

**PRODUCT OVERVIEW**

# Embedded Solutions

**INNOVATING MEMORIES, CONNECTING LIVES**



DRAM Modules | SSD Solutions | Memory Cards | Flash Solutions

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# About Transcend

## 30+ Years of Experience

Founded in 1989, Transcend Information Inc. is a leading global supplier of embedded memory products and storage solutions. Transcend has been granted over 150 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 11 branch offices worldwide, including in Los Angeles, Maryland, 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 150 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
- 11 branch offices worldwide
- Localized sales and FAE support



# Applications

Transcend's embedded solutions are utilized across various industries.



## Gaming

- Casino Gaming
- Lottery
- Player Tracking



## Automation

- Robot Controllers
- Human Machine Interfaces
- Digital Twin Technology



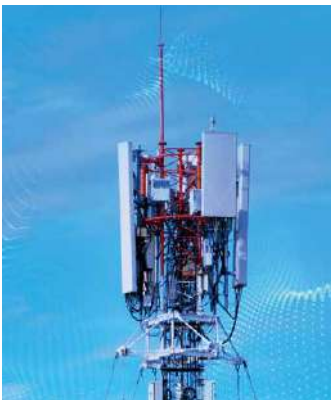
## Healthcare

- Medical Tablets & AIO PCs
- Medical Imaging
- Patient Monitoring



## Transportation

- Fleet Management
- Event Recorders
- FSD (Full Self Driving) Auxillary System



## Network & Telecom

- Industrial Switches
- 5G Base Stations
- Network Security Appliances



## Embedded Computing

- Digital Signage
- Fanless PCs
- Embedded PCs



## AIoT

- Edge Computing
- Smart City



## 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

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### 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

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### 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

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### 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

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### 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

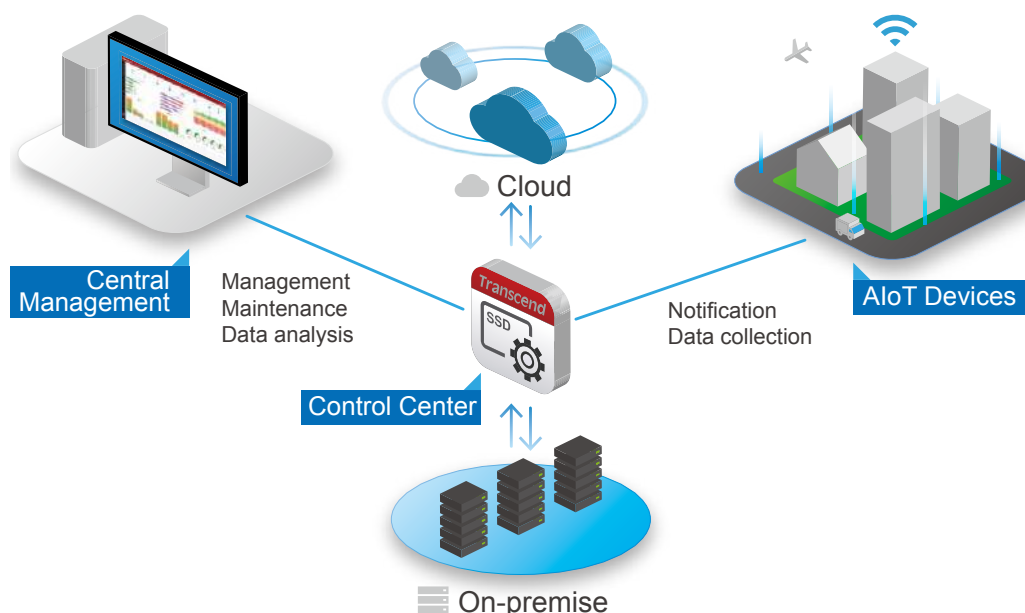
Our software solutions build strong foundations for SSDs, DRAM, flash and other devices.

## 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.

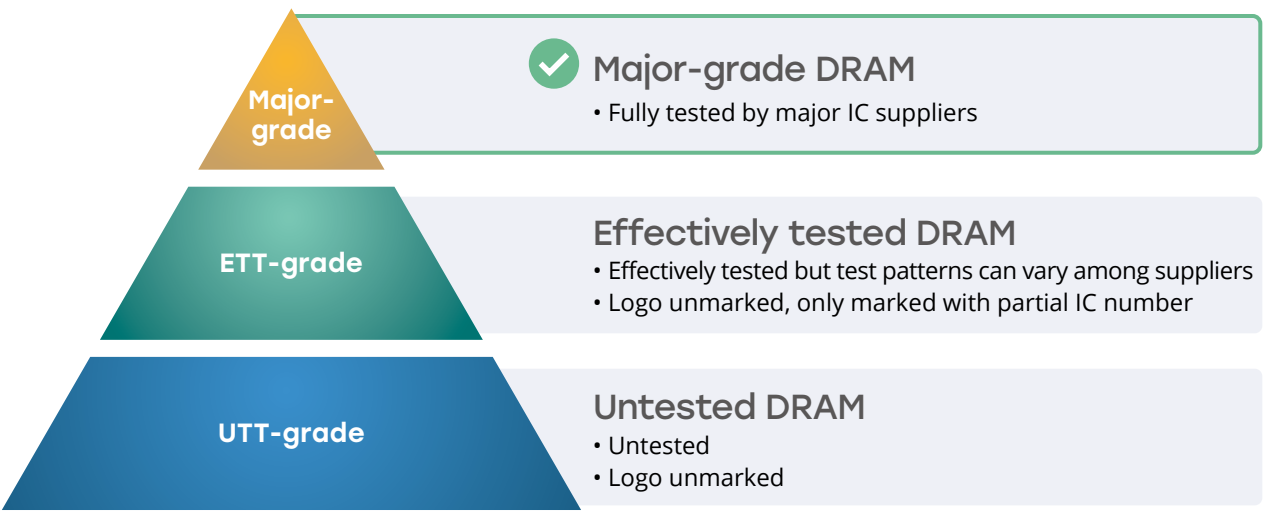
# DRAM Modules

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	5600	0°C~95°C / -40°C~95°C	8GB~32GB
		4800		
	ECC Long-DIMM / ECC SO-DIMM	5600		16GB~32GB
		4800		
	Registered Long-DIMM	5600		16GB~64GB
		4800		
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.



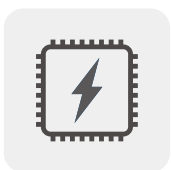
# Product Highlights

## DDR5 Memory Modules

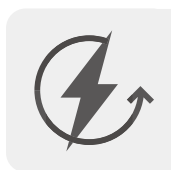
### Unlock Next-Gen Performance and Efficiency

Transcend's embedded DDR5 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 30μ" 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

JEDEC®  
Compliant



### 30μ" 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	5600/4800 MT/s	
Capacity	8GB~64GB	
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	

## DDR5-5600 Unbuffered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~95°C)	8GB	(1Gx16)x4	1Rx16	TS1GLA64V6G	TS1GSA64V6G
	16GB	(2Gx8)x8	1Rx8	TS2GLA64V6E	TS2GSA64V6E
	32GB	(2Gx8)x16	2Rx8	TS4GLA64V6E	TS4GSA64V6E
Wide Temp. (-40°C~95°C)	8GB	(1Gx16)x4	1Rx16	TS1GLA64V6G-I	TS1GSA64V6G-I
	16GB	(2Gx8)x8	1Rx8	TS2GLA64V6E-I	TS2GSA64V6E-I
	32GB	(2Gx8)x16	2Rx8	TS4GLA64V6E-I	TS4GSA64V6E-I

## 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



## DDR5-5600 ECC DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~95°C)	16GB	(2Gx8)x10	1Rx8	TS2GLA72V6E	TS2GSA72V6E
	32GB	(2Gx8)x20	2Rx8	TS4GLA72V6E	TS4GSA72V6E
Wide Temp. (-40°C~95°C)	16GB	(2Gx8)x10	1Rx8	TS2GLA72V6E-I	TS2GSA72V6E-I
	32GB	(2Gx8)x20	2Rx8	TS4GLA72V6E-I	TS4GSA72V6E-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

## DDR5-5600 Registered DIMM

	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C~95°C)	16GB	(2Gx8)x10	1Rx8	TS2GAR80V6E
	32GB	(2Gx8)x20	2Rx8	TS4GAR80V6E
Wide Temp. (-40°C~95°C)	16GB	(2Gx8)x10	1Rx8	TS2GAR80V6E-I
	32GB	(2Gx8)x20	2Rx8	TS4GAR80V6E-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
	64GB	(4Gx4)x40	2Rx4	TS8GAR80V8F-SAM
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	-	TS512MSH64V2H2
		(512Mx16)x4	1Rx16	TS512MLH64V2D2	TS512MSH64V2D2
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B2	TS1GSH64V2B2
		(1Gx16)x4	1Rx16	-	TS1GSH64V2G2
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2B2	TS2GSH64V2B2
		(2Gx8)x8	1Rx8	TS2GLH64V2E2	TS2GSH64V2E2
Wide Temp. (-40°C~95°C)	4GB	(512Mx8)x8	1Rx8	-	TS512MSH64V2H2-I
		(512Mx16)x4	1Rx16	TS512MLH64V2D-I	TS512MSH64V2D2-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
Very Low Profile (0°C~95°C)	4GB	(512Mx8)x8	1Rx8	TS512MLH64V2HL	-
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2BL	-
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2BL	-
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E2L	-

\*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
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6B	TS1GSH64V6B
		(512Mx8)x16	2Rx8	-	TS1GSH64V6H
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6B	TS2GSH64V6B
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
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V6E-I	TS4GSH64V6E-I
Very Low Profile (0°C~95°C)	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
		(512Mx8)x9	1Rx8	-	TS512MSH72V2H2
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B	TS1GSH72V2B
		(1Gx8)x9	1Rx8	-	TS1GSH72V2B2
		(512Mx8)x18	2Rx8	-	TS1GSH72V2H
		(512Mx8)x18	2Rx8	-	TS1GSH72V2H2
		(1Gx8)x18	2Rx8	TS2GLH72V2B	TS2GSH72V2B
	16GB	(1Gx8)x18	2Rx8	-	TS2GSH72V2B2
		(2Gx8)x9	1Rx8	TS2GLH72V2E	TS2GSH72V2E
		(2Gx8)x9	1Rx8	TS2GLH72V2E2	TS2GSH72V2E2
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E	TS4GSH72V2E
		(2Gx8)x18	2Rx8	TS4GLH72V2E2	TS4GSH72V2E2
Wide Temp. (-40°C~95°C)	4GB	(512Mx8)x9	1Rx8	-	TS512MSH72V2H2-I
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B-I	TS1GSH72V2B-I
		(512Mx8)x18	2Rx8	-	TS1GSH72V2H-I
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2B-I	TS2GSH72V2B-I
		(2Gx8)x9	1Rx8	-	TS2GSH72V2E-I
Very Low Profile (0°C~95°C)	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2BL	-
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2BL	-

\*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	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
		(1Gx8)x9	1Rx8	TS1GHR72V2B2
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2B
		(1Gx8)x18	2Rx8	TS2GHR72V2B2
		(2Gx8)x9	1Rx8	TS2GHR72V2E
		(2Gx8)x9	1Rx8	TS2GHR72V2E2
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2E
		(2Gx4)x36	2Rx4	TS4GHR72V2C-SAM
Wide Temp. (-40°C~95°C)	64GB	(4Gx4)x36	2Rx4	TS8GHR72V2F-SAM
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2B-I
Very Low Profile (0°C~95°C)	8GB	(1Gx8)x9	1Rx8	TS1GHR72V2BL
		(1Gx8)x9	1Rx8	TS1GHR72V2B2L
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2BL
		(2Gx8)x9	1Rx8	TS2GHR72V2EL
Very Low Profile+ Wide Temp. (-40°C~95°C)	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2EL
	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

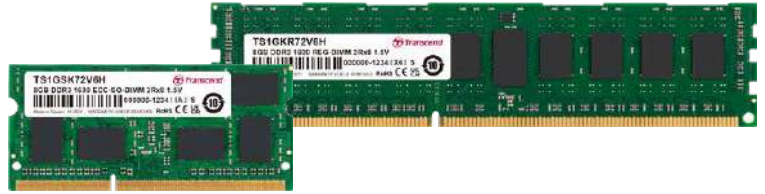


Module Type	Long-DIMM	SO-DIMM
Speed	1600 MT/s	
Capacity	1GB~8GB	
Voltage	Standard: 1.5V Low Voltage: 1.35V	
PCB Height	Standard: 1.18 inches Very Low Profile: 0.74 inches	1.18 inches
30μ" PCB Gold Finger	Wide Temp. / ECC / Registered	
Anti-Sulfuration	Wide Temp. / ECC / Registered	
Operating Temperature	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)	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.

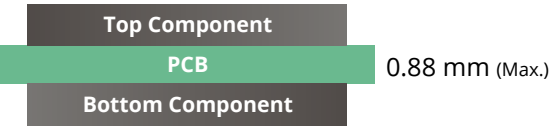
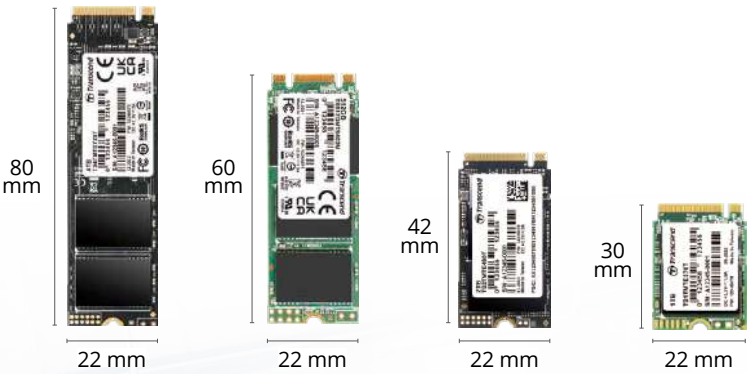
Transcend also provides SSDs with technologies such as Power Loss Protection (PLP) to ensure data integrity in applications with unstable power supply; TCG Opal 2.0 to enhance data security; and SLC Mode to increase endurance and performance. These special product lines help address issues commonly encountered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

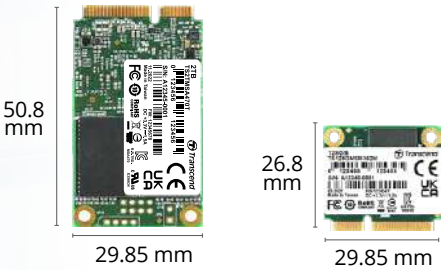
Type ID	Top (Max.)	Bottom (Max.)
S2	1.35 mm	-
S3	1.50 mm	-
D2	1.35 mm	1.35 mm
D5	1.50 mm	1.50 mm

(S: Single Sided, D: Double Sided)

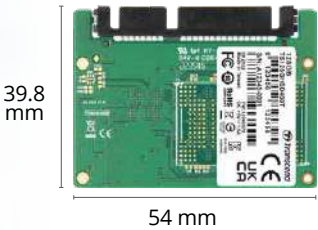
U.2 / 2.5"



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	
		MTE760T	-	256GB~2TB	TCG Opal
		MTE712A	●	256GB~2TB	TCG Opal
		MTE712P	●	256GB~2TB	TCG Opal & PLP
		MTE560P	●	160GB	PLP & SLC Mode
		MTE560I	●	80GB~640GB	TCG Opal & SLC Mode
	M.2 2242	MTE480T	-	256GB~2TB	TCG Opal
	M.2 2230	MTE380T	-	256GB~1TB	TCG Opal
PCIe Gen3	M.2 2280	MTE672A	-	128GB~2TB	TCG Opal
	M.2 2242	MTE460T	-	128GB~1TB	
		MTE470A	-	128GB~2TB	TCG Opal
	M.2 2230	MTE370T	-	256GB~1TB	
SATA III	M.2 2280	MTS970T	●	128GB~4TB	
		MTS960T	-	64GB~2TB	
		MTS970A	●	128GB~4TB	TCG Opal
		MTS970P	●	128GB~1TB	PLP
		MTS260I	●	40GB~1280GB	SLC Mode
		MTS250I	-	20GB~640GB	SLC Mode
	M.2 2242	MTS570T	●	128GB~1TB	
		MTS560T	-	64GB~2TB	
		MTS570A	●	128GB~1TB	TCG Opal
		MTS570P	●	128GB~512GB	PLP
		MTS210I	●	40GB~320GB	SLC Mode
		MTS200I	-	20GB~320GB	SLC Mode
	2.5"	SSD910T	●	240GB~960GB	PLP, Enterprise SSD
		SSD470N	●	1TB~4TB	Direct Write
		SSD472K	●	128GB~4TB	
		SSD460K	-	64GB~2TB	
		SSD470A	●	128GB~4TB	TCG Opal
		SSD470P	●	128GB~1TB	PLP
		SSD550I	●	40GB~1280GB	SLC Mode
	mSATA	MSA470T	●	128GB~1TB	
		MSA460T	-	64GB~1TB	
		MSA470A	●	128GB~1TB	TCG Opal
		MSA470P	●	128GB~1TB	PLP
		MSA520I	●	40GB~320GB	SLC Mode
	Half-Slim	HSD460I	-	64GB~2TB	

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

## 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	
		MTS952P	●	128GB~1TB	PLP
	M.2 2242	MTS552T2	●	64GB~512GB	
		MTS532T	-	64GB	
	2.5"	SSD452K2	●	64GB~2TB	
		SSD452P	●	64GB~1TB	PLP
		SSD530K	●	64GB~128GB	SLC Mode
	mSATA	MSA452T2	●	64GB~1TB	
		MSA452P	●	64GB~128GB	PLP

## 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	
		MTS400P	●	32GB~64GB	PLP
		MTS462K	●	8GB~16GB	SLC Mode
	2.5"	SSD422K	●	32GB~1TB	
		SSD420K	●	16GB~1TB	
		SSD420P	●	32GB~256GB	PLP
		SSD510K	●	16GB~128GB	SLC Mode
	mSATA	MSA380M	●	16GB~256GB	
		MSA372M	●	16GB~1TB	
	mSATA mini	MSM362M	-	16GB~128GB	
	Half-Slim	HSD372M	●	16GB~128GB	

Standard Temp.: 0°C~70°C

Extended Temp.: -20°C~75°C

Wide Temp.: -40°C~85°C

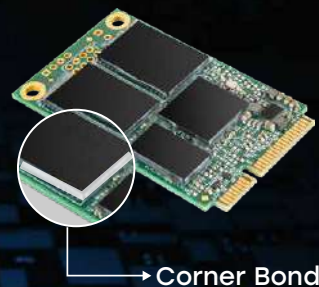
\*Wide-temp. models (-40°C~85°C) & Advanced Encryption Standard (AES) provided upon request. Please contact us to know more.



# Product Highlights

## 112-Layer 3D NAND SSDs

Transcend's 112-layer 3D NAND SSDs are capable of operating in an extended temperature range (-20°C to 75°C). Designed with anti-sulfur resistors and Corner Bond technology, these SSDs demonstrate reliable performance under extreme temperatures, frequent vibrations, and sulfur pollution. Additionally, we offer a customized Conformal Coating service to create a physical barrier against moisture, dust, and other environmental contaminants.



### Key Features



Thermal  
Management



Rigorously  
Tested



Conformal Coating

## U.2 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*)	7,400/6,600 MB/s
Endurance (TBW*)	11,520 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.32 (3 years)
Form Factor	U.2
Dimensions	100.45 x 69.85 x 7 mm
Ordering Information	TS512GUTE210T ⋮ TS8TUTE210T

# PCIe Gen4 M.2 2280



Model	MTE720T	MTE760T	MTE712A
Interface	PCIe Gen4 x4 (8CH)	PCIe Gen4 x4	PCIe Gen4 x4
Capacity	512GB~4TB	256GB~2TB	256GB~2TB
Operating Temperature		-20°C~75°C	
DRAM Cache	●	-	●
TCG Opal	-	●	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	7,500/6,700 MB/s	5,000/4,100 MB/s	3,800/3,000 MB/s
Endurance (TBW*)	5,920 TB	2,640 TB	4,480 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	1.35 (3 years)	1.2 (3 years)	1.99 (3 years)
Form Factor	2280-D2-M	2280-S2-M	2280-D2-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm	80 x 22 x 3.58 mm
Ordering Information	TS512GMTE720T ⋮ TS4TMTE720T	TS256GMTE760T ⋮ TS2TMTE760T	TS256GMTE712A ⋮ TS2TMTE712A

Model	MTE712P	MTE560P	MTE560I
Interface		PCIe Gen4 x4	
Capacity	256GB~2TB	160GB	80GB~640GB
Operating Temperature		-40°C~85°C	
DRAM Cache	●	●	●
TCG Opal	●	●	●
Power Loss Protection (PLP)	●	●	-
SLC Mode	-	●	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	3,800/3,100 MB/s	3,800/3,000 MB/s	3,800/3,200 MB/s
Endurance (TBW*)	4,320 TB	9,500 TB	38,000 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	1.97 (3 years)	54.2 (3 years)	54.2 (3 years)
Form Factor	2280-D5-M	2280-D5-M	2280-D2-M
Dimensions	80 x 22 x 3.88 mm	80 x 22 x 3.88 mm	80 x 22 x 3.58 mm
Ordering Information	TS256GMTE712P ⋮ TS2TMTE712P	TS160GMTE560P	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 Gen4 M.2 2242



Model	<b>MTE480T</b>
Interface	PCIe Gen4 x4
Capacity	256GB~2TB
Operating Temperature	-20°C~75°C
DRAM Cache	-
TCG Opal	●
Corner Bond	●
30μ" PCB Gold Finger	●
Performance (Sequential R/W*)	5,000/4,100 MB/s
Endurance (TBW*)	2,640 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.2 (3 years)
Form Factor	2242-S2-M
Dimensions	42 x 22 x 2.23 mm
Ordering Information	TS256GMTE480T ⋮ TS2TMTE480T

# PCIe Gen4 M.2 2230



Model	<b>MTE380T</b>
Interface	PCIe Gen4 x4
Capacity	256GB~1TB
Operating Temperature	-20°C~75°C
DRAM Cache	-
TCG Opal	●
Corner Bond	●
30μ" PCB Gold Finger	●
Performance (Sequential R/W*)	5,000/3,500 MB/s
Endurance (TBW*)	1,320 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.2 (3 years)
Form Factor	2230-S3-M
Dimensions	30 x 22 x 2.38 mm
Ordering Information	TS256GMTE380T ⋮ TS1TMTE380T

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.

# PCIe Gen3 M.2 2280/2242



Model	MTE672A	MTE460T	MTE470A
Interface	PCIe Gen3 x4	PCIe Gen3 x2	PCIe Gen3 x4
Capacity	128GB~2TB	128GB~1TB	128GB~2TB
Operating Temperature	-20°C~75°C		
DRAM Cache	-	-	-
TCG Opal	●	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	2,000/1,700 MB/s	1,700/1,500 MB/s	2,000/1,700 MB/s
Endurance (TBW*)	1,920 TB	900 TB	1,800 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	0.86 (3 years)		
Form Factor	2280-S2-M	2242-D2-B-M	2242-D2-M
Dimensions	80 x 22 x 2.23 mm	42 x 22 x 3.58 mm	42 x 22 x 3.58 mm
Ordering Information	TS128GMTE672A	TS128GMTE460T	TS128GMTE470A
	⋮ TS2TMTE672A	⋮ TS1TMTE460T	⋮ TS2TMTE470A

# PCIe Gen3 M.2 2230



Model	MTE370T
Interface	PCIe Gen3 x4
Capacity	256GB~1TB
Operating Temperature	-20°C~75°C
DRAM Cache	-
Corner Bond	●
30μ" PCB Gold Finger	●
Performance (Sequential R/W*)	2,000/1,700 MB/s
Endurance (TBW*)	960 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	0.88 (3 years)
Form Factor	2230-S3-M
Dimensions	30 x 22 x 2.38 mm
Ordering Information	TS256GMTE370T
	⋮ TS1TMTE370T

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



## SATA III M.2 2280



Model	MTS970T	MTS960T	MTS970A
Interface		SATA III 6Gb/s	
Capacity	128GB~4TB	64GB~2TB	128GB~4TB
Operating Temperature		-20°C~75°C	
DRAM Cache	●	-	●
TCG Opal	-	-	●
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	9,680 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	2.21 (3 years)	1.95 (3 years)	2.21 (3 years)
Form Factor	2280-D2-B-M	2280-S2-B-M	2280-D2-B-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm	80 x 22 x 3.58 mm
Ordering Information	TS128GMTS970T ⋮ TS4TMTS970T	TS64GMTS960T ⋮ TS2TMTS960T	TS128GMTS970A ⋮ TS4TMTS970A

Model	MTS970P	MTS260I	MTS250I
Interface		SATA III 6Gb/s	
Capacity	128GB~1TB	40GB~1280GB	20GB~640GB
Operating Temperature		-40°C~85°C	
DRAM Cache	●	●	-
Power Loss Protection (PLP)	●	-	-
SLC Mode	-	●	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	2,400 TB	46,000 TB	22,000 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	2.14 (3 years)	52.3 (3 years)	44.6 (3 years)
Form Factor	2280-D2-B-M	2280-D2-B-M	2280-S2-B-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm
Ordering Information	TS128GMTS970P ⋮ TS1TMTS970P	TS40GMTS260I ⋮ TS1280GMTS260I	TS20GMTS250I ⋮ TS640GMTS250I

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

## SATA III M.2 2242



Model	MTS570T	MTS560T	MTS570A
Interface		SATA III 6Gb/s	
Capacity	128GB~1TB	64GB~2TB	128GB~1TB
Operating Temperature		-20°C~75°C	
DRAM Cache	●	-	●
TCG Opal	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/510 MB/s	560/500 MB/s
Endurance (TBW*)	2,420 TB	4,376 TB	2,420 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	2.16 (3 years)	2 (3 years)	2.16 (3 years)
Form Factor		2242-D2-B-M	
Dimensions		42 x 22 x 3.58 mm	
Ordering Information	TS128GMTS570T ⋮ TS1TMTS570T	TS64GMTS560T ⋮ TS2TMTS560T	TS128GMTS570A ⋮ TS1TMTS570A

Model	MTS570P	MTS210I	MTS200I
Interface		SATA III 6Gb/s	
Capacity	128GB~512GB	40GB~320GB	20GB~320GB
Operating Temperature		-40°C~85°C	
DRAM Cache	●	●	-
Power Loss Protection (PLP)	●	-	-
SLC Mode	-	●	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	1,150 TB	11,500 TB	11,000 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	2.05 (3 years)	52.3 (3 years)	44.6 (3 years)
Form Factor	2242-D5-B-M	2242-S2-B-M	2242-D2-B-M
Dimensions	42 x 22 x 3.88 mm	42 x 22 x 3.58 mm	42 x 22 x 3.58 mm
Ordering Information	TS128GMTS570P ⋮ TS512GMTS570P	TS40GMTS210I ⋮ TS320GMTS210I	TS20GMTS200I ⋮ TS320GMTS200I

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

# SATA III 2.5"

## Enterprise SSDs



Transcend's SSD910T is a high-performance 2.5" Enterprise SSD designed for data-intensive workloads. Boasting 3D NAND flash, SATA III 6Gb/s interface, and a DRAM cache, it delivers fast data transfer with superior Quality of Service, ultra-low latency, and exceptional endurance. The integrated Power Loss Protection ensures data integrity during power fluctuations.

Model	SSD910T
Interface	SATA III 6Gb/s
Capacity	240GB~960GB
Operating Temperature	0°C~70°C
DRAM Cache	●
Power Loss Protection (PLP)	●
Performance (Sequential R/W*)	560/500 MB/s
Endurance (TBW*)	1,725 TB
Reliability (MTBF*)	2,000,000 hours
DWPD*	1 (5 years)
Dimensions	100 x 69.85 x 7 mm
Ordering Information	TS240GSSD910T ⋮ TS960GSSD910T

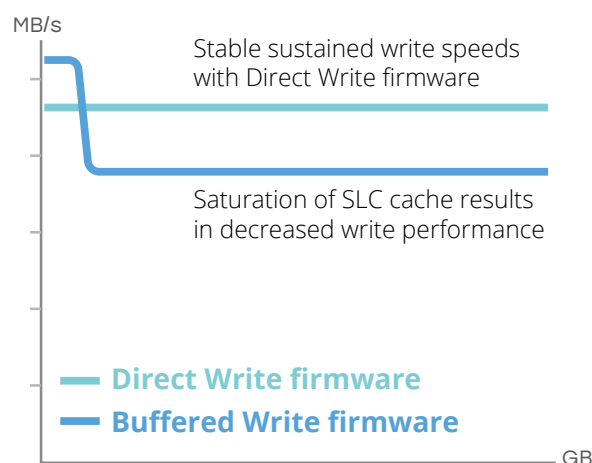
	Enterprise SSD	Client SSD
Workload (JESD219)	Enterprise	Client
NAND Endurance	High (PE: 10K)	Low (PE: 1~3K)
Reliability	Featured with PLP	Simple ECC function
Latency	0.2 ms (QoS=99.9%, SSD910T)	5.7 ms (QoS=99.6%, SSD452K)
Qos	99.9~99.99%	Not Required

## Direct Write SSDs



Transcend's SSD470N is tailored for heavy write demands, boasting advanced ECC protection, robust construction with anti-sulfur resistors, and a specialized Direct Write firmware for consistently high speeds. Ideal for applications with frequent and intensive data writing, this SATA III 2.5" SSD ensures reliability and performance in tasks like extensive data processing or continuous write operations.

Model	SSD470N
Interface	SATA III 6Gb/s
Capacity	1TB~4TB
Operating Temperature	-20°C~75°C
DRAM Cache	●
Performance (Sequential R/W*)	560/510 MB/s
Endurance (TBW*)	7,600 TB
Reliability (MTBF*)	3,000,000 hours
DWPD*	1.91 (3 years)
Dimensions	100.45 x 69.85 x 6.8 mm
Ordering Information	TS1TSSD470N ⋮ TS4TSSD470N



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

## 112-Layer 3D NAND Flash

# SATA III 2.5"



Model	SSD472K	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	100.45 x 69.85 x 6.8 mm	
Ordering Information	TS128GSSD472K ⋮ TS4TSSD472K	TS64GSSD460K ⋮ TS2TSSD460K

Model	SSD470A	SSD470P	SSD550I
Interface	SATA III 6Gb/s		
Capacity	128GB~4TB	128GB~1TB	40GB~1280GB
Operating Temperature	-20°C~75°C	-20°C~75°C	-40°C~85°C
DRAM Cache	●	●	●
TCG Opal	●	-	-
Power Loss Protection (PLP)	-	●	-
SLC Mode	-	-	●
Performance (Sequential R/W*)	560/500 MB/s	560/520 MB/s	560/520 MB/s
Endurance (TBW*)	9,448 TB	2,420 TB	46,000 TB
Reliability (MTBF*)	3,000,000 hours		
DWPD*	2.21 (3 years)	2.16 (3 years)	32.8 (3 years)
Dimensions	100.45 x 69.85 x 6.8 mm		
Ordering Information	TS128GSSD470A ⋮ TS4TSSD470A	TS128GSSD470P ⋮ TS1TSSD470P	TS40GSSD550I ⋮ TS1280GSSD550I

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



## SATA III mSATA



Model	MSA470T	MSA460T	MSA470A
Interface		SATA III 6Gb/s	
Capacity	128GB~1TB	64GB~1TB	128GB~1TB
Operating Temperature		-20°C~75°C	
DRAM Cache	●	-	●
TCG Opal	-	-	●
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	●
Performance (Sequential R/W*)	560/520 MB/s	560/500 MB/s	560/500 MB/s
Endurance (TBW*)	2,420 TB	2,188 TB	2,420 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	2.16 (3 years)	2 (3 years)	2.21(3 years)
Form Factor		MO-300A	
Dimensions		50.8 x 29.85 x 4.85 mm	
Ordering Information	TS128GMSA470T ⋮ TS1TMSA470T	TS64GMSA460T ⋮ TS1TMSA460T	TS128GMSA470A ⋮ TS1TMSA470A

## SATA III mSATA/Half-Slim



Model	MSA470P	MSA520I	HSD460I
Interface		SATA III 6Gb/s	
Capacity	128GB~1TB	40GB~320GB	64GB~2TB
Operating Temperature		-40°C~85°C	
DRAM Cache	●	●	-
Power Loss Protection (PLP)	●	-	-
SLC Mode	-	●	-
Corner Bond	●	●	●
30μ" PCB Gold Finger	●	●	-
Performance (Sequential R/W*)	560/520 MB/s	560/520 MB/s	560/500 MB/s
Endurance (TBW*)	2,000 TB	11,500 TB	4,376 TB
Reliability (MTBF*)		3,000,000 hours	
DWPD*	1.83 (3 years)	52.3 (3 years)	1.95 (3 years)
Form Factor	MO-300A	MO-300A	MO-297
Dimensions	50.8 x 29.85 x 4.85 mm	50.8 x 29.85 x 4.85 mm	54 x 39.8 x 4 mm
Ordering Information	TS128GMSA470P ⋮ TS1TMSA470P	TS40GMSA520I ⋮ TS320GMSA520I	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-D2-M	2280-D5-M
Dimensions	80 x 22 x 3.58 mm	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	MTS952P
Interface	SATA III 6Gb/s	
Capacity	64GB~2TB	128GB~1TB
Operating Temperature	-20°C~75°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	560/520 MB/s
Endurance (TBW*)	3,520 TB	1,760 TB
Reliability (MTBF*)	3,000,000 hours	
DWPD*	1.61 (3 years)	1.61 (3 years)
Form Factor	2280-D2-B-M	2280-D5-B-M
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 3.88 mm
Ordering Information	TS64GMTS952T2 ⋮ TS2TMTS952T2	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	560/520 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)	1.61 (3 years)	45.7 (3 years)
Dimensions	100.45 x 69.85 x 6.8 mm		
Ordering Information	TS64GSSD452K2 ⋮ TS2TSSD452K2	TS64GSSD452P ⋮ TS1TSSD452P	TS64GSSD530K TS128GSSD530K

# SATA III mSATA



Model	MSA452T2	MSA452P
Interface	SATA III 6Gb/s	
Capacity	64GB~1TB	64GB~128GB
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
Reliability (MTBF*)	3,000,000 hours	
DWPD*	1.61 (3 years)	
Form Factor	MO-300A	
Dimensions	50.8 x 29.85 x 4.85 mm	
Ordering Information	TS64GMSA452T2 ⋮ TS1TMSA452T2	TS64GMSA452P TS128GMSA452P

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

Model	MTS400P	MTS462K
Interface	SATA III 6Gb/s	
Capacity	32GB~64GB	8GB~16GB
Operating Temperature	0°C~70°C	
DRAM Cache	●	●
Power Loss Protection (PLP)	●	-
SLC Mode	-	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	●
Performance (Sequential R/W*)	280/100 MB/s	300/150 MB/s
Endurance (TBW*)	180 TB	260 TB
Reliability (MTBF*)	2,500,000 hours	3,000,000 hours
DWPD*	2 (3 years)	15.2 (3 years)
Form Factor	2242-D5-B-M	2242-D2-B-M
Dimensions	42 x 22 x 3.88 mm	42 x 22 x 3.58 mm
Ordering Information	TS32GMTS400P TS64GMTS400P	TS8GMTS462K TS16GMTS462K

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

## SATA III 2.5"

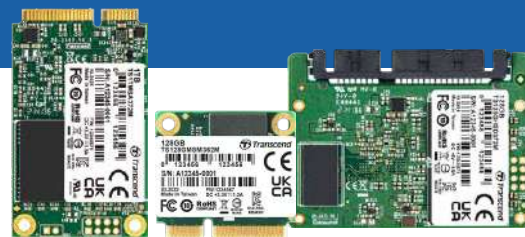


Model	SSD422K	SSD420K
Interface	SATA III 6Gb/s	
Capacity	32GB~1TB	16GB~1TB
Operating Temperature	0°C~70°C	
DRAM Cache	●	●
Performance (Sequential R/W*)	550/460 MB/s	530/470 MB/s
Endurance (TBW*)	2,940 TB	
Reliability (MTBF*)	2,000,000 hours	
DWPD*	2.6 (3 years)	
Dimensions	100.45 x 69.85 x 6.8 mm	
Ordering Information	TS32GSSD422K ⋮ TS1TSSD422K	TS16GSSD420K ⋮ TS1TSSD420K

Model	SSD420P	SSD510K
Interface	SATA III 6Gb/s	
Capacity	32GB~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	1,500,000 hours
DWPD*	2.6 (3 years)	15.2 (3 years)
Dimensions	100.45 x 69.85 x 6.8 mm	
Ordering Information	TS32GSSD420P ⋮ TS256GSSD420P	TS16GSSD510K ⋮ TS128GSSD510K

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

# SATA III mSATA



Model	MSA380M	MSA372M
Interface	SATA III 6Gb/s	
Capacity	16GB~256GB	16GB~1TB
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
Endurance (TBW*)	740 TB	2,360 TB
Reliability (MTBF*)	2,500,000 hours	
DWPD*	2.6 (3 years)	
Form Factor	MO-300A	
Dimensions	50.8 x 29.85 x 4.85 mm	
Ordering Information	TS16GMSA380M ⋮ TS256GMSA380M	TS16GMSA372M ⋮ TS1TMSA372M

# SATA III mSATA mini/Half-Slim

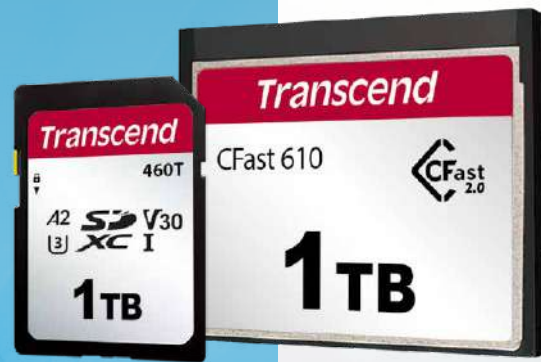
Model	MSM362M	HSD372M
Interface	SATA III 6Gb/s	
Capacity	16GB~128GB	
Operating Temperature	0°C~70°C	
DRAM Cache	-	●
Corner Bond	●	●
30μ" PCB Gold Finger	●	-
Performance (Sequential R/W*)	520/220 MB/s	530/200 MB/s
Endurance (TBW*)	168 TB	360 TB
Reliability (MTBF*)	2,500,000 hours	
DWPD*	1.19 (3 years)	2.6 (3 years)
Form Factor	MO-300B	MO-297
Dimensions	26.8 x 29.85 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.

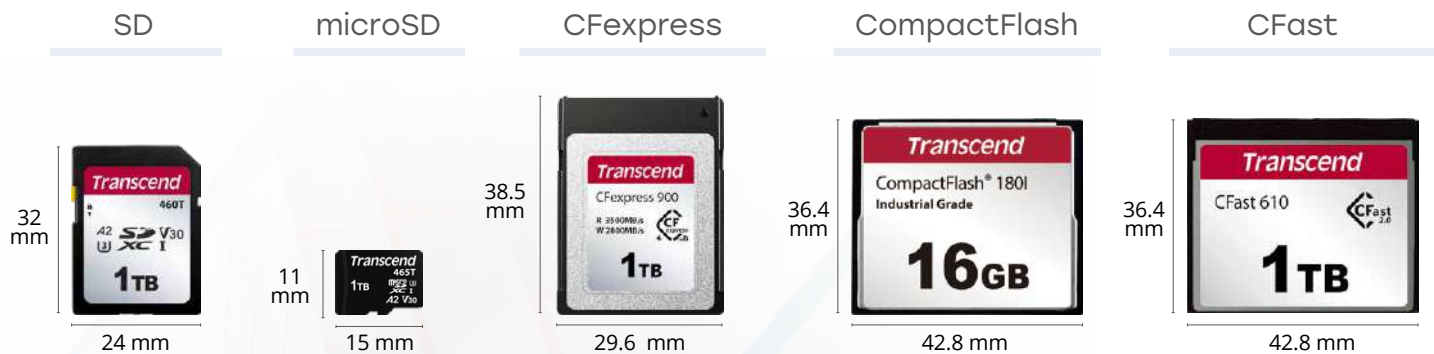


# Memory Cards

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, CFexpress, CompactFlash, and CFast cards.



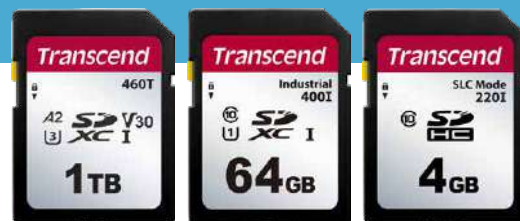
# Memory Cards



## 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~160GB	-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	USD465T / USD465I	162-layer 3D TLC	1TB	-25°C~85°C / -40°C~85°C
	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
	USD420T	96-layer 3D TLC	16GB~256GB	-25°C~85°C
	USD230I	96-layer 3D TLC (SLC Mode)	2GB~4GB	-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
CFexpress	CFexpress 960	112-layer 3D TLC (SLC Mode)	80GB~320GB	-10°C~70°C
	CFexpress 900	112-layer 3D TLC	256GB~1TB	-10°C~70°C
	CFexpress 860	112-layer 3D TLC (SLC Mode)	160GB~320GB	-10°C~70°C
	CFexpress 820	96-layer 3D TLC	256GB~512GB	-10°C~70°C
CompactFlash	CF170	MLC	8GB~64GB	-25°C~85°C
	CF180 / CF180I	MLC (SLC Mode)	128MB~16GB	-25°C~85°C / -40°C~85°C
Cfast	CFX610	112-layer 3D TLC	64GB~1TB	-5°C~70°C
	CFX730	112-layer 3D TLC (SLC Mode)	20GB~320GB	-5°C~70°C
	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~160GB	16GB~256GB
Operating Temperature	-25°C~85°C	-40°C~85°C	-25°C~85°C
Performance (Sequential R/W*)	100/85 MB/s	100/85 MB/s	95/40 MB/s
Endurance (TBW*)	2,660 TB	13,524 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 ⋮ TS160GSDC240I	TS16GSDC420T ⋮ TS256GSDC420T

Model	SDC410M	SDC400I	SDC220I
Flash	MLC	MLC	MLC (SLC Mode)
Capacity	2GB~32GB	8GB~64GB	128MB~4GB
Operating Temperature	-25°C~85°C	-40°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	USD465T	USD465I	USD460T	USD460I
Flash	162-layer 3D TLC	162-layer 3D TLC	112-layer 3D TLC	112-layer 3D TLC
Capacity	1TB	1TB	64GB~512GB	64GB~512GB
Operating Temperature	-25°C~85°C	-40°C~85°C	-25°C~85°C	-40°C~85°C
Performance (Sequential R/W*)	100/80 MB/s			
Endurance (TBW*)	2,660TB	2,660TB	1,343 TB	1,343 TB
Standard	SD 6.1	SD 6.1	SD 6.1/5.1	SD 6.1/5.1
Connector	8 pin			
Dimensions	11 x 15 x 1 mm			
Ordering Information	TS1TUSD465T	TS1TUSD465I	TS64GUSD460T ⋮ TS512GUSD460T	TS64GUSD460I ⋮ TS512GUSD460I

Model	USD240I	USD420T	USD230I
Flash	112-layer 3D TLC (SLC Mode)	96-layer 3D TLC**	96-layer 3D TLC (SLC Mode)
Capacity	20GB~160GB	16GB~256GB	2GB~4GB
Operating Temperature	-40°C~85°C	-25°C~85°C	-40°C~85°C
Performance (Sequential R/W*)	100/80 MB/s	95/40 MB/s	100/70 MB/s
Endurance (TBW*)	13,526 TB	640 TB	5,800 TB
Standard	SD 6.1	SD 5.1/3.01	SD 5.1/3.01
Connector	8 pin		
Dimensions	11 x 15 x 1 mm		
Ordering Information	TS20GUSD240I ⋮ TS160GUSD240I	TS16GUSD420T ⋮ TS256GUSD420T	TS2GUSD230I ⋮ TS4GUSD230I

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

\*\*TS16GUSD420T 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

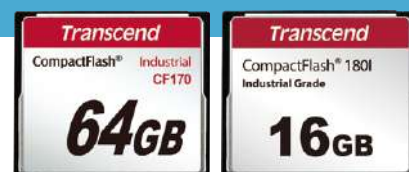
# CFexpress Cards



Model	CFexpress 960	CFexpress 900	CFexpress 860	CFexpress 820
Flash	112-layer 3D TLC (SLC Mode)	112-layer 3D TLC	112-layer 3D TLC (SLC Mode)	96-layer 3D TLC
Capacity	80GB~320GB	256GB~1TB	160GB~320GB	256GB~512GB
Operating Temperature	-10°C~70°C			
Performance (Sequential R/W*)	3,500/2,800 MB/s	3,500/2,800 MB/s	1,750/1,500 MB/s	1,700/1,300 MB/s
Endurance (TBW*)	19,000 TB	2,240 TB	11,500 TB	1,080 TB
Standard	CFexpress Type B			
Dimensions	38.5 x 29.6 x 3.8 mm			
Ordering Information	TS80GCFE960 ⋮ TS320GCFE960	TS256GCFE900 ⋮ TS1TCFE900	TS160GCFE860 TS320GCFE860	TS256GCFE820 TS512GCFE820

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

# CompactFlash Cards



Model	CF170	CF180	CF180I
Flash	MLC	MLC (SLC Mode)	MLC (SLC Mode)
Capacity	8GB~64GB	128MB~16GB	128MB~16GB
Operating Temperature	-25°C~85°C	-25°C~85°C	-40°C~85°C
Performance (Sequential R/W*)	87/67 MB/s	85/75 MB/s	85/75 MB/s
Endurance (TBW*)	85 TB	210 TB	210 TB
Standard	True IDE		
Connector	50 pin		
Dimensions	42.8 x 36.4 x 3.3 mm		
Ordering Information	TS8GCF170	TS128MCF180	TS128MCF180I
	⋮	⋮	⋮
	TS64GCF170	TS16GCF180	TS16GCF180I

# CFast Cards



Model	CFX610	CFX730	CFX602	CFX602I	CFX722I
Flash	112-layer 3D TLC	112-layer 3D TLC (SLC Mode)	MLC	MLC	MLC (SLC Mode)
Capacity	64GB~1TB	20GB~320GB	8GB~256GB	8GB~256GB	4GB~128GB
Operating Temperature	-5°C~70°C	-5°C~70°C	-5°C~70°C	-40°C~85°C	-40°C~85°C
Performance (Sequential R/W*)	550/520 MB/s	550/520 MB/s	510/340 MB/s	510/340 MB/s	540/425 MB/s
Endurance (TBW*)	1,580 TB	18,000 TB	360 TB	360 TB	1,800 TB
Standard	SATA III 6Gb/s				
Connector	24 pin				
Dimensions	42.8 x 36.4 x 3.6 mm				
Ordering Information	TS64GCFX610	TS20GCFX730	TS8GCFX602	TS8GCFX602I	TS4GCFX722I
	⋮	⋮	⋮	⋮	⋮
	TS1TCFX610	TS320GCFX730	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.

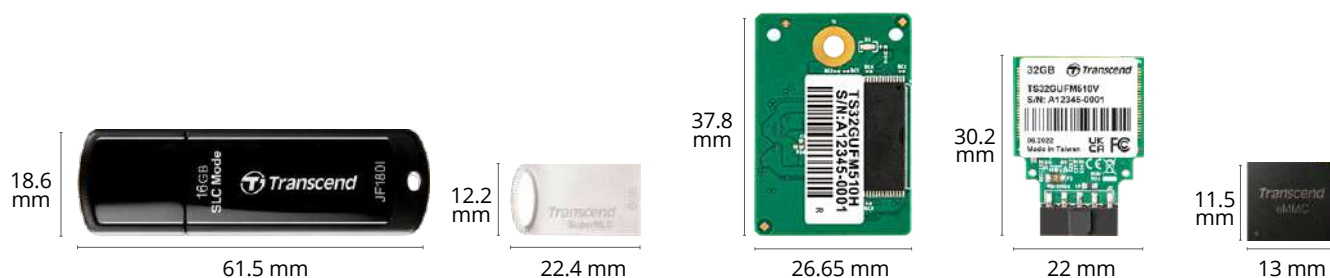


# Flash Solutions

USB Flash Drive

USB Flash Module

eMMC



## 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)	2GB~16GB	0°C~70°C
USB Flash Modules	UFM510H	MLC	2GB~32GB	0°C~70°C
	UFM510V		8GB~32GB	0°C~70°C
eMMC	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*)	255/115 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	2GB~16GB
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	TS2GJF740K ⋮ TS16GJF740K

## 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

# eMMC



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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