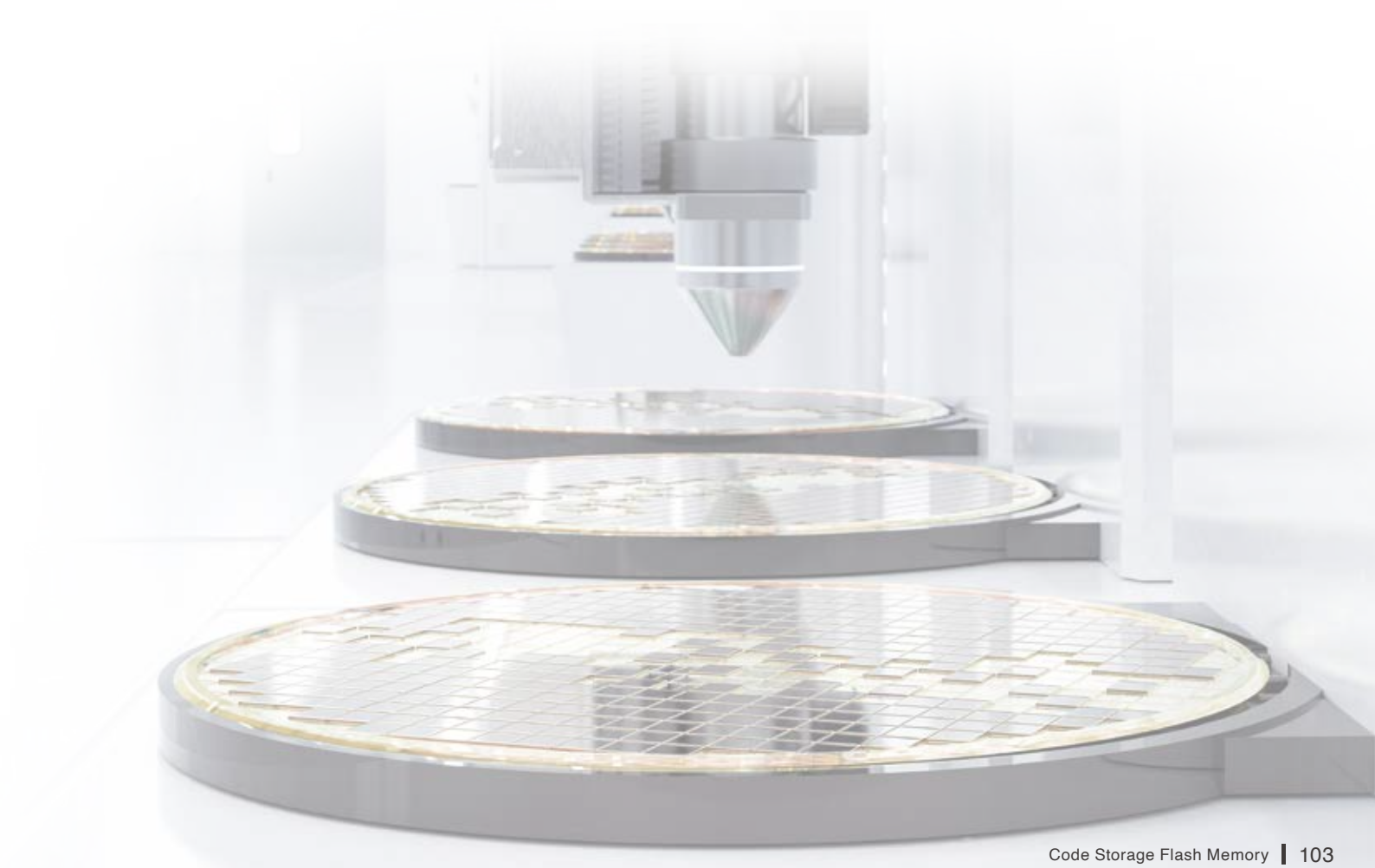
It is the series of 1.8V NAND Flash memories designed to offer robust code storage. It supports the standard NAND Flash memory interface using the multiplexed 8-bit bus to transfer data, addresses, and command instructions.

Key Feature:

- One Time Programmable page (OTP)
- Automotive Grade 2 (AG2)
- 105°C operating temperature
- AEC-Q100
- Mainstream package type

Key Application:

Infotainment, Instrument cluster, Video Event Data Recorder (VEDR), Vehicle-to-Everything (V2X)



W29N-GZ Series

It supports 1bit/4bit ECC requirement, x8 Bus Width, 25us Random Read, 250us (typ.) Page Program Time, 2ms(typ.) Block Erase Time, OTP Memory Area, Page size 2112 bytes, 2 plan operation.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N02GZSABF	2 Gb	1.7	1.95	-40	105	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N02GZBABF	2 Gb	1.7	1.95	-40	105	BGA-63	9x11	8	4	Copy Back	2048	64	P
W29N02GZBKBF	2 Gb	1.7	1.95	-40	115	BGA-63	9x11	8	4	Copy Back	2048	64	P

W29N-HZ Series

It supports VFBGA-48, 1bit/4bit ECC requirement, Automotive grade, and 1 plan operation.

Part No.	Density	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	I/O	Required ECC (bit)	Features	Page Size (Byte)	Spare Area (Byte)	Mass Production
W29N01HZDINA	1 Gb	1.7	1.95	-40	85	BGA-48	6.5x8	8	1	Copy Back	2048	64	P
W29N01HZBINA	1 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	1	Copy Back	2048	64	P
W29N01HZSINF	1 Gb	1.7	1.95	-40	85	TSOP-48	12x20	8	4	Copy Back	2048	64	P
W29N01HZBINF	1 Gb	1.7	1.95	-40	85	BGA-63	9x11	8	4	Copy Back	2048	64	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W35N-JW Series

It is the world's first x8 Octal interface for NAND Flash, which enables automotive and industrial manufacturers to provide code storage multi-density choices. It offers a maximum Continuous Read throughput of 240MB/s. It is capable of erasing up to 400 times faster and programming up to 50 times faster than serial NOR Flash. The feature will be very attractive to OTA applications.

Key Feature:

- Built-in ECC
- Bad Block Management Lookup Table (BBM LUT)
- Buffer read and Continuous read modes
- One Time Programmable page (OTP)
- Automotive Grade 2 (AG2)
- 105°C operating temperature
- AEC-Q100
- Octal SPI with 166MHz SDR and 120MHz DDR

Key Application:

Instrument cluster applications, Fast Firmware Update Over the Air (OTA), and Advanced Driver Assistance Systems (ADAS)

Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension (mm)	Interface Type	On-Chip ECC (bit)	Default Read Mode	Read Switchable to	Page Size (Byte)	Spare Area (Byte)	Mass Production
W35N04JWTBAF	4 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N04JWTBKF	4 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N04JWTBAC	4 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N04JWTBKC	4 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N02JWTBAF	2 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N02JWTBKF	2 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N02JWTBAC	2 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N02JWTBKC	2 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N01JWTBAG	1 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N01JWTBKG	1 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Buffer	Continuous	4096	128	P
W35N01JWTBAT	1 Gb	166	120	1.7	1.95	-40	105	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C
W35N01JWTBKT	1 Gb	166	120	1.7	1.95	-40	115	TFBGA-24 (5x5)	8x6	Octal	1	Continuous	Buffer	4096	128	C

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

TrustME® SECURE FLASH MEMORY

When a trusted product requires secure code storage, you can rely on TrustME® Secure Flash Memory from Winbond. The TrustME® family meets all major security requirements, from cybersecurity protection for IoT devices up to advanced encryption for industrial, financial and infrastructure applications.

Secure Flash Memory

The Most Advanced and Broadest Family of Secure Flash Solutions

In today's interconnected world, electronic devices play an integral role in our daily lives. From consumer gadgets to critical infrastructure systems, these devices rely heavily on Flash memories for storing essential code and data. As such, safeguarding these assets from malicious cyber threats has become paramount.

Flash memories are the backbone of modern electronic platforms, housing vital assets such as code, private data, and company credentials. However, the ubiquity of these memories has also made them attractive targets for malicious individuals and organizations. Accessing the Flash memories contents or modifying the stored system code are some of the more common attacks seen today. Ordinary Flash memories have no means of protection from unauthorized access and modification.

Hackers can leverage these vulnerabilities to access user's private data, orchestrate large-scale attacks on corporate infrastructure, and even engage in acts of sabotage and espionage against governments.

Recognizing the gravity of these challenges, Winbond has pioneered the development and introduction of a comprehensive range of TrustME® Secure Flash memories.
These cutting-edge solutions are engineered to protect assets and create secure platforms for Winbond customers, safeguarding end users in various domains.

Winbond's Secure Flash memories service a wide array of applications, including consumer IoT, Industrial IoT, servers, networking, and automotive sectors. This versatility makes them an indispensable component in fortifying electronic devices across industries.

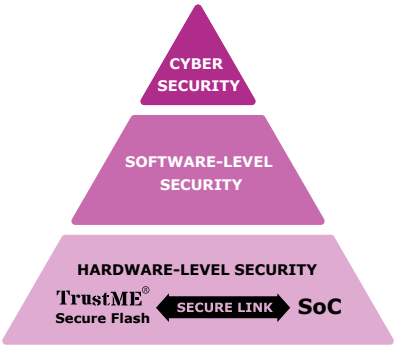
Winbond is deeply committed to safeguarding its customers against emerging cybersecurity threats. To prepare for the impending post-quantum era, Winbond has recently introduced Secure Flash memories fortified with post-quantum cryptography (PQC). This ensures that customers will continue to enjoy robust protection in an ever-evolving cybersecurity landscape.

Applications

- Consumer IoT devices
- Industrial systems
- Infrastructure solutions
- Financial systems
- Government installations

Secure Flash Memory Enabling Trust & Providing Scalability

- Hardware security is the foundation of cyber security
- Secure storage is the core of hardware security
- Security by design



W77Q Series

It provides an ideal path to enable advanced security capability in a QSPI SPI NOR memory footprint. It is ISO26262 ASIL-B/C compliant and meets AEC-Q100 Grade 2 temperature range. It offers supply chain protection and is certified to Common Criteria EAL2, SESIP Level 2, suitable for any security requirements.

Key Feature:

- ISO26262 ASIL-B/C compliant
- AEC-Q100 Grade 2
- Up to 166MHz DTR
- Common Criteria EAL2, SESIP Level 2
- Supply chain protection
- PQC (NW family)
- Asymmetric cryptography (NW Family)
- Platform Firmware Resiliency

Key Application:

Industrial, Networking, and Server.

Part No.	Density	Operating Voltage (V)	Security Level (CC EAL)	Secure Storage	Secure XiP	Platform Firmware Resilience (PFR)	Post Quantum Cryptography (PQC) ready	RPMC	Functional Safety Level (ISO26262)	STR Frequency (MHz)	DTR Frequency (MHz)	Operating TeP. (min) (°C)	Operating TeP. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production
W77Q01NWQBIE	1 Gb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	2025
W77Q51NWDFIE	512 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q51NWDEIE	512 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q51NWDBIE	512 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	2025
W77Q25NWSFIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q25NWSEIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q25NWSBIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	2025
W77Q25NWSFIN	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q25NWSEIN	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q128JWBAO	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JWBAS	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JWPAQ	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JWPAR	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JWSAQ	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q128JWSAR	128 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q128JWBIO	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

Part No.	Density	Operating Voltage (V)	Security Level (CC EAL)	Secure Storage	Secure XiP	Platform Firmware Resilience (PFR)	Post Quantum Cryptography (PQC) ready	RPMC	Functional Safety Level (ISO26262)	STR Frequency (MHz)	DTR Frequency (MHz)	Operating TeP. (min) (°C)	Operating TeP. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production
W77Q128JWBIS	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JWBJO	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JWBJS	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JWPIQ	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JWPIR	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JWSIQ	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q128JWSIR	128 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q128JVBIO	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JVBIS	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JVBJO	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JVBJS	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q128JVPIQ	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JVPIR	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q128JVSIQ	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q128JVSIR	128 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q12NWDFIE	128 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q12NWDEIE	128 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q12NWDBIE	128 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	2025
W77Q64JWSSAQ	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JWSSAR	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JWTBAO	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWTBAS	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWZPAQ	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64JWZPAR	64 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64JWSSIQ	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JWSSIR	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JWTBIO	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWTBIS	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWTBJO	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWTBJS	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JWZPIQ	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64JWZPIR	64 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64JVSSIQ	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JVSSIR	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q64JVTBIO	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JVTBIS	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W77Q Series

Part No.	Density	Operating Voltage (V)	Security Level (CC EAL)	Secure Storage	Secure XiP	Platform Firmware Resilience (PFR)	Post Quantum Cryptography (PQC) ready	RPMC	Functional Safety Level (ISO26262)	STR Frequency (MHz)	DTR Frequency (MHz)	Operating TeP. (min) (°C)	Operating TeP. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production
W77Q64JVTBJO	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JVTBJS	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	P
W77Q64JVZPIQ	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64JVZPIR	64 Mb	3.0	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q64NWSFIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q64NWSEIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q64NWSBIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, DSPI, QSPI	2025
W77Q64NWSFIN	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	2025
W77Q64NWSEIN	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	2025
W77Q32JWSSAR	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q32JWSSAQ	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q32JWZPAR	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q32JWZPAQ	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q32JWXGAR	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	XSON8	4x4mm	SPI, DSPI, QSPI	P
W77Q32JWXGAQ	32 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	XSON8	4x4mm	SPI, DSPI, QSPI	P
W77Q32JWSFIS	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	P
W77Q32JWSFIO	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	P
W77Q32JWSFIN	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO16	SOIC 300mil	SPI, DSPI, QSPI	P
W77Q32JWSSIR	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q32JWSSIQ	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q32JWSSIN	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q32JWZPIR	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q32JWZPIQ	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q32JWXGIR	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	XSON8	4x4mm	SPI, DSPI, QSPI	P
W77Q32JWXGIQ	32 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	XSON8	4x4mm	SPI, DSPI, QSPI	P
W77Q16JWSSAR	16 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q16JWSSAQ	16 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q16JWZPAR	16 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q16JWZPAQ	16 Mb	1.8	2	Y	N	Y	N	N	ASIL-B/C	133	66	-40	105	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q16JWSSIR	16 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q16JWSSIQ	16 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	SO8	SOIC 208mil	SPI, DSPI, QSPI	P
W77Q16JWZPIR	16 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P
W77Q16JWZPIQ	16 Mb	1.8	2	Y	N	Y	N	N	-	133	66	-40	85	WSON8	6X5mm	SPI, DSPI, QSPI	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

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W77T Series

It offers an exceptional Octal SPI NOR Flash Read performance while offering Quantum-ready, asymmetric cryptographic capabilities. It is automotive-grade, offering ISO26262 ASIL-D ready functional safety capabilities. It meets the latest in security requirement including CNSA2.0 and supply chain protection.

Key Feature:

- ISO26262 ASIL-D ready
- ECC
- AEC-Q100 Grade 2
- ISO 21434 compliant
- PQC support
- Asymmetric cryptography
- Octal interface
- JEDEC SPI CRC
- Up to 200MHz DTR
- Common Criteria EAL2, SESIP Level 2
- Supply chain protection
- Platform Firmware Resiliency

Key Application:

Automotive, High-performance IoT, Infrastructure, and Advanced server.

W77T Series

Part No.	Density	Operating Voltage (V)	Security Level (CC EAL)	Secure Storage	Secure XiP	Platform Firmware Resilience (PFR)	Post Quantum Cryptography (PQC) ready	RPMC	Functional Safety Level (ISO26262)	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production
W77T01NWQBIE	1 Gb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T01NWQBIO	1 Gb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T01NWQBAE	1 Gb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T01NWQBAO	1 Gb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T01NWQBAQ	1 Gb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T51NWDBIE	512 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T51NWDBIO	512 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T51NWDBAE	512 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T51NWDBAO	512 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T51NWDBAQ	512 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T25NWSEIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, QSPI, Octal	2025
W77T25NWDEIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, QSPI, Octal	2025
W77T25NWSBIE	256 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T25NWSBIO	256 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T25NWSBAE	256 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T25NWSBAO	256 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T25NWSBAQ	256 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T12NWDBIE	128 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T12NWDBIO	128 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T12NWDBAE	128 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T12NWDBAO	128 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T12NWDBAQ	128 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T64NWSEIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, QSPI, Octal	2025
W77T64NWDEIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	166	166	-40	85	WSON8	6X5mm	SPI, QSPI, Octal	2025
W77T64NWSBIE	64 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T64NWSBIO	64 Mb	1.8	2	Y	N	Y	Y	Y	-	200	200	-40	85	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T64NWSBAE	64 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T64NWSBAO	64 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025
W77T64NWSBAQ	64 Mb	1.8	2	Y	N	Y	Y	Y	ASIL-D Ready	200	200	-40	105	TFBGA-24 (5x5)	5x5mm	SPI, QSPI, Octal	2025

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

W75F Series

It is a specialty security element with highest level of security for a standalone secure memory device. It is certified for Common Criteria EAL5+. It is also certified to ISO26262 ASIL-D, and rated for AEC-Q100 Grade 2 temperature range.

Key Feature:

- Common Criteria EAL5+
- ISO26262 ASIL-D certified
- AEC-Q100 Grade 2
- Protect Profile PP0117 compliance

Key Application:

Mobile payment, Electronic wallet, and High-security infrastructure.

Part No.	Density	Operating Voltage (V)	Security Level (CC EAL)	Secure Storage	Secure XiP	Platform Firmware Resilience (PFR)	Post Quantum Cryptography (PQC) ready	RPMC	Functional Safety Level (ISO26262)	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	Interface Type	Mass Production
W75F32WBYIBG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	85	WLCSP-15	-	SPI/Quad/Octal	P
W75F32WBYICG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	85	WLCSP-15	-	SPI/Quad/Octal	P
W75F32WBYJBG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-15	-	SPI/Quad/Octal	P
W75F32WBYJCG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-15	-	SPI/Quad/Octal	P
W75F32WBYWBG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-15	-	SPI/Quad/Octal	P
W75F32WBYWCG	32Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-15	-	SPI/Quad/Octal	P
W75F40WBYIBG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WBYICG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6IDG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6IEG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6JBG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6JCG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6JDG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6JEG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-40	105	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6WBG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6WCG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6WDG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P
W75F40WB6WEG	4Mb	1.8	5	Y	Y	N	N	N	ASIL-D	50	-	-25	85	WLCSP-12	-	SPI/Quad/Octal	P

Mass Production column : P : Mass production U : Under development and exepected release time C : Contact Winbond

Winbond shall have the right to modify the status and schedule of this product at any time without notice.

About Winbond

Winbond Electronics Corporation is one of the few companies worldwide with proprietary products and technology in both memory and logic integrated circuits. The Company provides customer-driven solutions backed by the expert capabilities of product design, R&D, manufacturing, and promoting brand name products globally. Winbond's product portfolio, consisting of Code Storage Flash, TrustME® Secure Flash, Customized Memory Solution (CMS), is widely used by tier 1 customers in communication, consumer electronics, automotive and industrial, and computer peripheral markets. Winbond is headquartered in Central Taiwan Science Park (CTSP), and it has subsidiaries in the USA, China, Japan, Germany, India, Korea, Hong Kong, Singapore, and Israel. With its 12-inch fabs located in CTSP and South Taiwan Science Park (STSP)'s Kaohsiung Science Park, Winbond keeps pace to develop in-house technologies to provide high-quality integrated circuit products and services.

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