winbond

Smart Memory, Smarter Life

TrustME® Secure Flash Memory
Product Selection Guide **2026**

winbond

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

Winbond Vision Statement

CONTENTS
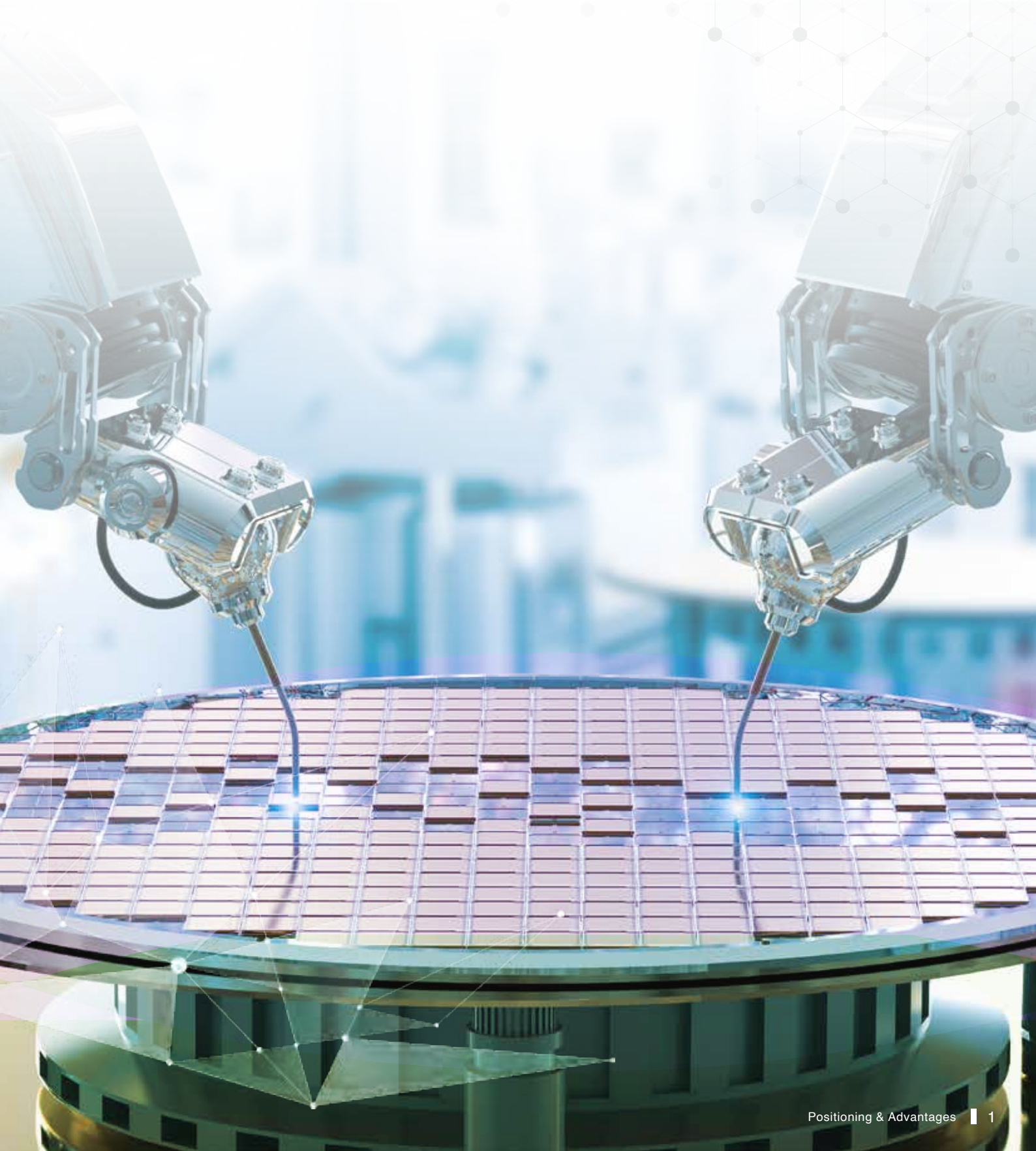
POSITIONING & ADVANTAGES

A trusted supplier of advanced memory products

A Trusted Supplier of Advanced Memory Products

From R&D through advanced manufacturing to dedicated customer service, Winbond Electronics Corporation is a total memory solutions provider.

Winbond's customer-driven memory solutions are backed by deep expertise in

- R&D
- 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 Customized Memory Solution, Code Storage Flash Memory, and TrustME® Secure Flash Memory. The company serves customers in communications, consumer electronics, automotive, industrial, computer peripherals markets and the IoT, supplying its products directly or via a global network of authorized distributors.

Winbond's headquarter is in the Central Taiwan Science Park. It operates 12-inch wafer fabs in Taichung and Kaohsiung 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 memory products.

Trusted for Safety and High Quality

In high-technology products, the integrity of the software code and the reliable operation of memory devices are of critical importance. That's why Winbond's Quality Management Program governs every stage of a product's life, from its start in the R&D laboratory to manufacturing and device testing.

The program has three key elements:

Quality Control	Meticulously monitors materials and production processes to check that they satisfy rigorous standards in automotive and industrial.	

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

Failure Analysis	Investigates the causes of product failures and proposes corrective actions.	

This is why Winbond is trusted by the world's largest manufacturers to provide on-time shipments of high-quality and high-reliability memory products.

Independently Verified Quality and Safety Performance

The data which Winbond provides to customers give 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 also 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
- CNS 45001

Cyber-Security

- ISO/IEC 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 CNS 45001 ISO/IEC 27001 ISO 21434 RBA VAP

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

Reliability also extends to the supply chain: the Winbond Product Longevity Program guarantees a minimum 10-year lifetime for products supplied to automotive, industrial, consumer, medical, and industrial computing markets. Products supplied under this program are subject to extended product change notification, end-of-life and last-time buy arrangements.

TrustME® SECURE FLASH

When an electronics product requires secure code storage, it needs certified TrustME® Secure Flash Memory from Winbond. The TrustME® family meets every system requirement, from the substantial protection required by simple IoT devices up to Common Criteria EAL 5+ certified memory for securing financial transactions.

TrustME® Secure Flash

In today's interconnected world, electronic devices play an integral role in our daily lives. From consumer gadgets to critical infrastructure components, these devices rely heavily on flash memory 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 devices has also made them attractive targets for hackers. Accessing the content of flash devices or permanently modifying the system code stored in the flash are two of the more common attacks seen today. Standard flash devices have no means of protection from unauthorized access and modification.

Hackers can leverage these vulnerabilities to access end-users' private data, orchestrate large-scale attacks on corporate infrastructure via networking and IoT devices, and even engage in acts of sabotage and espionage against government infrastructure.
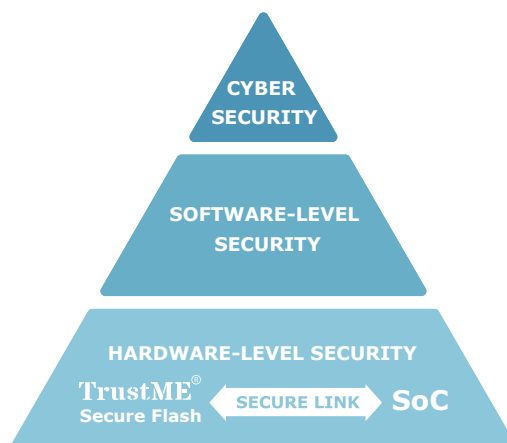
Recognizing the gravity of these challenges, Winbond Electronics Corporation has pioneered the development and introduction of a comprehensive range of TrustME® Secure Flash devices. These cutting-edge solutions are engineered to protect assets and create secure platforms for Winbond customers, safeguarding end users in various domains.

Winbond's Secure Flash devices 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 introduced Secure Flash devices fortified with post-quantum cryptography (PQC). This ensures that customers will continue to enjoy robust protection in an ever-evolving cybersecurity landscape.

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

CYBER SECURITY

SOFTWARE-LEVEL SECURITY

HARDWARE-LEVEL SECURITY

TrustME® Secure Flash ← SECURE LINK → SoC

W77Q and W77T Secure Flash Memory

Provides substantial levels of security as defined by various Cybersecurity regulations. It is ideal for use in IoT end points and connected vehicles to protect code, data integrity, privacy and credentials.

The W77Q and W77T for IoT endpoints, automotive, networking and other types of connected devices provide important security functions, including hardware root-of-trust, secure boot, platform resilience, and strong data protection. The W77Q and W77T facilitate secure over-the-air software updates, even when the host processor is compromised.

Winbond's W77Q and W77T Secure Flash devices come equipped with an arsenal of features designed to ensure security:

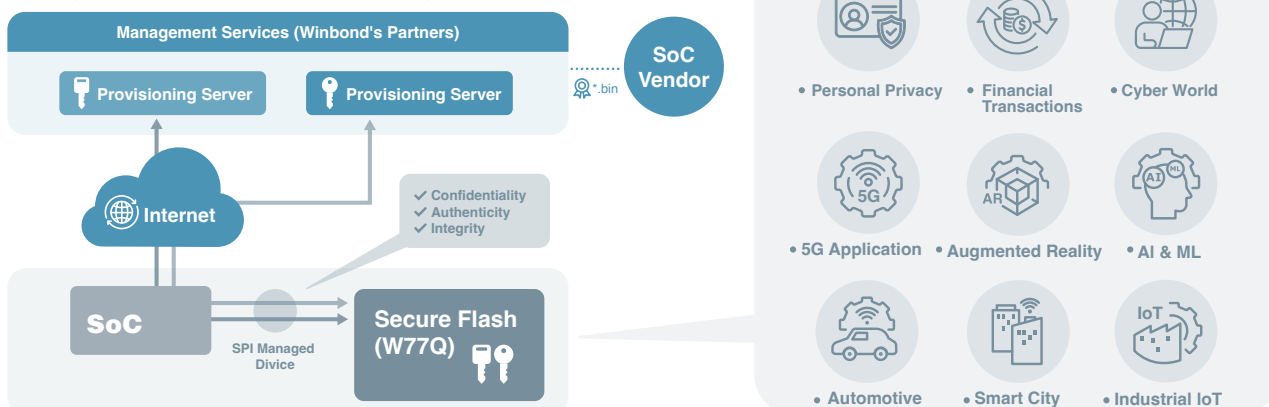|	
Code and Data Protection	These devices offer robust protection for both code and data, making it exceedingly difficult for hackers to tamper with critical information.
Authentication	Winbond Secure Flash devices employ stringent authentication protocols, ensuring that only authorized actors and software layers gain access.
Secure Software Updates with Rollback Protection	The devices facilitate remote secure software updates while safeguarding against rollback attacks, ensuring that only legitimate updates are executed, leveraging Post-Quantum Cryptography, LMS (NIST800-208).
Platform Resiliency	Unauthorized code changes are automatically detected, enabling the system to recover to a secure state and disturbing potential cyber threats. Platform Resiliency of Winbond Secure Flash follows NIST SP 800-193 recommendations.
Secure Supply Chain	Winbond's Secure Flash devices guarantee the origin and integrity of flash content throughout the supply chain. This prevents content tampering and misconfiguration during platform assembly, transportation, and configuration, safeguarding against cyber adversaries.

Product Line	Description	Main Features and Security Level
W77Q	Quad SPI Secure Flash Memory	**Main Features:** · Code and Data Protection · Authentication · Secure OTA based on PQC [2] (LMS) · Platform Firmware Resiliency · Secure Supply Chain based on PQC [2] (LMS) · Extended RPMC [2] **Safety and Substantial Security Level:** · ISO 15408 CC EAL 2+ · SESIP Level 2 (with IEC 62443 and NIST 8259A Ready) · FIPS 140-3 CAVP and CMVP [1] · ISO 26262 Functional Safety ASIL-C Ready [3] · ISO 21434 Automotive Cybersecurity [3]
W77T	Octal SPI Secure Flash Memory	**Main Features:** · Quad SPI and x SPI Octal (200MHz) · Code and Data Protection · Authentication · Secure OTA based on PQC (LMS) · Platform Firmware Resiliency · Extended RPMC · Secure Supply Chain based on PQC (LMS) · High Reliability (Flash Array ECC and SPI CRC) **Safety and Substantial Security Level:** · ISO 15408 CC EAL 2+ [1] · FIPS 140-3 CAVP and CMVP [1] · ISO 26262 Functional Safety ASIL-D Ready [1] · ISO 21434 Automotive Cybersecurity [1]

[1] Certification in progress   [2] 256Mb-1Gb densities only   [3] 16Mb-128Mb densities only

End-to-End Security Applications Example by Winbond Secure Flash Memory (W77Q)

Industrial Grade Support

Part No.	Density(Mb)	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	I/O (bit)	Interface Type	Mass Production	Security Features	Security Certifications
W77Q32JWSFIS	32	133	66	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Dual/Quad	√		
W77Q32JWSFIO	32	133	66	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Dual/Quad	√		
W77Q32JWSFIN	32	133	66	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Dual/Quad	√		
W77Q16JWSSIR	16	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q16JWSSIQ	16	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		· CC EAL2
W77Q32JWSSIR	32	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√	· Secure Boot	· SESIP L2 (with IEC62443-4-2
W77Q32JWSSIQ	32	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√	· Secure Storage	and NIST 8259A)
W77Q32JWSSIN	32	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√	· Secure Firmware Update (OTA)	· ISO 21434
W77Q16JWZPIR	16	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√	· Platform Firmware Resiliency	· ISO 26262 ASIL-C Ready
W77Q16JWZPIQ	16	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		· FIPS 140-3 CAVP
W77Q32JWZPIR	32	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q32JWZPIQ	32	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q32JWXGIR	32	133	66	1.7	1.95	-40	85	XSON-8	4x4 mm	4	SPI/Dual/Quad	√		
W77Q32JWXGIQ	32	133	66	1.7	1.95	-40	85	XSON-8	4x4 mm	4	SPI/Dual/Quad	√		

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

W77Q and W77T Secure Flash Memory

Industrial Grade Support

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	I/O (bit)	Interface Type	Mass Production	Security Features	Security Certifications
W77Q64JWSSIR	64 Mb	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JWSSIQ	64 Mb	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JWSIR	128 Mb	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JWSIQ	128 Mb	133	66	1.7	1.95	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JWZPIR	64 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q64JWZPIQ	64 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JWPIR	128 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JWPIQ	128 Mb	133	66	1.7	1.95	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JWBIS	128 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JWBIO	128 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JWBJS	128 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JWBJO	128 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JWTBIS	64 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JWTBIO	64 Mb	133	66	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√	• Secure Boot • Secure Storage • Secure Firmware Update (OTA) • Platform Firmware Resiliency	• CC EAL2 • SESIP L2 (with IEC62443-4-2 and NIST 8259A) • ISO 21434 • ISO 26262 ASIL-C Ready • FIPS 140-3 CAVP
W77Q64JWTBJS	64 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JWTBJO	64 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JVSSIR	64 Mb	133	66	2.7	3.6	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JVSSIQ	64 Mb	133	66	2.7	3.6	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JVSIR	128 Mb	133	66	2.7	3.6	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JVSIQ	128 Mb	133	66	2.7	3.6	-40	85	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JVZPIR	64 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q64JVZPIQ	64 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JVPIR	128 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JVPIQ	128 Mb	133	66	2.7	3.6	-40	85	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		
W77Q128JVBIS	128 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JVBIO	128 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JVBJS	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JVBJO	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JVTBIS	64 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JVTBIO	64 Mb	133	66	2.7	3.6	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JVTBJS	64 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64JVTBJO	64 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q64NWSFIE	64 Mb	166	166	1.8	1.8	-40	85	SO16	SOIC 300mil	4	SPI, DSPI, QSPI	1H26		
W77Q12NWDFIE	128 Mb	166	166	1.8	1.8	-40	85	SO16	SOIC 300mil	4	SPI, DSPI, QSPI	1H26		
W77Q25NWSFIE	256 Mb	166	100	1.7	1.95	-40	85	WSON-8	8x6 mm	4	SPI/Quad	1H26	• Secure Boot • Secure Storage • Secure Firmware Update using LMS • Asymmetric Cryptography • Platform Firmware Resiliency • RPMC	• CC EAL2 • SESIP (with IEC62443-4-2 and NIST 8259A) • FIPS PUB 180-3 CMVP
W77Q25NWSEIE	256 Mb	166	100	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Quad	1H26		
W77Q25NWSBIE	256 Mb	166	100	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad	1H26		
W77Q51NWDFIE	512 Mb	166	100	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Quad	1H26		
W77Q51NWDEIE	512 Mb	166	100	1.7	1.95	-40	85	WSON-8	8x6 mm	4	SPI/Quad	1H26		
W77Q51NWDBIE	512 Mb	166	100	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad	1H26		
W77Q25NWSFIN	256 Mb	166	100	1.7	1.95	-40	85	SOIC-16	300 mil	4	SPI/Quad	1H26		
W77Q25NWSEIN	256 Mb	166	100	1.7	1.95	-40	85	WSON-8	8x6 mm	4	SPI/Quad	1H26		
W77Q01NWQBIE	1 Gb	200	200	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	8	SPI/Quad	2026		
W77T25NWSEIE	256 Mb	166	100	1.7	1.95	-40	85	WSON-8	8x6 mm	8	SPI/Quad/Octal	2026	• Secure Boot • Secure Storage • Secure Firmware Update using LMS • Asymmetric Cryptography • Platform Firmware Resiliency • RPMC • Build-in ECC and SPI CRC for Safety	• CC EAL2 • SESIP (with IEC62443-4-2 and NIST 8259A) • ISO 21434 • FIPS PUB 180-3 CMVP
W77T25NWDEIE	256 Mb	166	100	1.7	1.95	-40	85	WSON-8	8x6 mm	8	SPI/Quad/Octal	2026		
W77T25NWSBIE	256 Mb	200	200	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	8	SPI/Quad/Octal	2026		
W77T51NWDBIE	512 Mb	200	200	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	8	SPI/Quad/Octal	2026		
W77T01NWQBIE	1 Gb	200	200	1.7	1.95	-40	85	TFBGA-24 (5x5)	5x5-1 mm	8	SPI/Quad/Octal	2026		

(1 Certification in progress

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

Automotive Grade Support

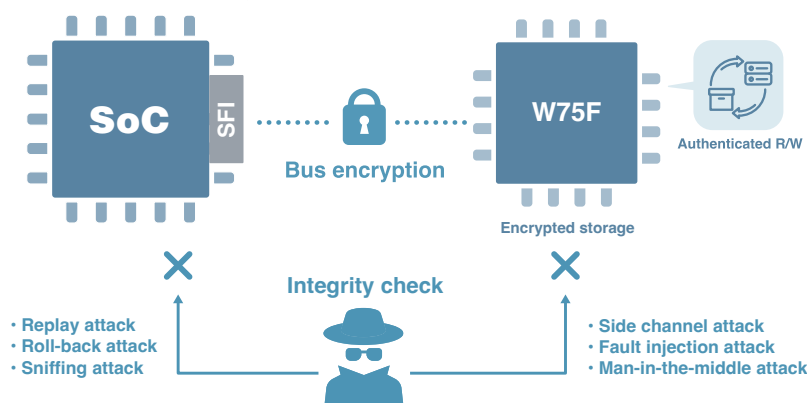| Part No.	Density	STR Frequency (MHz)	DTR Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temp. (min) (°C)	Operating Temp. (max) (°C)	Package Type	Dimension	I/O (bit)	Interface Type	Mass Production	Security Features	Security Certifications
W77Q16JWSSAR	16 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q16JWSSAQ	16 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q32JWSSAR	32 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		• CC EAL2
W77Q32JWSSAQ	32 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		• SESIP L2
W77Q16JWZPAR	16 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		(with IEC62443-4-2 and
W77Q16JWZPAQ	16 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		NIST 8259A)
W77Q32JWZPAR	32 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		• ISO 21434
W77Q32JWZPAQ	32 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√		• ISO 26262 ASIL-C Ready
W77Q32JWXGAR	32 Mb	133	66	1.7	1.95	-40	105	XSON-8	4x4 mm	4	SPI/Dual/Quad	√		• FIPS 140-3 CAVP
W77Q32JWXGAQ	32 Mb	133	66	1.7	1.95	-40	105	XSON-8	4x4 mm	4	SPI/Dual/Quad	√		
W77Q64JVSSAR	64 Mb	133	66	2.7	3.6	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JVSSAQ	64 Mb	133	66	2.7	3.6	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JVSAR	128 Mb	133	66	2.7	3.6	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q128JVSAQ	128 Mb	133	66	2.7	3.6	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	√		
W77Q64JVZPAR	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√	• Secure Boot	
W77Q64JVZPAQ	64 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√	• Secure Storage	
W77Q128JVPAR	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√	• Secure Firmware Update (OTA)	
W77Q128JVPAQ	128 Mb	133	66	2.7	3.6	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	√	• Platform Firmware Resiliency	
W77Q128JVBAS	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		
W77Q128JVBAO	128 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		• CC EAL2
W77Q64JVTBAS	64 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad			• SESIP L2
W77Q64JVTBAO	64 Mb	133	66	2.7	3.6	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	√		(with IEC62443-4-2 and
W77Q64JWSSAR	64 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	2026		NIST 8259A)
W77Q64JWSSAQ	64 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	2026		• ISO 21434
W77Q128JWSAR	128 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	2026		• ISO 26262 ASIL-C Ready
W77Q128JWSAQ	128 Mb	133	66	1.7	1.95	-40	105	SOIC-8	208 mil	4	SPI/Dual/Quad	2026		• FIPS 140-3 CMVP [1]
W77Q64JWZPAR	64 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	2026		
W77Q64JWZPAQ	64 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	2026		
W77Q128JWPAR	128 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	2026		
W77Q128JWPAQ	128 Mb	133	66	1.7	1.95	-40	105	WSON-8	6x5 mm	4	SPI/Dual/Quad	2026		
W77Q128JWBAS	128 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	2026		
W77Q128JWBAO	128 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	2026		
W77Q64JWTBAS	64 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	2026		
W77Q64JWTBAO	64 Mb	133	66	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Dual/Quad	2026		
W77T25NWSBAE	256 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26		
W77T51NWDBAE	512 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26		• CC EAL2
W77T01NWQBAE	1 Gb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26		• SESIP L2
W77T25NWSBAO	256 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26	• Secure Boot	(with IEC62443-4-2 and
W77T51NWDBAO	512 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26	• Secure Storage	NIST 8259A)
W77T01NWQBAO	1 Gb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26	• Secure Firmware Update (OTA)	• ISO 21434
W77T25NWSBAQ	256 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26	• Platform Firmware Resiliency	• ISO 26262 ASIL-D Ready
W77T51NWDBAQ	512 Mb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26		• FIPS 140-3 CMVP [1]
W77T01NWQBAQ	1 Gb	200	200	1.7	1.95	-40	105	TFBGA-24 (5x5)	5x5-1 mm	4	SPI/Quad/Octal	1H26		

[1] Certification in progress

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

W75F Secure Memory Element

The 4Mb or 32Mb W75F provides the industry's most secure and safe external storage solution for code and data in applications such as payments, iSIM cards, system security, biometric, eIDs and automotive modules. It defends products against threats such as replay, roll-back, man-in-the-middle, sniffing, side-channel, and fault injection attacks. The W75F can construct a robust and flexible secure memory sub-system with Secure Flash Interface IP of SoC (provided by Winbond) or can be a complementary embedded security system to Arm®v8-M architecture-based systems. Contact Winbond for further details.

Product Line	Description	Main Features and Security Level
W75F	Secure Memory Element	**High:** · ISO 15408 CC EAL 5+ · ISO 26262 ASIL-D Ready · PSA Certified Level 2 Ready · ISO 21434 Automotive Cybersecurity · SESIP Level 3 + Physical Attack Resistance and Software Attacker Resistance: Isolation of Platform · Compliant with 3S in SoC Protectio Profile PP0117 for Integrated SE and SIM Functionality

Bus encryption

SoC | SFI | W75F

Authenticated R/W

Encrypted storage

Integrity check

· **Replay attack**
· **Roll-back attack**
· **Sniffing attack**

· **Side channel attack**
· **Fault injection attack**
· **Man-in-the-middle attack**

Industrial Grade Support

Part No.	Density (Mb)	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	I/O (bit)	Interface Type	Mass Production	Security Features	Security Certifications
W75F32WBYWBG	32	50	-	1.65	1.95	-25	85	WLCSP-15	-	8	SPI/Quad/Octal	√	· Meets CC EAL5+ Security Certification Requirements · Secure eXecute-in-Place (XiP) · Tamper and SCA/DPA Resistant · Code and Data Confidentiality and Integrity · Mutual Authentication with SoC · Shared Memory Architecture for Multiple-domains · 20.5 MByte/sec Secured and Authenticated Throughput · 100,000 Program/Erase Cycles · 20-year Data Retention	· CC EAL 5+ · PSA Certified Level 2 Ready · SESIP Level 3 + Physical Attacker · ISO 26262 ASIL-D Ready · ISO 21434
W75F32WBYWCG	32	50	-	1.65	1.95	-25	85	WLCSP-15	-	8	SPI/Quad/Octal	√		
W75F32WBYIBG	32	50	-	1.65	1.95	-40	85	WLCSP-15	-	8	SPI/Quad/Octal	√		
W75F32WBYICG	32	50	-	1.65	1.95	-40	85	WLCSP-15	-	8	SPI/Quad/Octal	√		
W75F32WBYJBG	32	50	-	1.65	1.95	-40	105	WLCSP-15	-	8	SPI/Quad/Octal	√		
W75F32WBYJCG	32	50	-	1.65	1.95	-40	105	WLCSP-15	-	8	SPI/Quad/Octal	√		
W75F40WB6WDG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6WEG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6IDG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6IEG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6JDG	4	50	-	1.62	1.98	-40	105	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6JEG	4	50	-	1.62	1.98	-40	105	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6WBG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6WCG	4	50	-	1.62	1.98	-25	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6IBG	4	50	-	1.62	1.98	-40	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6ICG	4	50	-	1.62	1.98	-40	85	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6JBG	4	50	-	1.62	1.98	-40	105	WLCSP-12	-	8	SPI/Quad/Octal	√		
W75F40WB6JCG	4	50	-	1.62	1.98	-40	105	WLCSP-12	-	8	SPI/Quad/Octal	√		

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 a total memory solution provider. The Company provides customer-driven memory solutions backed by the expert capabilities of product design, R&D, manufacturing, and sales services. Winbond's product portfolio, consisting of Customized Memory Solution, Code Storage Flash, and TrustME® Secure Flash, 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, Japan, Israel, China and Hong Kong, and Germany. Based on Taichung and Kaohsiung 12-inch fabs in Taiwan, Winbond keeps pace to develop in-house technologies to provide high-quality memory IC products.

winbond

We Deliver

winbond

We Deliver

winbond

WORLDWIDE LOCATIONS

Winbond Electronics Corporation - CTSP Fab

No. 8, Keya 1st Rd., Daya Dist., Central Taiwan Science
Park, Taichung City 428303, Taiwan
Tel: 886-4-25218168

Winbond Electronics Corporation - Kaohsiung Fab

No. 35, Luke 5th Rd., Kaohsiung Science Park, Luzhu Dist.,
Kaohsiung City 821011, Taiwan
Tel: 886-7-6278168

Zhubei Building

No. 539, Sec. 2, Wenxing Rd., Zhubei City, Hsinchu County
302052, Taiwan
Tel: 886-3-5678168

Taipei Office — Nangang Dist.

14 F., No. 205, Sec. 8, Civic Blvd., Nangang Dist., Taipei City
115028, Taiwan
Tel: 886-2-81777168
26F, No.1, Songzhi Rd., Xinyi Dist., Taipei City 110411, Taiwan
Tel: 886-2-81777168

Tainan Office

No.111, Wudang Rd, Guiren District, Tainan City, 711010, Taiwan
Tel: 886-7-627-8168

Winbond Electronics (Suzhou) Limited

Room 1206, kingboard Plaza (Building B, 12 floor), No. 505,
Guangming Road,Huaqiao Town, Kunshan City,
Jiangsu Province, China.
Tel: 86-512-8163-8168

**Winbond Electronics (Suzhou) Limited -
Shenzhen Branch office**

8F Microprofit Building, Gaoxinnan 6 Road, High-Tech
Industrial Park, Nanshan Dist. Shenzhen, P.R. China
Tel: 86-755-33019858

Winbond Electronics (H.K.) Limited

Suites 23A 08-10, 23Ath Floor, The Gateway, Tower 2,
25 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong
Tel: 852-27513126

Winbond Electronics Corporation Japan

Shin-Yokohama Square Bldg. 9F 2-3-12 Shin-Yokohama,
Kouhoku-Ku, Yokohama, kanagawa 222-0033, Japan
Tel: 81-45-4781881

Miraxia Edge Technology Corporation

1 Kotari-yakemachi, Nagaokakyo City, Kyoto 617-8520, Japan
Tel: 81-75-9569499

Atfields Manufacturing Technology Corporation

800 Higashiyama, Uozu City, Toyama 937-8585, Japan
Tel: 81-765-22-3138

Winbond Electronics Corporation America

2727 North First Street, San Jose, CA 95134, U.S.A.
Tel: 1-408-943-6666

**Winbond Electronics Corporation America-
Pleasanton office**

5934 Gibraltar Drive, Suite 200, Pleasanton, CA 94588, U.S.A.
Tel: 1-408-943-6666

Winbond Technology Ltd

1 Abba Eban Ave, Building B, First Floor, Herzliya: 4612101, Israel
Tel: 972 -9 -866 -0700

Winbond Electronics Germany GmbH

Konrad-Zuse-Platz 8, 81829 München, Germany
Tel: 49-162-511-1523

Technical Support   LinkedIn   Facebook