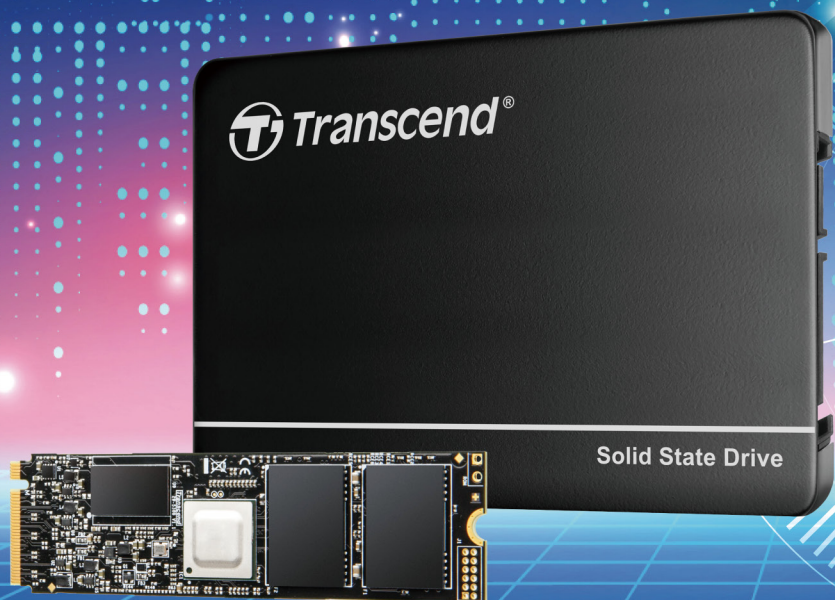


Product Overview

Embedded Solutions



Quality. Today and Tomorrow.

Advanced Technologies | Software Solutions

DRAM Modules | SSD Solutions | Memory Cards | Flash Solutions

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Manufacturing Base

About Transcend

30+ Years of Experience

Founded in 1988, Transcend Information Inc. is a leading global supplier of embedded memory products and storage solutions. Transcend has been granted over 140 patents for our award-winning products, developed by our in-house R&D team in close cooperation with our strategic component suppliers.

Global Support

Transcend operates 12 branch offices worldwide, including in Los Angeles, Maryland, Silicon Valley, Hamburg, Rotterdam, London, Tokyo, Seoul, Shanghai, Beijing, Shenzhen, and Hong Kong. Our headquarters and manufacturing site are both located in Taipei, creating an optimum product supply system with a global reach.

Stability & Reliability

Transcend utilizes selected components from 1st tier suppliers, and leverages advanced technologies such as Corner Bond, Anti-sulfur, Wide Temperature, SLC Mode, etc., to ensure reinforced structure, superior durability, and longer product use life under demanding industrial applications.



Our Strengths

Transcend's embedded storage solutions include SSDs, DRAM modules, memory cards, USB flash drives, and more, all designed to deliver advanced memory and storage technology. Our products can be found in applications across various industries, such as enterprise data servers, automotive, automated manufacturing, 5G networks, AIoT, healthcare, surveillance, and smart retail.

Top Quality Storage Solutions

- Branded chips to ensure the highest quality
- Exclusive software for efficient device management

R&D Expertise

- More than 140 patents
- 100+ person in-house R&D team
- Extensive embedded product development experience

Management of Product Life Cycle

- Embedded-grade product lifecycle management
- Fixed BOM management
- In-house ERP system
- Regular roadmap updates

Facilities & Production Process

- Highly automated production
- Rigorous reliability and environmental testing
- Stringent quality control: IQC, IPQC, FQC, OQC

Reliable Supply

- Strategic alliance and direct relationship with top-tier suppliers

Global Operation & Worldwide Support

- Professional technical support and failure analysis reports
- 12 branch offices worldwide
- Localized sales and FAE support

Applications

Transcend's embedded solutions are utilized across various industries.



Transportation

Fleet Management | Event Recorders | Navigation

Healthcare

Medical Tablets & AIO PCs | Medical Imaging | Patient Monitoring

Gaming

Casino Gaming | Lottery | Player Tracking

Automation

Robot Controllers | Human Machine Interfaces

Network & Telecom

Industrial Switches | 5G Base Stations | Network Security Appliances

Embedded Computing

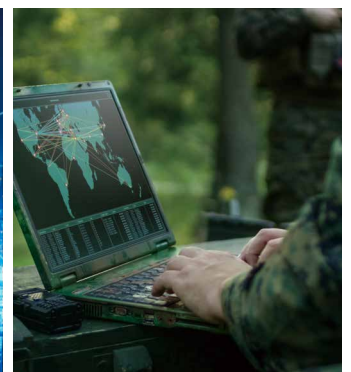
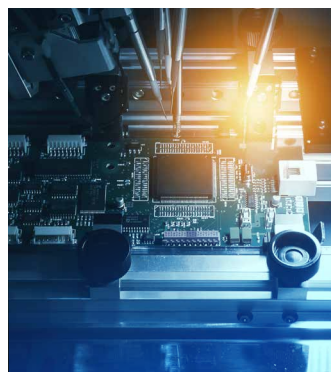
Digital Signage | Fanless PCs | Embedded PCs

AIoT

Edge Computing | AI Platforms

Defense

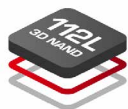
Rugged Laptops & Tablets | Rugged Rackmount Devices



Solutions & Technologies

Transcend utilizes various technologies to optimize the durability, reliability, and stability of our memory and storage devices. We can also provide customized services to adapt our products to your requirements.

DURABILITY



112-layer 3D NAND Flash

112-layer 3D NAND Flash technology delivers higher capacities, performance, endurance, and lower costs, making it an ideal solution for modern storage needs. Transcend's 112-layer 3D NAND SSDs provide high I/O performance and low latency, making them perfect for 5G, automotive, AIoT, and cloud computing applications.



Dynamic Thermal Throttling

Our Dynamic Thermal Throttling technology ensures that our SSDs operate within a safe temperature range, thereby protecting users' data and prolonging the product lifespan. A built-in thermal sensor in the controller constantly monitors the drive temperature, and when the temperature exceeds a safe level, drive speeds are throttled down until a safe temperature is reached.



SLC Mode

SLC Mode SSDs strike a cost-performance balance between different flash types by emulating the behavior of SLC NAND flash. This provides users with SLC-level endurance and performance at a reasonable cost.

SECURITY



TCG Opal Compliance

TCG Opal SEDs (self-encrypting drives) are ideal for industries where data security is of crucial importance. Transcend's Opal-compliant SSDs incorporate hardware-based AES 256-bit encryption; ensuring data is safeguarded starting from the manufacture of the storage device to system installation and management. Furthermore, TCG Opal compliant SSDs do not impact host performance since encryption and decryption are conducted on the drives themselves. Transcend's Opal-compliant SSDs offer sector-specific security, allowing managers to grant different permissions to each user, ensuring compartmentalized data security. The SSDs also feature pre-boot authentication; they can only be booted when the user is verified, preventing unauthorized access.



AES Encryption

The Advanced Encryption Standard (AES) is a FIPS-approved cryptographic algorithm specifically used to protect electronic data. Transcend's SSDs equipped with hardware-based AES provide a comprehensive solution for applications that handle sensitive data or require high data security.

RELIABILITY



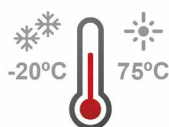
Anti-Sulfur Technology

Transcend's anti-sulfur DRAM modules meet the ISA Standard S71.04-2013 level G2 and the ASTM B809-95 standard. Anti-sulfur resistors, which have a protective layer above vulnerable silver alloys, are used exclusively to prevent malfunctions caused by sulfuration.



Wide Temperature

Transcend's products are stringently tested at the component level and at the device level within an extended thermal range. All wide-temperature products are required to pass rigorous tests conducted in a temperature and humidity chamber to ensure reliable performance in temperatures ranging from -40°C to 85°C. Wide-temperature DDR4 and DDR5 memory modules are tested to operate between -40°C to 95°C.



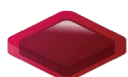
Extended Temperature

Products rated for extended temperatures are designed for reliable operation in temperatures ranging from -20°C to 75°C. Transcend offers this as standard on a wide range of 112-layer and 96-layer 3D NAND SSDs.



Corner Bond & Underfill

Corner Bond / Underfill are technologies used to increase reliability under high thermal stress, high gravitational acceleration and high fatigue cycle applications. By spreading stresses throughout the key components with a mechanical bond, less stress is concentrated on the solder joints. It is widely used in applications where stringent thermal cycling performance and shock resistance are required.



Conformal Coating

Conformal Coating increases protection for Transcend's embedded flash modules and DRAM products against various harsh environmental conditions such as moisture, dust, corrosion, extreme temperature, and chemical contaminants. Acrylic coatings are the most preferred choice for embedded applications due to their excellent moisture and electrical resistance.

STABILITY



Power Loss Protection (PLP) & Power Shield (PS)

Power Loss Protection (PLP) and Power Shield (PS) are two technologies provided by Transcend to prevent internal NAND flash data loss during a sudden power outage. When power is lost, the drive controller will stop accepting new write commands to ensure data integrity. PLP SSDs utilize tantalum capacitors to increase the amount of time the drive controller has to flush data from DRAM into NAND flash. Power Shield technology provides a power loss protection mechanism to Transcend's flash memory cards, USB flash drives, and other portable devices. The technology ensures that the device can complete the ongoing write operation and prevent data corruption or loss due to power interruption.

Embedded Software Solutions

Leverage our embedded software solutions to stand out from the others. See how Transcend can empower your business and boost your growth.



SDK Available

Software Development Kits (SDKs) can be provided to adapt our software to many operating systems.



Software and Hardware Integration

Seamlessly integrate hardware and software for complex applications.



From Edge to Cloud

Work in tandem between the cloud and the edge to achieve utmost flexibility.



Broad Support

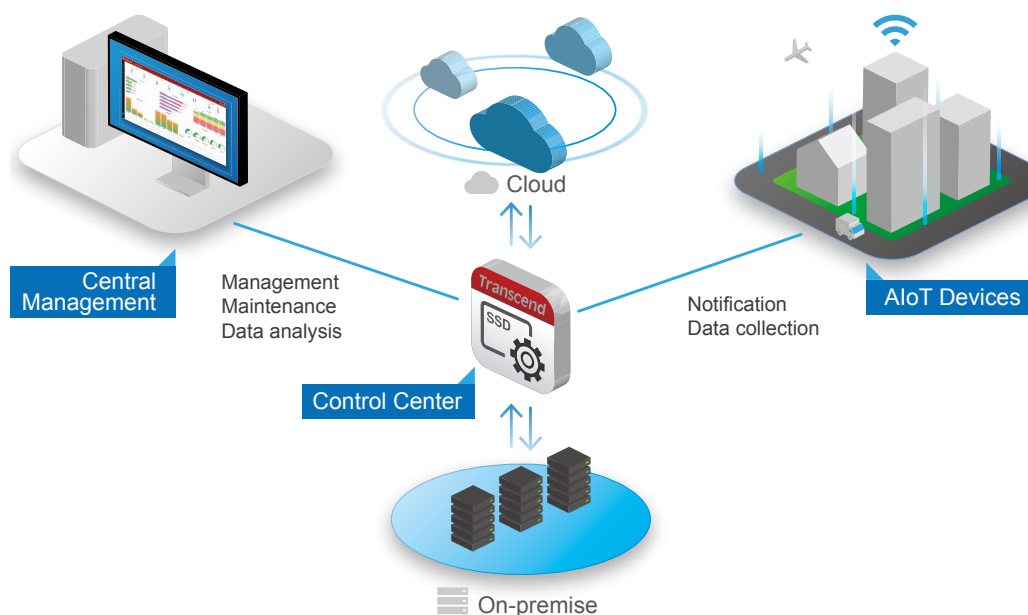
Our software solutions build strong foundations for SSDs, DRAM, flash and other devices.

Control Center

Management



Transcend's Control Center allows users to easily manage and monitor multiple storage devices deployed at the edge. Our SaaS solution is platform-agnostic and can be deployed on either public cloud services such as AWS or Azure or on private clouds.



Consolidated Information

Offers data analysis and clear information on an intuitive interface to help users make informed decisions.

Remote upgrade & monitoring

Allows for remote monitoring of device health status and firmware updates.

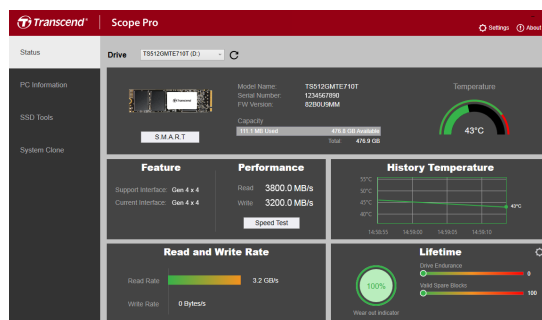
Early Warning System (EWS) & Instant Notices

Detects potential issues and notifies users in real-time, enabling them to take proactive measures.



Transcend's Scope Pro is a convenient software package suitable for offline embedded systems. It offers useful features such as drive information, S.M.A.R.T. analysis, diagnostic scans, health checks, and system cloning.

*Scope Pro CLI for Linux OS.



Efficient Monitoring

Monitor the health status of devices, including available, used, and total capacity, temperature, endurance, bad blocks, and wear-out indicators.

Optimized Performance

Conduct speed tests and health scans. Rearrange data stored in SSDs or SD/microSD cards to optimize performance.

System Clone

Perform a system clone by duplicating the operating system (OS), programs, and user data to a new Transcend SSD.

TCG Opal Toolbox | ATA Security Toolbox | UFD Security Toolbox

Transcend offers a wide range of security toolboxes for use with our embedded solutions to enhance data security.



Utilize the Opal Toolbox to configure passwords, locking ranges, initiate pre-boot authentication (PBA), and revert functions to increase drive security.



Determine the desired security level and perform lock, unlock, and drive erase functions.

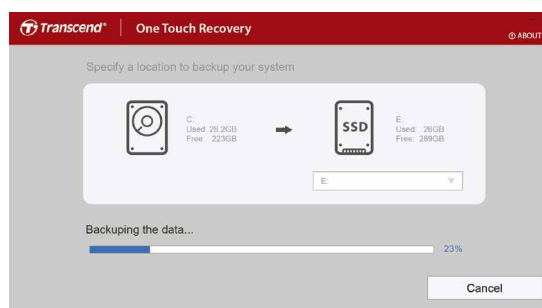


Enable write protect and OTP functions to increase the security of USB flash drives.

One Touch Recovery



One Touch Recovery safeguards digital assets by backing up crucial data to hidden partitions.



Enhanced Efficiency

By backing up data beforehand, One Touch Recovery eliminates the hours spent restoring compromised systems.

Flexible Customization

Back up and restore data from user-defined disks. The maximum number of disks is tailored to fit each user's requirements.

Remote Backup & Recovery

Can be operated remotely, allowing users to respond to emergency situations quickly, minimizing downtime and related costs.

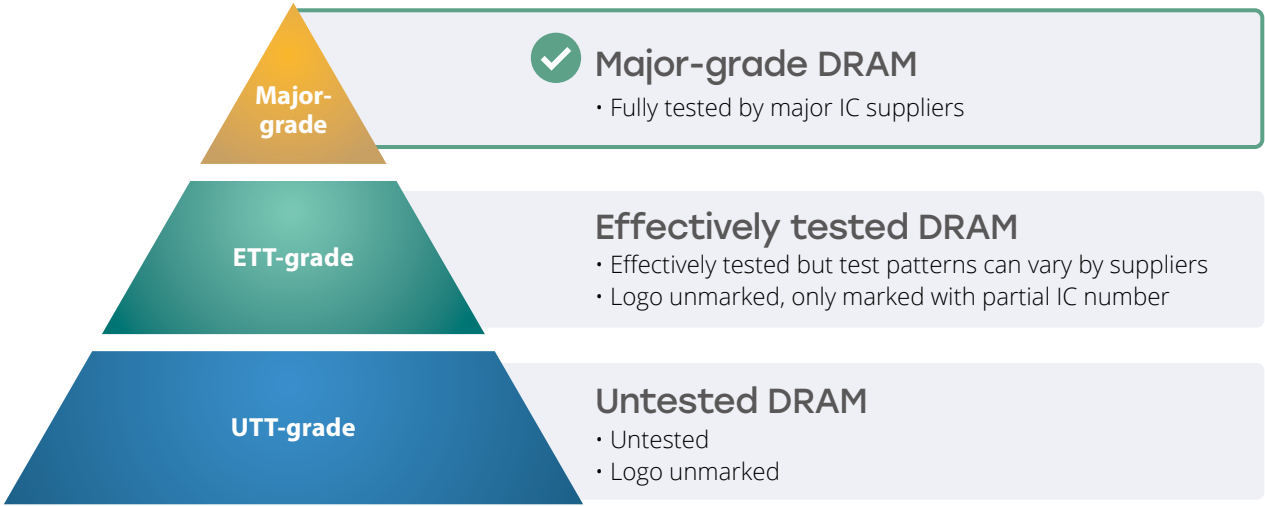
DRAM Modules

Transcend's DRAM modules are offered in a variety of form factors to accommodate different embedded devices used in industrial applications. Each DRAM module is manufactured using only the highest-quality DRAM memory chips and components, and is individually tested to ensure stability and compatibility.



IC Grade

Transcend's industrial-grade DRAM memory modules only utilize major-grade DRAM chips which have undergone the original IC manufacture's in-house testing procedures.



Product Line

	Module Type	Speed (MT/s)	Operating Temperature	Capacity
DDR5	Unbuffered Long-DIMM / Unbuffered SO-DIMM	4800	0°C~95°C / -40°C~95°C	8GB~32GB
	ECC Long-DIMM / ECC SO-DIMM			16GB~32GB
	Registered Long-DIMM			16GB~32GB
DDR4	Unbuffered Long-DIMM/ Unbuffered SO-DIMM	3200	0°C~95°C / -40°C~95°C	4GB~32GB
		2666		2GB~32GB
	ECC Long-DIMM / ECC SO-DIMM	3200		4GB~32GB
		2666		4GB~32GB
	Registered Long-DIMM	3200		8GB~64GB
		2666		4GB~32GB
DDR3	Unbuffered Long-DIMM / Unbuffered SO-DIMM	1600	0°C~85°C / -40°C~85°C	1GB~8GB
	ECC Long-DIMM / ECC SO-DIMM			2GB~8GB
	Registered Long-DIMM		0°C~85°C	4GB~8GB

*Transcend offers technology customization options for selected models. Please contact us for more detailed information.

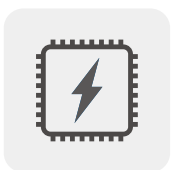
Product Highlights

DDR5 Memory Modules

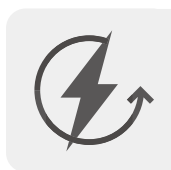
Unlock Next-Gen Performance and Efficiency

Transcend's embedded DDR5 4800 DRAM modules follow JEDEC standards, featuring high I/O throughput and low latency. The DDR5 standard introduces an on-DIMM power management integrated circuit (PMIC) that enables optimized energy control, improved power efficiency, and reduced signal complexity. The on-die ECC prevents bit errors, bringing together advanced data integrity and system reliability. Transcend's embedded DDR5 product line covers a variety of module types including Unbuffered Long-DIMM and SO-DIMM, ECC Long-DIMM and SO-DIMM, as well as Registered Long-DIMM. With 30 μ " gold finger PCBs and anti-sulfuration technology, Transcend's DDR5 modules deliver unmatched performance and reliability in high-performance computing (HPC) applications.

Key Features



Power Management
IC (PMIC)



1.1V Low Power
Supply



On-Die ECC



Major-Grade DRAM
Components



JEDEC®
Compliant



30 μ " PCB Gold Fingers

Extra-thick gold-plated connectors enhance signal transmission and prevent corrosion, ensuring long-term reliability.



Anti-Sulfuration

Anti-sulfur resistors are protected from sulfide contamination resulting from industrial environments and pollution.

DDR5



Module Type	Long-DIMM	SO-DIMM
Speed	4800 MT/s	
Capacity	8GB~32GB	
Voltage	1.1V	
PCB Height	1.23 inches	1.18 inches
30μ" PCB Gold Finger	Wide Temp. / ECC / Registered	
Anti-Sulfuration	Wide Temp. / ECC / Registered	
Operating Temperature	0°C~ 95°C / -40°C~ 95°C	

DDR5-4800 Unbuffered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	8GB	(1Gx16)x4	1Rx16	TS1GLA64V8G	TS1GSA64V8G
	16GB	(2Gx8)x8	1Rx8	TS2GLA64V8E	TS2GSA64V8E
	32GB	(2Gx8)x16	2Rx8	TS4GLA64V8E	TS4GSA64V8E
Wide Temp. (-40°C ~ 95°C)	8GB	(1Gx16)x4	1Rx16	TS1GLA64V8G-I	TS1GSA64V8G-I
	16GB	(2Gx8)x8	1Rx8	TS2GLA64V8E-I	TS2GSA64V8E-I
	32GB	(2Gx8)x16	2Rx8	TS4GLA64V8E-I	TS4GSA64V8E-I

DDR5-4800 ECC DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	16GB	(2Gx8)x10	1Rx8	TS2GLA72V8E	TS2GSA72V8E
	32GB	(2Gx8)x20	2Rx8	TS4GLA72V8E	TS4GSA72V8E
Wide Temp. (-40°C ~ 95°C)	16GB	(2Gx8)x10	1Rx8	TS2GLA72V8E-I	TS2GSA72V8E-I
	32GB	(2Gx8)x20	2Rx8	TS4GLA72V8E-I	TS4GSA72V8E-I

DDR5-4800 Registered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C ~ 95°C)	16GB	(2Gx8)x10	1Rx8	TS2GAR80V8E
	32GB	(2Gx8)x20	2Rx8	TS4GAR80V8E
Wide Temp. (-40°C ~ 95°C)	16GB	(2Gx8)x10	1Rx8	TS2GAR80V8E-I
	32GB	(2Gx8)x20	2Rx8	TS4GAR80V8E-I

DDR4



Module Type	Long-DIMM	SO-DIMM
Speed	3200/2666 MT/s	
Capacity	2GB~64GB	
Voltage	1.2V	
PCB Height	Standard: 1.23 inches Very Low Profile: 0.74 inches	1.18 inches
30μ" PCB Gold Finger	Wide Temp. / ECC / Registered	
Anti-Sulfuration	Wide Temp. / ECC / Registered	
Operating Temperature	0°C~ 95°C / -40°C~ 95°C	

DDR4-3200 Unbuffered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	4GB	(512Mx8)x8	1Rx8	TS512MLH64V2H	TS512MSH64V2H
		(512Mx16)x4	1Rx16	TS512MLH64V2D	TS512MSH64V2D
				TS512MLH64V2D3	TS512MSH64V2D3
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B	TS1GSH64V2B
		(1Gx16)x4	1Rx16	TS1GLH64V2B3	TS1GSH64V2B3
				TS1GLH64V2G	TS1GSH64V2G
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2B	TS2GSH64V2B
		(2Gx8)x8	1Rx8	TS2GLH64V2B3	TS2GSH64V2B3
				TS2GLH64V2E	TS2GSH64V2E
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E	TS4GSH64V2E
Wide Temp. (-40°C ~ 95°C)	4GB	(512Mx16)x4	1Rx16	TS512MLH64V2D-I	TS512MSH64V2D-I
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B-I	TS1GSH64V2B-I
		(1Gx16)x4	1Rx16	TS1GLH64V2G-I	TS1GSH64V2G-I
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2B-I	TS2GSH64V2B-I
		(2Gx8)x8	1Rx8	TS2GLH64V2E-I	TS2GSH64V2E-I
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E-I	TS4GSH64V2E-I
Very Low Profile (0°C ~ 95°C)	4GB	(512Mx8)x8	1Rx8	TS512MLH64V2HL	-
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2BL	-
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2BL	-

*DDR4 2400MT/s and 2133MT/s are also available.



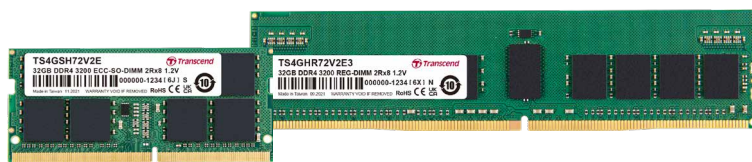
DDR4-2666 Unbuffered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	2GB	(256Mx16)x4	1Rx16	TS256MLH64V6X	TS256MSH64V6X
	4GB	(512Mx16)x4	1Rx16	TS512MLH64V6D	TS512MSH64V6D
		(512Mx8)x8	1Rx8	TS512MLH64V6H	TS512MSH64V6H
				TS512MLH64V6H3	TS512MSH64V6H3
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6B	TS1GSH64V6B
				TS1GLH64V6B3	TS1GSH64V6B3
		(512Mx8)x16	2Rx8	-	TS1GSH64V6H
Wide Temp. (-40°C ~ 95°C)	4GB	(512Mx16)x4	1Rx16	-	TS512MSH64V6D-I
		(512Mx8)x8	1Rx8	-	TS512MSH64V6H-I
	8GB	(1Gx8)x8	1Rx8	-	TS1GSH64V6B-I
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6B-I	TS2GSH64V6B-I
Very Low Profile (0°C ~ 95°C)	32GB	(2Gx8)x16	2Rx8	TS4GLH64V6E-I	TS4GSH64V6E-I
	2GB	(256Mx16)x4	1Rx16	TS256MLH64V6XL	-
	4GB	(512Mx8)x8	1Rx8	TS512MLH64V6HL	-
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6BL	-
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6BL	-

DDR4-3200 ECC DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	4GB	(512Mx8)x9	1Rx8	-	TS512MSH72V2H
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B	TS1GSH72V2B
				TS1GLH72V2B3	TS1GSH72V2B3
	16GB	(512Mx8)x18	2Rx8	-	TS1GSH72V2H
		(1Gx8)x18	2Rx8	TS2GLH72V2B	TS2GSH72V2B
		(2Gx8)x9	1Rx8	TS2GLH72V2E	TS2GSH72V2E
Wide Temp. (-40°C ~ 95°C)	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E	TS4GSH72V2E
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B-I	TS1GSH72V2B-I
				-	TS1GSH72V2B3-I
		(512Mx8)x18	2Rx8	-	TS1GSH72V2H-I
Very Low Profile (0°C ~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2B-I	TS2GSH72V2B-I
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E-I	TS4GSH72V2E-I
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2BL	-
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2BL	-
				TS2GLH72V2B3L	-

*DDR4 2400MT/s and 2133MT/s are also available.



DDR4-2666 ECC DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 95°C)	4GB	(512Mx8)x9	1Rx8	TS512MLH72V6H	TS512MSH72V6H
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6B TS1GLH72V6B3	TS1GSH72V6B -
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6B	TS2GSH72V6B
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V6E	TS4GSH72V6E
Wide Temp. (-40°C ~ 95°C)	4GB	(512Mx8)x9	1Rx8	-	TS512MSH72V6H-I
	8GB	(1Gx8)x9	1Rx8	-	TS1GSH72V6B-I
	16GB	(1Gx8)x18	2Rx8	-	TS2GSH72V6B-I
	32GB	(2Gx8)x18	2Rx8	-	TS4GSH72V6E-I
Very Low Profile (0°C ~ 95°C)	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6BL	-
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6BL	-

DDR4-3200 Registered DIMM

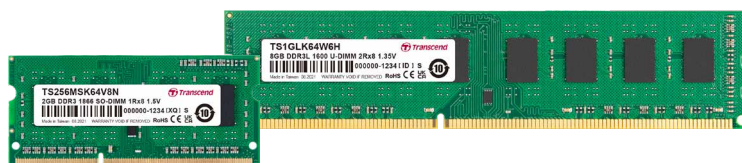
	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C ~ 95°C)	8GB	(1Gx8)x9	1Rx8	TS1GHR72V2B TS1GHR72V2B3
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2B TS2GHR72V2B3
		(2Gx8)x9	1Rx8	TS2GHR72V2E
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2E
		(2Gx4)x36	2Rx4	TS4GHR72V2C-SAM
		(4Gx4)x36	2Rx4	TS8GHR72V2F-SAM
	64GB	(4Gx4)x36	2Rx4	TS8GHR72V2F-SAM
Wide Temp. (-40°C ~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2B-I
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2E-I
Very Low Profile (0°C ~ 95°C)	8GB	(1Gx8)x9	1Rx8	TS1GHR72V2BL
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2BL
		(2Gx8)x9	1Rx8	TS2GHR72V2EL
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2EL
Very Low Profile+ Wide Temp. (-40°C ~ 95°C)	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2EL-I

DDR4-2666 Registered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C ~ 95°C)	4GB	(512Mx8)x9	1Rx8	TS512MHR72V6H
	8GB	(512Mx8)x18	2Rx8	TS1GHR72V6H
		(1Gx8)x9	1Rx8	TS1GHR72V6B
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V6B
Wide Temp. (-40°C ~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GHR72V6B-I
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V6E-I
Very Low Profile (0°C ~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GHR72V6BL

*DDR4 2400MT/s and 2133MT/s are also available.

DDR3

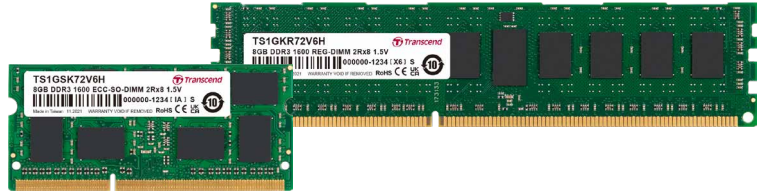


Module Type	Long-DIMM	SO-DIMM
Speed	1600 MT/s	
Capacity	2GB~8GB	
Voltage	Standard: 1.5V Low Voltage: 1.35V	
PCB Height	Standard: 1.18 inches Very Low Profile: 0.74 inches	1.18 inches
30μ" PCB Gold Finger	Wide Temp. / ECC / Registered	
Anti-Sulfuration	Wide Temp. / ECC / Registered	
Operating Temperature	0°C~ 85°C / -40°C~ 85°C	

DDR3-1600 Unbuffered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 85°C)	2GB	(256Mx8)x8	1Rx8	TS256MLK64V6N	TS256MSK64V6N
	4GB	(256Mx8)x16	2Rx8	TS512MLK64V6N	TS512MSK64V6N
		(512Mx8)x8	1Rx8	TS512MLK64V6H	TS512MSK64V6H
	8GB	(512Mx8)x16	2Rx8	TS1GLK64V6H	TS1GSK64V6H
Wide Temp. (-40°C ~ 85°C)	8GB	(512Mx8)x16	2Rx8	-	TS1GSK64V6H-I
Low Voltage (0°C ~ 85°C)	2GB	(256Mx8)x8	1Rx8	TS256MLK64W6N	TS256MSK64W6N
		(256Mx16)x4	1Rx16	-	TS256MSK64W6X
	4GB	(256Mx8)x16	2Rx8	TS512MLK64W6N	TS512MSK64W6N
		(512Mx8)x8	1Rx8	TS512MLK64W6H	TS512MSK64W6H
	8GB	(512Mx8)x16	2Rx8	TS1GLK64W6H	TS1GSK64W6H
Low Voltage+ Wide Temp. (-40°C ~ 85°C)	1GB	(128Mx8)x8	1Rx8	-	TS128MSK64W6U-I
	2GB	(256Mx8)x8	1Rx8	-	TS256MSK64W6N-I
	4GB	(256Mx8)x16	2Rx8	-	TS512MSK64W6N-I
		(512Mx8)x8	1Rx8	-	TS512MSK64W6H-I
	8GB	(512Mx8)x16	2Rx8	-	TS1GSK64W6H-I
Low Voltage+ Very Low Profile (0°C ~ 85°C)	4GB	(512Mx8)x8	1Rx8	TS512MLK64W6HL	-

*DDR3 1866MT/s and 1333MT/s are also available.



DDR3-1600 ECC DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C ~ 85°C)	2GB	(256Mx8)x9	1Rx8	TS256MLK72V6N	TS256MSK72V6N
	4GB	(512Mx8)x9	1Rx8	TS512MLK72V6H	-
		(256Mx8)x18	2Rx8	TS512MLK72V6N	-
	8GB	(512Mx8)x18	2Rx8	TS1GLK72V6H	TS1GSK72V6H
Low Voltage (0°C ~ 85°C)	2GB	(256Mx8)x9	1Rx8	TS256MLK72W6N	-
	4GB	(512Mx8)x9	1Rx8	TS512MLK72W6H	TS512MSK72W6H
	8GB	(512Mx8)x18	2Rx8	TS1GLK72W6H	TS1GSK72W6H
Low Voltage+ Wide Temp. (-40°C ~ 85°C)	2GB	(256Mx8)x9	1Rx8	-	TS256MSK72W6N-I
	4GB	(512Mx8)x9	1Rx8	-	TS512MSK72W6H-I
	8GB	(512Mx8)x18	2Rx8	-	TS1GSK72W6H-I
Low Voltage+ Very Low Profile (0°C ~ 85°C)	4GB	(512Mx8)x9	1Rx8	TS512MLK72W6HL	-
	8GB	(512Mx8)x18	2Rx8	TS1GLK72W6HL	-

DDR3-1600 Registered DIMM

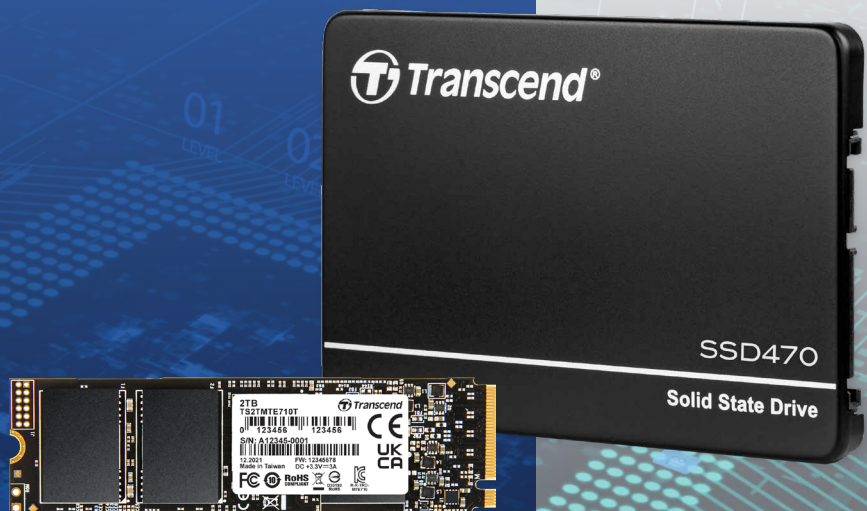
	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C ~ 85°C)	4GB	(256Mx8)x18	2Rx8	TS512MKR72V6N
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6H
Low Voltage (0°C ~ 85°C)	4GB	(512Mx8)x9	1Rx8	TS512MKR72W6H
	8GB	(512Mx8)x18	2Rx8	TS1GKR72W6H
Very Low Profile (0°C ~ 85°C)	4GB	(512Mx8)x9	1Rx8	TS512MKR72V6HL
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6HL

*DDR3 1866MT/s and 1333MT/s are also available.

SSD Solutions

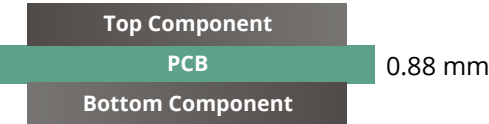
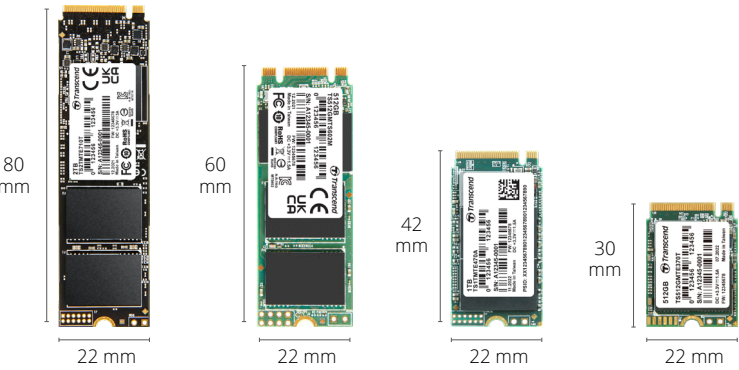
Transcend's Solid-State Drive (SSD) solutions offer fast and reliable performance in a wide variety of form factors, interfaces, and storage capacities suitable for devices operating in extreme industrial conditions. With support for Transcend's Power Shield (PS), Dynamic Thermal Throttling, and S.M.A.R.T. analysis technologies, our SSDs are designed for durability and reliability in large-scale embedded deployments.

Transcend also provides SSDs with technologies such as Power Loss Protection (PLP) to ensure data integrity in applications with unstable power supply; TCG Opal 2.0 to enhance data security; and SLC Mode to increase endurance and performance. These special product lines help address issues commonly encountered in embedded computing applications.



SSD Solutions

M.2 2280/2260/2242/2230



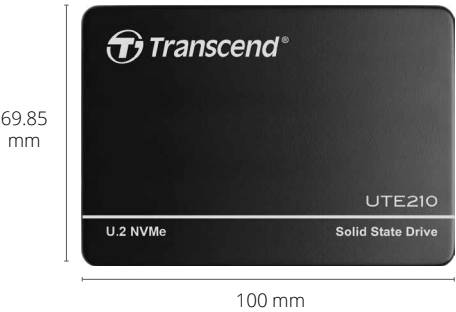
Height= PCB+Top+Bottom

An example: Type 2280-D2-M, D2=3.58 mm (0.88+1.35+1.35)

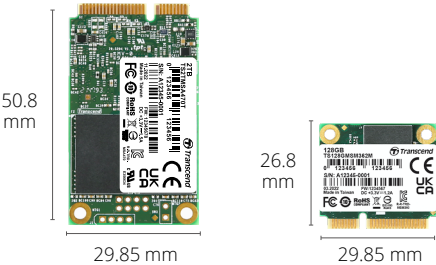
Type ID	Top Max	Bottom Max
S2	1.35 mm	-
S3	1.50 mm	-
D2	1.35 mm	1.35 mm
D5	1.50 mm	1.50 mm

(S: Single Sided, D: Double Sided)

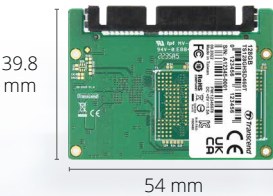
U.2 / 2.5"



mSATA / mSATA mini



Half-Slim



112-Layer 3D NAND Flash

Interface	Form Factor	Model	DRAM	Capacity	Feature
PCIe Gen4	U.2	UTE210T	●	512GB~8TB	PLP
	M.2 2280	MTE720T	●	512GB~4TB	
		MTE710T	●	256GB~2TB	
		MTE712A	●	256GB~2TB	TCG Opal
		MTE712P	●	256GB~2TB	PLP
		MTE560I	●	80GB~640GB	TCG Opal & SLC Mode
PCIe Gen3	M.2 2280	MTE670T	-	128GB~1TB	
		MTE672A	-	128GB~1TB	TCG Opal
	M.2 2242	MTE460T	-	128GB~1TB	
		MTE470A	-	128GB~1TB	TCG Opal
	M.2 2230	MTE370T	-	256GB~512GB	
SATA III	M.2 2280	MTS970T	●	128GB~4TB	
		MTS960T	-	64GB~2TB	
		MTS970A	●	128GB~4TB	TCG Opal
		MTS260I	●	40GB~1280GB	SLC Mode
		MTS250I	-	20GB~640GB	SLC Mode
	M.2 2242	MTS570T	●	128GB~1TB	
		MTS560T	-	64GB~1TB	
		MTS210I	●	40GB~320GB	SLC Mode
		MTS200I	-	20GB~320GB	SLC Mode
	2.5"	SSD470K	●	128GB~4TB	
		SSD460K	-	64GB~2TB	
		SSD470A	●	128GB~4TB	TCG Opal
		SSD470P	●	128GB~4TB	PLP
		SSD550I	●	40GB~1280GB	SLC Mode
	mSATA	MSA470T	●	128GB~2TB	
		MSA460T	-	64GB~2TB	
		MSA520I	●	40GB~320GB	SLC Mode
	Half-Slim	HSD460I	-	64GB~2TB	

96-Layer 3D NAND Flash

Interface	Form Factor	Model	DRAM	Capacity	Feature
PCIe	M.2 2280	MTE662T2	●	128GB~2TB	
		MTE652T2	●	64GB~512GB	
		MTE662P	●	128GB~1TB	PLP
	M.2 2242	MTE452T2	●	128GB~512GB	
	M.2 2230	MTE352T	-	128GB~512GB	
SATA III	M.2 2280	MTS952T2	●	64GB~2TB	
		MTS932T	-	64GB	
		MTS952P	●	128GB~1TB	PLP
	M.2 2242	MTS552T2	●	64GB~512GB	
		MTS532T	-	64GB	
		SSD452K2	●	64GB~2TB	
	2.5"	SSD452P	●	64GB~1TB	PLP
		SSD530K	●	64GB~128GB	SLC Mode
		SSD530K	●	64GB~128GB	SLC Mode
	mSATA	MSA452T2	●	64GB~1TB	
		MSA452P	●	64GB~128GB	PLP
	Half-Slim	HSD452T	●	64GB~256GB	

MLC NAND Flash

Interface	Form Factor	Model	DRAM	Capacity	Feature
SATA III	M.2 2280	MTS810M	●	32GB~256GB	
		MTS802M	●	32GB~1TB	
		MTS862K	●	16GB~32GB	SLC Mode
	M.2 2260	MTS602M	●	32GB~512GB	
	M.2 2242	MTS410M	●	16GB~128GB	
		MTS402M	●	16GB~512GB	
		MTS462K	●	8GB~16GB	SLC Mode
	2.5"	SSD422K	●	32GB~1TB	
		SSD420K	●	16GB~1TB	
		SSD420P	●	128GB~256GB	PLP
		SSD510K	●	16GB~128GB	SLC Mode
	mSATA	MSA380M	●	16GB~256GB	
		MSA372M	●	16GB~1TB	
		MSA510	●	32GB~128GB	SLC Mode
	mSATA mini	MSM362M	-	16GB~128GB	
	Half-Slim	HSD372M	●	16GB~128GB	

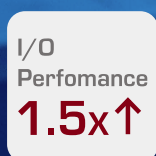
*Wide-temp. models (-40°C~85°C) & Advanced Encryption Standard (AES) provided upon request. Please contact us to know more.

Product Highlights

112-Layer 3D NAND SSDs

Experience the SSD revolution with Transcend's 112-layer 3D NAND flash technology, boasting high die density, large capacity, superior performance, and low cost per bit. With quality flash from top-tier suppliers, our 112-layer SSDs can withstand extended temperatures (-20°C~75°C) and provide industrial-grade reliability to tackle heavy workloads.

Key Features



Better I/O
Performance



Great
Endurance

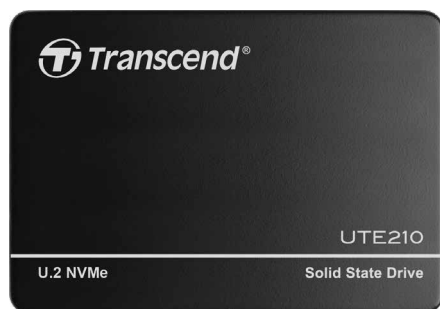


Thermal
Management



Rigorously
Tested

U.2 2.5" SSDs

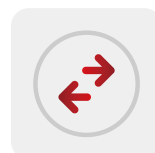


Introducing Transcend's latest embedded-grade U.2 SSD series, UTE210T. These high-capacity solid-state drives deliver competitive NVMe performance, perfect for data centers, hyperscale computing, media streaming, and big data analytics. With blazing-fast PCIe Gen 4x4 speeds, UTE210T U.2 SSDs ensure lightning-quick data processing and significantly improve system responsiveness under heavy workloads.

Key Features



Heat
Dissipation



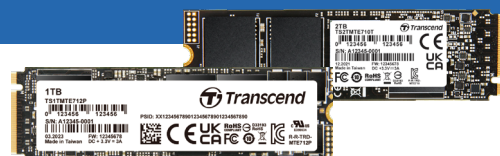
Hot
Swapping



Power Loss
Protection
(PLP)

Model	UTE210T
Interface	PCIe Gen4 x4 (8CH)
Capacity	512GB~8TB
Operating Temperature	-20°C~75°C
DRAM Cache	●
Power Loss Protection (PLP)	●
Performance (Sequential R/W*)	7,500/6,700 MB/s
Endurance (TBW*)	10,000 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.35 (3 years)
Form Factor	U.2
Dimensions	100 x 69.85 x 7 mm
Ordering Information	TS512GUTE210T ⋮ TS8TUTE210T

PCIe Gen4 M.2 2280



Model	MTE720T	MTE710T
Interface	PCIe Gen4 x4 (8CH)	PCIe Gen4 x4
Capacity	512GB~4TB	256GB~2TB
Operating Temperature	-20°C~75°C	
DRAM Cache	●	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	7,500/6,700 MB/s	3,800/3,200 MB/s
Endurance (TBW*)	5,920 TB	4,480 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	1.35 (3 years)	1.99 (3 years)
Form Factor	2280-D2-M	
Dimensions	80 x 22 x 3.58 mm	
Ordering Information	TS512GMTE720T ⋮ TS4TMTE720T	TS256GMTE710T ⋮ TS2TMTE710T

Model	MTE712A	MTE712P	MTE560I
Interface	PCIe Gen4 x4		
Capacity	256GB~2TB		80GB~640GB
Operating Temperature	-20°C~75°C		-40°C~85°C
DRAM Cache	●	●	●
TCG Opal	●	-	●
Power Loss Protection (PLP)	-	●	-
SLC Mode	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	3,800/3,200 MB/s		3,800/3,100 MB/s
Endurance (TBW*)	4,000 TB		38,000 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	1.84 (3 years)		54.2 (3 years)
Form Factor	2280-D2-M	2280-D5-M	2280-D2-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 3.88 mm	80 x 22 x 3.58 mm
Ordering Information	TS256GMTE712A ⋮ TS2TMTE712A	TS256GMTE712P ⋮ TS2TMTE712P	TS80GMTE560I ⋮ TS640GMTE560I

Graphene heatsink



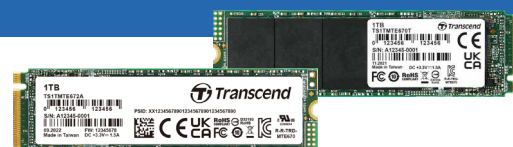
Aluminum heatsink

Optional Graphene or Aluminum Heatsink

Transcend offers optional ultra-thin graphene or high performance aluminum heatsink options to improve heat dissipation.

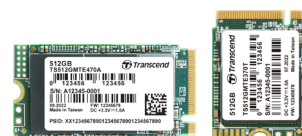
*Value varies by capacity, user hardware, system configuration, and calculation method.

PCIe Gen3 M.2 2280



Model	MTE670T	MTE672A
Interface	PCIe Gen3 x4	
Capacity	128GB~1TB	
Operating Temperature	-20°C~75°C	
DRAM Cache	-	-
TCG Opal	-	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	2,100/1,600 MB/s	
Endurance (TBW*)	960 TB	
Reliability (MTBF*)	3,000,000 hours	
DWPD*	0.88 (3 years)	
Form Factor	2280-S2-M	
Dimensions	80 x 22 x 2.23 mm	
Ordering Information	TS128GMTE670T ⋮ TS1TMTE670T	TS128GMTE672A ⋮ TS1TMTE672A

PCIe Gen3 M.2 2242/2230



Model	MTE460T	MTE470A	MTE370T
Interface	PCIe Gen3 x2		PCIe Gen3 x4
Capacity	128GB~1TB		256GB~512GB
Operating Temperature	-20°C~75°C		
DRAM Cache	-	-	-
TCG Opal	-	●	-
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	1,700/1,500 MB/s	2,000/1,700 MB/s	2,000/1,100 MB/s
Endurance (TBW*)	900 TB	900 TB	480 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	0.86 (3 years)		0.88 (3 years)
Form Factor	2242-D2-B-M	2242-S2-M	2230-S2-M
Dimensions	42 x 22 x 3.58 mm	42 x 22 x 2.23 mm	30 x 22 x 2.23 mm
Ordering Information	TS128GMTE460T	TS128GMTE470A	TS256GMTE370T
	⋮	⋮	
	TS1TMTE460T	TS1TMTE470A	TS512GMTE370T

R/W: Read/Write

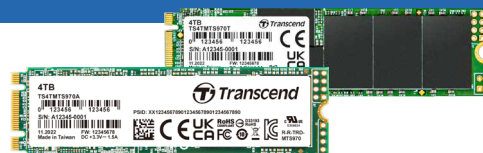
TBW: Terabytes Written

MTBF: Mean Time Between Failures

DWPD: Drive Writes Per Day

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III M.2 2280

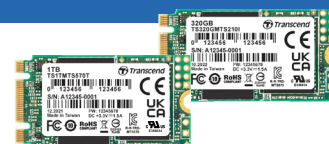


Model	MTS970T	MTS960T
Interface	SATA III 6Gb/s	
Capacity	128GB~4TB	64GB~2TB
Operating Temperature	-20°C~75°C	
DRAM Cache	●	-
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	9,680 TB	4,376 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	2.21 (3 years)	1.95 (3 years)
Form Factor	2280-D2-B-M	2280-S2-B-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm
Ordering Information	TS128GMTS970T ⋮ TS4TMTS970T	TS64GMTS960T ⋮ TS2TMTS960T

Model	MTS970A	MTS260I	MTS250I
Interface	SATA III 6Gb/s		
Capacity	128GB~4TB	40GB~1280GB	20GB~640GB
Operating Temperature	-20°C~75°C	-40°C~85°C	
DRAM Cache	●	●	-
TCG Opal	●	-	-
SLC Mode	-	●	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s		560/500 MB/s
Endurance (TBW*)	8,224 TB	73,248 TB	31,240 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	1.85 (3 years)	52.3 (3 years)	44.6 (3 years)
Form Factor	2280-D2-B-M		2280-S2-B-M
Dimensions	80 x 22 x 3.58 mm		80 x 22 x 2.23 mm
Ordering Information	TS128GMTS970A ⋮ TS4TMTS970A	TS40GMTS260I ⋮ TS1280GMTS260I	TS20GMTS250I ⋮ TS640GMTS250I

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III M.2 2242



Model	MTS570T	MTS560T
Interface	SATA III 6Gb/s	
Capacity	128GB~1TB	64GB~1TB
Operating Temperature	-20°C~75°C	
DRAM Cache	●	-
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	2,420 TB	2,188 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	2.16 (3 years)	1.95 (3 years)
Form Factor	2242-D2-B-M	
Dimensions	42 x 22 x 3.58 mm	
Ordering Information	TS128GMTS570T ⋮ TS1TMTS570T	TS64GMTS560T ⋮ TS1TMTS560T

Model	MTS210I	MTS200I
Interface	SATA III 6Gb/s	
Capacity	40GB~320GB	20GB~320GB
Operating Temperature	-40°C~85°C	
DRAM Cache	●	-
SLC Mode	●	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	18,312 TB	18,000 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	52.3 (3 years)	51.4 (3 years)
Form Factor	2242-D2-B-M	
Dimensions	42 x 22 x 3.58 mm	
Ordering Information	TS40GMTS210I ⋮ TS320GMTS210I	TS20GMTS200I ⋮ TS320GMTS200I

*Value varies by capacity, user hardware, system configuration, and calculation method.

112-Layer 3D NAND Flash

SATA III 2.5"



Model	SSD470K	SSD460K
Interface	SATA III 6Gb/s	
Capacity	128GB~4TB	64GB~2TB
Operating Temperature	-20°C~75°C	
DRAM Cache	●	-
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	9,680 TB	4,376 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	2.16 (3 years)	1.95 (3 years)
Dimensions	100 x 69.85 x 6.8 mm	
Ordering Information	TS128GSSD470K ⋮ TS4TSSD470K	TS64GSSD460K ⋮ TS2TSSD460K

Model	SSD470A	SSD470P	SSD550I
Interface	SATA III 6Gb/s		
Capacity	128GB~4TB		40GB~1280GB
Operating Temperature	-20°C~75°C		-40°C~85°C
DRAM Cache	●	●	●
TCG Opal	●	-	-
Power Loss Protection (PLP)	-	●	-
SLC Mode	-	-	●
Performance (Sequential R/W*)	560/520 MB/s		
Endurance (TBW*)	9,680 TB		66,840 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	2.16 (3 years)		47.7 (3 years)
Dimensions	100 x 69.85 x 6.8 mm		
Ordering Information	TS128GSSD470A ⋮ TS4TSSD470A	TS128GSSD470P ⋮ TS4TSSD470P	TS40GSSD550I ⋮ TS1280GSSD550I

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III mSATA



Model	MSA470T	MSA460T	MSA520I
Interface	SATA III 6Gb/s		
Capacity	128GB~2TB	64GB~2TB	40GB~320GB
Operating Temperature	-20°C~75°C		
DRAM Cache	●	-	●
SLC Mode	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s	560/520 MB/s
Endurance (TBW*)	4,840 TB	3,920 TB	16,710 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	2.16 (3 years)	1.75 (3 years)	52.3 (3 years)
Form Factor	MO-300A		
Dimensions	50.8 x 29.85 x 4.85 mm		
Ordering Information	TS128GMSA470T ⋮ TS2TMSA470T	TS64GMSA460T ⋮ TS2TMSA460T	TS40GMSA520I ⋮ TS320GMSA520I

SATA III Half-Slim



Model	HSD460I
Interface	SATA III 6Gb/s
Capacity	64GB~2TB
Operating Temperature	-40°C~85°C
DRAM Cache	-
Corner Bond	●
30μ" PCB Gold Finger	-
Performance (Sequential R/W*)	560/500 MB/s
Endurance (TBW*)	3,920 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.75 (3 years)
Form Factor	MO-297
Dimensions	54 x 39.8 x 4 mm
Ordering Information	TS64GHSD460I ⋮ TS2THSD460I

*Value varies by capacity, user hardware, system configuration, and calculation method.

PCIe Gen3 M.2 2280



Model	MTE662T2	MTE652T2	MTE662P
Interface		PCIe Gen3 x4	
Capacity	128GB~2TB	64GB~512GB	128GB~1TB
Operating Temperature		-20°C~75°C	
DRAM Cache	●	●	●
Power Loss Protection (PLP)	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	3,500/2,700 MB/s	2,100/1,250 MB/s	3,400/2,300 MB/s
Endurance (TBW*)	4,400 TB	1,080 TB	2,200 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*		2 (3 years)	
Form Factor		2280-D2-M	2280-D5-M
Dimensions		80 x 22 x 3.58 mm	80 x 22 x 3.88 mm
Ordering Information	TS128GMTE662T2 ⋮ TS2TMTE662T2	TS64GMTE652T ⋮ TS512GMTE652T	TS128GMTE662P ⋮ TS1TMTE662P

PCIe Gen3 M.2 2242/2230



Model	MTE452T2	MTE352T
Interface		PCIe Gen3 x2
Capacity		128GB~512GB
Operating Temperature		-20°C~75°C
DRAM Cache	●	-
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	1,700/1,250 MB/s	1,700/1,000 MB/s
Endurance (TBW*)		1,080 TB
Reliability (MTBF*)		3,000,000 hours
DWPD*	2 (3 years)	1.93 (3 years)
Form Factor	2242-D2-B-M	2230-S3-B-M
Dimensions	42 x 22 x 3.58 mm	30 x 22 x 2.38 mm
Ordering Information	TS128GMTE452T2 ⋮ TS512GMTE452T2	TS128GMTE352T ⋮ TS512GMTE352T

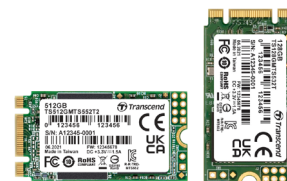
*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III M.2 2280



Model	MTS952T2	MTS932T	MTS952P
Interface	SATA III 6Gb/s		
Capacity	64GB~2TB	64GB	128GB~1TB
Operating Temperature	-20°C~75°C	0°C~70°C	-20°C~75°C
DRAM Cache	●	-	●
Power Loss Protection (PLP)	-	-	●
Corner Bond	●	-	●
30μ" PCB Gold Finger	●	-	●
Performance (Sequential R/W*)	560/520 MB/s	500/200 MB/s	560/520 MB/s
Endurance (TBW*)	3,520 TB	80 TB	1,760 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	1.61 (3 years)	1.16 (3 years)	1.61 (3 years)
Form Factor	2280-D2-B-M	2280-S2-B-M	2280-D5-B-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm	80 x 22 x 3.88 mm
Ordering Information	TS64GMTS952T2 ⋮ TS2TMTS952T2	TS64GMTS932T	TS128GMTS952P ⋮ TS1TMTS952P

SATA III M.2 2242



Model	MTS552T2	MTS532T
Interface	SATA III 6Gb/s	
Capacity	64GB~512GB	64GB
Operating Temperature	-20°C~75°C	0°C~70°C
DRAM Cache	●	-
Corner Bond	●	-
30μ" PCB Gold Finger	●	-
Performance (Sequential R/W*)	560/510 MB/s	500/200 MB/s
Endurance (TBW*)	880 TB	80 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	1.61 (3 years)	1.16 (3 years)
Form Factor	2242-D2-B-M	
Dimensions	42 x 22 x 3.58 mm	
Ordering Information	TS64GMTS552T2 ⋮ TS512GMTS552T2	TS64GMTS532T

*Value varies by capacity, user hardware, system configuration, and calculation method.

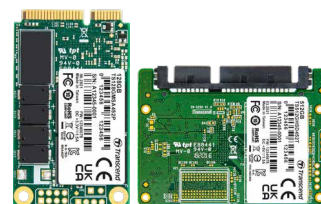
96-Layer 3D NAND Flash

SATA III 2.5"



Model	SSD452K2	SSD452P	SSD530K
Interface	SATA III 6Gb/s		
Capacity	64GB~2TB	64GB~1TB	64GB~128GB
Operating Temperature	-20°C~75°C		
DRAM Cache	●	●	●
Power Loss Protection (PLP)	-	●	-
SLC Mode	-	-	●
Performance (Sequential R/W*)	560/520 MB/s		560/490 MB/s
Endurance (TBW*)	3,520 TB	1,760 TB	6,400 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	1.61 (3 years)		45.7 (3 years)
Dimensions	100 x 69.85 x 6.8 mm		
Ordering Information	TS64GSSD452K2 ⋮ TS2TSSD452K2	TS64GSSD452P ⋮ TS1TSSD452P	TS64GSSD530K TS128GSSD530K

SATA III mSATA/Half-Slim



Model	MSA452T2	MSA452P	HSD452T
Interface	SATA III 6Gb/s		
Capacity	64GB~1TB	64GB~128GB	64GB~256GB
Operating Temperature	-20°C~75°C		
DRAM Cache	●	●	●
Power Loss Protection (PLP)	-	●	-
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	-
Performance (Sequential R/W*)	560/520 MB/s	560/410 MB/s	
Endurance (TBW*)	1,760 TB	220 TB	440 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	1.61 (3 years)		
Form Factor	MO-300A		MO-297
Dimensions	50.8 x 29.85 x 4.85 mm		54 x 39.8 x 4 mm
Ordering Information	TS64GMSA452T2 ⋮ TS1TMSA452T2	TS64GMSA452P TS128GMSA452P	TS64GHSD452T ⋮ TS256GHSD452T

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III M.2 2280



Model	MTS810M	MTS802M	MTS862K
Interface		SATA III 6Gb/s	
Capacity	32GB~256GB	32GB~1TB	16GB~32GB
Operating Temperature		0°C~70°C	
DRAM Cache	●	●	●
SLC Mode	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	550/420 MB/s	530/460 MB/s	530/150 MB/s
Endurance (TBW*)	740 TB	2,360 TB	580 TB
Reliability (MTBF*)		2,500,000 hours	
DWPD*		2.6 (3 years)	14.8 (3 years)
Form Factor		2280-D2-B-M	
Dimensions		80 x 22 x 3.58 mm	
Ordering Information	TS32GMTS810M ⋮ TS256GMTS810M	TS32GMTS802M ⋮ TS1TMTS802M	TS16GMTS862K TS32GMTS862K

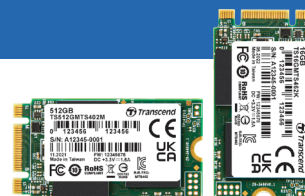
SATA III M.2 2260



Model	MTS602M
Interface	SATA III 6Gb/s
Capacity	32GB~512GB
Operating Temperature	0°C~70°C
DRAM Cache	●
Corner Bond	●
30μ" PCB Gold Finger	●
Performance (Sequential R/W*)	530/450 MB/s
Endurance (TBW*)	1,480 TB
Reliability (MTBF*)	2,500,000 hours
DWPD*	2.6 (3 years)
Form Factor	2260-D2-B-M
Dimensions	60 x 22 x 3.58 mm
Ordering Information	TS32GMTS602M ⋮ TS512GMTS602M

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III M.2 2242



Model	MTS410M	MTS402M	MTS462K
Interface		SATA III 6Gb/s	
Capacity	16GB~128GB	16GB~512GB	8GB~16GB
Operating Temperature		0°C~70°C	
DRAM Cache	●	●	●
SLC Mode	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	550/260 MB/s	530/470 MB/s	300/150 MB/s
Endurance (TBW*)	360 TB	1,100 TB	260 TB
Reliability (MTBF*)		2,500,000 hours	
DWPD*	2.6 (3 years)	2 (3 years)	15.2 (3 years)
Form Factor		2242-D2-B-M	
Dimensions		42 x 22 x 3.58 mm	
Ordering Information	TS16GMTS410M ⋮ TS128GMTS410M	TS16GMTS402M ⋮ TS512GMTS402M	TS8GMTS462K TS16GMTS462K

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III 2.5"

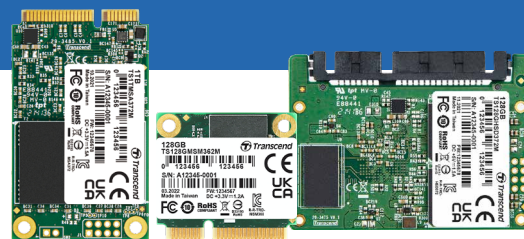


Model	SSD422K	SSD420K
Interface	SATA III 6Gb/s	
Capacity	32GB~1TB	16GB~1TB
Operating Temperature	0°C~70°C	
DRAM Cache	●	●
Performance (Sequential R/W*)	550/460 MB/s	530/470 MB/s
Endurance (TBW*)	2,940 TB	
Reliability (MTBF*)	2,000,000 hours	
DWPD*	2.6 (3 years)	
Dimensions	100 x 69.85 x 6.8 mm	
Ordering Information	TS32GSSD422K ⋮ TS1TSSD422K	TS16GSSD420K ⋮ TS1TSSD420K

Model	SSD420P	SSD510K
Interface	SATA III 6Gb/s	
Capacity	128GB~256GB	16GB~128GB
Operating Temperature	-20°C~75°C	0°C~70°C
DRAM Cache	●	●
Power Loss Protection (PLP)	●	-
SLC Mode	-	●
Performance (Sequential R/W*)	530/400 MB/s	530/440 MB/s
Endurance (TBW*)	720 TB	2,840 TB
Reliability (MTBF*)	2,000,000 hours	
DWPD*	2.6 (3 years)	15.2 (3 years)
Dimensions	100 x 69.85 x 6.8 mm	
Ordering Information	TS128GSSD420P TS256GSSD420P	TS16GSSD510K ⋮ TS128GSSD510K

*Value varies by capacity, user hardware, system configuration, and calculation method.

SATA III mSATA



Model	MSA380M	MSA372M	MSA510
Interface		SATA III 6Gb/s	
Capacity	16GB~256GB	16GB~1TB	32GB~128GB
Operating Temperature		0°C~70°C	
DRAM Cache	●	●	●
SLC Mode	-	-	●
Corner Bond	●	●	-
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	550/420 MB/s	550/450 MB/s	540/450 MB/s
Endurance (TBW*)	740 TB	2,360 TB	2,840 TB
Reliability (MTBF*)		2,500,000 hours	
DWPD*		2.6 (3 years)	20.7 (3 years)
Form Factor		MO-300A	
Dimensions		50.8 x 29.85 x 4.85 mm	
Ordering Information	TS16GMSA380M ⋮ TS256GMSA380M	TS16GMSA372M ⋮ TS1TMSA372M	TS32GMSA510 ⋮ TS128GMSA510

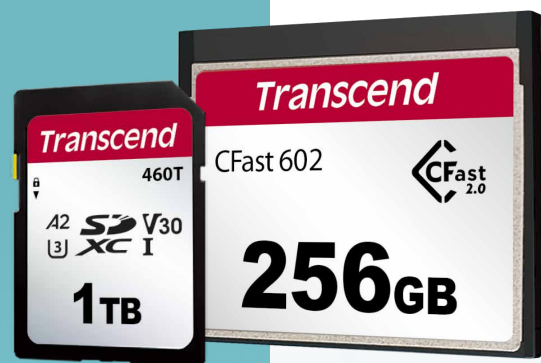
SATA III mSATA mini/Half-Slim

Model	MSM362M	HSD372M
Interface		SATA III 6Gb/s
Capacity		16GB~128GB
Operating Temperature		0°C~70°C
DRAM Cache	-	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	-
Performance (Sequential R/W*)	520/220 MB/s	530/200 MB/s
Endurance (TBW*)	168 TB	360 TB
Reliability (MTBF*)		2,500,000 hours
DWPD*	1.19 (3 years)	2.6 (3 years)
Form Factor	MO-300B	MO-297
Dimensions	26.85 x 26.8 x 3.85 mm	54 x 39.8 x 4 mm
Ordering Information	TS16GMSM362M ⋮ TS128GMSM362M	TS16GHSD372M ⋮ TS128GHSD372M

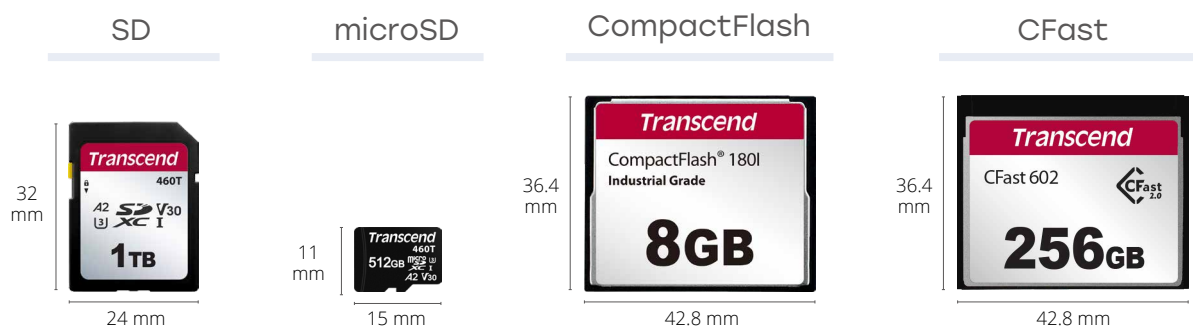
*Value varies by capacity, user hardware, system configuration, and calculation method.

Memory Cards

Transcend's memory cards combine the advantages of high performance and exceptional endurance, making them ideal for demanding industrial applications. Our memory card series includes SD, microSD, CompactFlash, and CFast 2.0 cards.



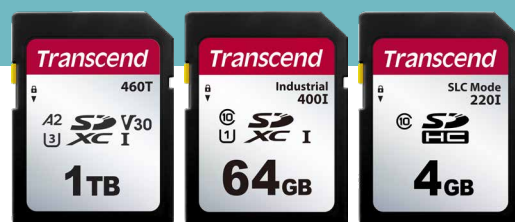
Memory Cards



Product Line

Form Factor	Model	Flash Type	Capacity	Operating Temperature
SD	SDC460T	112-layer 3D TLC	64GB~1TB	-25°C~85°C
	SDC240I	112-layer 3D TLC (SLC Mode)	20GB	-40°C~85°C
	SDC420T	96-layer 3D TLC	16GB~256GB	-25°C~85°C
	SDC410M	MLC	2GB~32GB	-25°C~85°C
	SDC400I		8GB~64GB	-40°C~85°C
	SDC220I	MLC (SLC Mode)	128MB~4GB	-40°C~85°C
microSD	USD460T / USD460I	112-layer 3D TLC	64GB~512GB	-25°C~85°C / -40°C~85°C
	USD240I	112-layer 3D TLC (SLC Mode)	20GB~160GB	-40°C~85°C
	USD430T	96-layer 3D TLC	32GB	-25°C~85°C
	USD420T		16GB~256GB	-25°C~85°C
	USD230I	96-layer 3D TLC (SLC Mode)	2GB~64GB	-40°C~85°C
	USD410M	MLC	2GB~32GB	-25°C~85°C
	USD400I		8GB~64GB	-40°C~85°C
	USD220I	MLC (SLC Mode)	2GB~16GB	-40°C~85°C
CompactFlash	CF170	MLC	8GB~64GB	-25°C~85°C
	CF180	MLC (SLC Mode)	4GB~16GB	-25°C~85°C
	CF180I		128MB~8GB	-40°C~85°C
Cfast	CFX602 / CFX602I	MLC	8GB~256GB	-5°C~70°C / -40°C~85°C
	CFX722I	MLC (SLC Mode)	4GB~128GB	-40°C~85°C

SD Cards



Model	SDC460T	SDC240I	SDC420T
Flash	112-layer 3D TLC	112-layer 3D TLC (SLC Mode)	96-layer 3D TLC**
Capacity	64GB~1TB	20GB	16GB~256GB
Operating Temperature	-25°C~85°C	-40°C~85°C	-25°C~85°C
Performance (Sequential R/W*)	100/85 MB/s	100/80 MB/s	95/40 MB/s
Endurance (TBW*)	2,660 TB	1,690 TB	640 TB
Standard	SD 6.1/5.1	SD 6.1	SD 6.1/3.01
Connector	9 pin		
Dimensions	24 x 32 x 2.1 mm		
Ordering Information	TS64GSDC460T ⋮ TS1TSDC460T	TS20GSDC240I	TS16GSDC420T ⋮ TS256GSDC420T

Model	SDC410M	SDC400I	SDC220I
Flash	MLC		MLC (SLC Mode)
Capacity	2GB~32GB	8GB~64GB	128MB~4GB
Operating Temperature	-25°C~85°C	-40°C~85°C	
Performance (Sequential R/W*)	95/30 MB/s	75/17 MB/s	22/20 MB/s
Endurance (TBW*)	86 TB	128 TB	66 TB
Standard	SD 5.1/3.0	SD 3.01	SD 3.01/2.0
Connector	9 pin		
Dimensions	24 x 32 x 2.1 mm		
Ordering Information	TS2GSDC410M ⋮ TS32GSDC410M	TS8GSDC400I ⋮ TS64GSDC400I	TS128MSDC220I ⋮ TS4GSDC220I

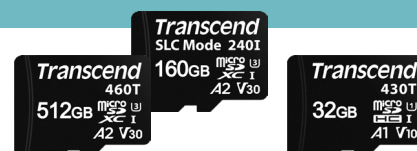
R/W: Read/Write

TBW: Terabytes Written

*Value varies by capacity, user hardware, system configuration, and calculation method.

**TS16GSDC420T utilizes 64-layer 3D TLC.

microSD Cards



Model	USD460T	USD460I	USD240I
Flash	112-layer 3D TLC		112-layer 3D TLC (SLC Mode)
Capacity	64GB~512GB		20GB~160GB
Operating Temperature	-25°C~85°C		-40°C~85°C
Performance (Sequential R/W*)	100/80 MB/s		
Endurance (TBW*)	1,343 TB		13,523 TB
Standard	SD 6.1/5.1		SD 6.1
Connector	8 pin		
Dimensions	11 x 15 x 1 mm		
Ordering Information	TS64GUSD460T ⋮ TS512GUSD460T	TS64GUSD460I ⋮ TS512GUSD460I	TS20GUSD240I ⋮ TS160GUSD240I

Model	USD430T	USD420T	USD230I
Flash	96-layer 3D TLC**		96-layer 3D TLC** (SLC Mode)
Capacity	32GB	16GB~256GB	2GB~64GB
Operating Temperature	-25°C~85°C		-40°C~85°C
Performance (Sequential R/W*)	100/40 MB/s	95/40 MB/s	100/70 MB/s
Endurance (TBW*)	83 TB	640 TB	5,800 TB
Standard	SD 6.0	SD 5.1/3.01	
Connector	8 pin		
Dimensions	11 x 15 x 1 mm		
Ordering Information	TS32GUSD430T	TS16GUSD420T ⋮ TS256GUSD420T	TS2GUSD230I ⋮ TS64GUSD230I

*Value varies by capacity, user hardware, system configuration, and calculation method.

**TS16GUSD420T, TS2GUSD230I, and TS4GUSD230I utilize 64-layer 3D TLC.

microSD Cards

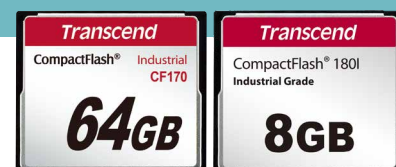


Model	USD410M	USD400I
Flash	MLC	
Capacity	2GB~32GB	8GB~64GB
Operating Temperature	-25°C~85°C	-40°C~85°C
Performance (Sequential R/W*)	95/50 MB/s	95/70 MB/s
Endurance (TBW*)	86 TB	125 TB
Standard	SD 5.1/3.0	SD 3.01
Connector	8 pin	
Dimensions	11 x 15 x 1 mm	
Ordering Information	TS2GUSD410M ⋮ TS32GUSD410M	TS8GUSD400I ⋮ TS64GUSD400I

Model	USD220I
Flash	MLC (SLC Mode)
Capacity	2GB~16GB
Operating Temperature	-40°C~85°C
Performance (Sequential R/W*)	80/45 MB/s
Endurance (TBW*)	300 TB
Standard	SD 3.01/2.0
Connector	8 pin
Dimensions	11 x 15 x 1 mm
Ordering Information	TS2GUSD220I ⋮ TS16GUSD220I

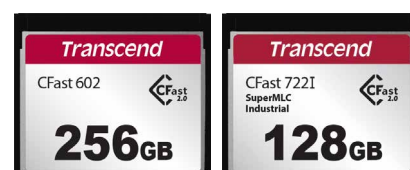
*Value varies by capacity, user hardware, system configuration, and calculation method.

CompactFlash Cards



Model	CF170	CF180	CF180I
Flash	MLC	MLC (SLC Mode)	
Capacity	8GB~64GB	4GB~16GB	128MB~8GB
Operating Temperature	-25°C~85°C		-40°C~85°C
Performance (Sequential R/W*)	87/67 MB/s	85/75 MB/s	85/70 MB/s
Endurance (TBW*)	85 TB	210 TB	105 TB
Standard	True IDE		
Connector	50 pin		
Dimensions	42.8 x 36.4 x 3.3 mm		
Ordering Information	TS8GCF170	TS4GCF180	TS128MCF180I
	⋮	⋮	⋮
	TS64GCF170	TS16GCF180	TS8GCF180I

CFast Cards

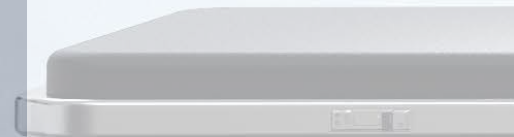
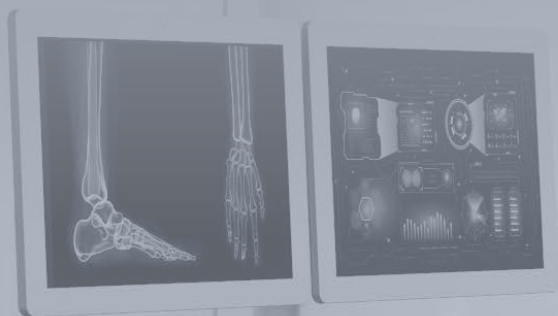


Model	CFX602	CFX602I	CFX722I
Flash	MLC		MLC (SLC Mode)
Capacity	8GB~256GB		4GB~128GB
Operating Temperature	-5°C~70°C		-40°C~85°C
Performance (Sequential R/W*)	510/340 MB/s		510/355 MB/s
Endurance (TBW*)	360 TB		1,800 TB
Standard	SATA III 6Gb/s		
Connector	24 pin		
Dimensions	42.8 x 36.4 x 3.3 mm		
Ordering Information	TS8GCFX602	TS8GCFX602I	TS4GCFX722I
	⋮	⋮	⋮
	TS256GCFX602	TS256GCFX602I	TS128GCFX722I

*Value varies by capacity, user hardware, system configuration, and calculation method.

Flash Solutions

Transcend's flash solutions include USB flash drives, USB flash modules, and eMMC. Our USB flash drives feature a compact and portable design, ideal for applications where reliability and data retention are crucial. Our flash modules offer a simple solution for integrating SSD storage technology into legacy PC- and laptop-based systems.

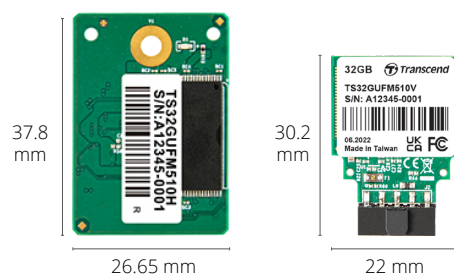


Flash Solutions

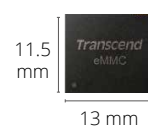
USB Flash Drive



USB Flash Module



e.MMC



Product Line

Form Factor	Model	Flash Type	Capacity	Operating Temperature
USB Flash Drives	JF282T	112-layer 3D TLC	64GB~512GB	0°C~70°C
	JF180I	112-layer 3D TLC (SLC Mode)	8GB~16GB	-40°C~85°C
	JF280T	96-layer 3D TLC	16GB~128GB	0°C~70°C
	JF270M	MLC	8GB~32GB	0°C~70°C
	JF740K	MLC (SLC Mode)	8GB	0°C~70°C
USB Flash Modules	UFM510H	MLC	2GB~32GB	0°C~70°C
	UFM510V		8GB~32GB	0°C~70°C
e.MMC	EMC410T	96-layer 3D TLC	32GB	-25°C~85°C
	EMC310M	MLC	8GB~16GB	-25°C~85°C

USB Flash Drives



Model	JF282T	JF180I	JF280T
Flash	112-layer 3D TLC	112-layer 3D TLC** (SLC Mode)	96-layer 3D TLC**
Capacity	64GB~512GB	8GB~16GB	16GB~128GB
Operating Temperature	0°C~70°C	-40°C~85°C	0°C~70°C
Performance (Sequential R/W*)	260/70 MB/s	155/135 MB/s	140/40 MB/s
Interface	USB 3.1 Gen 1	USB 3.0	USB 3.1 Gen 1
Connector	USB Type-A		
Dimensions	61.5 x 18.6 x 8.7 mm		
Ordering Information	TS64GJF282T ⋮ TS512GJF282T	TS8GJF180I TS16GJF180I	TS16GJF280T ⋮ TS128GJF280T

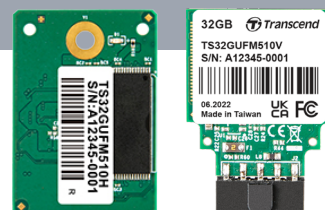
Model	JF270M	JF740K
Flash	MLC	MLC (SLC Mode)
Capacity	8GB~32GB	8GB
Operating Temperature	0°C~70°C	
Performance (Sequential R/W*)	160/40 MB/s	119/86 MB/s
Interface	USB 3.1 Gen 1	
Connector	USB Type-A	
Dimensions	61.5 x 18.6 x 8.7 mm	22.4 x 12.2 x 6 mm
Ordering Information	TS8GJF270M ⋮ TS32GJF270M	TS8GJF740K

R/W: Read/Write

*TS8GJF180I utilizes 96-layer 3D TLC. TS16GJF280T utilizes 64-layer 3D TLC.

**Value varies by capacity, user hardware, system configuration, and calculation method.

USB Flash Modules



Model	UFM510H	UFM510V
Flash	MLC	
Capacity	2GB~32GB	8GB~32GB
Operating Temperature	0°C~70°C	
Performance (Sequential R/W*)	42/21 MB/s	
Interface	USB 2.0	
Connector	10 pin USB port	
Dimensions	37.8 x 26.65 x 5.81 mm	30.2 x 22 x 6 mm
Ordering Information	TS2GUFM510H ⋮ TS32GUFM510H	TS8GUFM510V ⋮ TS32GUFM510V

e.MMC



Model	EMC410T	EMC310M
Flash	96-layer 3D TLC	MLC
Capacity	32GB	8GB~16GB
Operating Temperature	-25°C~85°C	
Performance (Sequential R/W*)	290/155 MB/s	280/100 MB/s
Form Factor	e.MMC5.1 (BGA-153)	
Dimensions	11.5 x 13 x 1 mm	
Bus Speed Mode	HS400	
Bus Width Supported	x1, x4, x8	
Clock Frequency Supported	0MHz~200MHz	
Ordering Information	TS32GEMC410T	TS8GEMC310M TS16GEMC310M

*Value varies by capacity, user hardware, system configuration, and calculation method.

World-Class Manufacturing Base

High-Speed SMT Lines

Transcend operates 16 high-speed Surface Mount Technology (SMT) production lines in its Taipei factory. Highly automated facilities are widely implemented to guarantee consistent quality, high capacity, and to minimize human errors.

Proven Quality

From product development to mass production, Transcend follows rigorous procedures to ensure products deliver advanced reliability and stability. We conduct environmental testing in walk-in chambers where different temperatures and humidity can be simulated. We also carry out full-scale burn-in tests to identify defective components. Certified by ISO 9001, ISO 14001, and QC080000 certifications, we operate our manufacturing process under internationally-acknowledged standards.

Quality Control

Transcend adopts a stringent quality control process in production. The process includes four stages: Incoming Quality Control (IQC), In-Process Quality Control (IPQC), Final Quality Control (FQC), and Outgoing Quality Control (OQC). The entire QC process covers material checking at the very beginning, through to final inspection before the products are shipped to our customers.





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