



# Product Overview

## Embedded Solutions



Quality. Today and Tomorrow.

**Advanced Technologies | Software Solutions**

**DRAM Modules | SSD Solutions | Memory Cards | Flash Solutions**

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# About Transcend

**30+**  
YEARS

## 30+ Years of Experience

Founded in 1988, Transcend Information Inc. has become a leading global brand of memory products and storage solutions. Over the years, Transcend has garnered over 140 patents, and employs more than 100 skilled R&D engineers to research, develop, and optimize its technical and production procedures.



## Total Quality Control

Transcend was the first memory module manufacturer in Taiwan—and the second in the world—to receive ISO9001, ISO14001, and QC080000 certifications and was recently certified with the automotive-grade IATF16949. Every Transcend device is individually inspected using sophisticated testing equipment and customized testing software.



## Global Support

Transcend has 12 branch offices worldwide, including Los Angeles, Maryland, Silicon Valley, Hamburg, Rotterdam, London, Tokyo, Seoul, Shanghai, Beijing, Shenzhen, and Hong Kong. Our manufacturing plant is located in Taipei, creating an optimum product supply system with a global perspective.





# Our Strengths

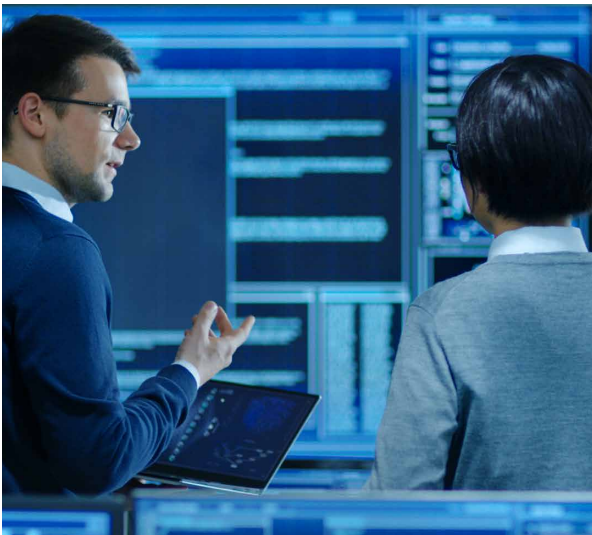


## Storage Solutions with Best Quality

- Branded chips to ensure high quality
- In-house software for efficient management
- Technology integration for innovative products

## Reliable Supply

- Strategic alliance with top-tier suppliers



## R&D Expertise

- More than 140 patents
- 100+ R&D talents
- National Invention & Creation Award

## Global Operation & Worldwide Support

- In-time professional technical support
- 12 branch offices worldwide
- Localized sales and FAE support



## Management of Product Life Cycle

- Fixed BOM
- In-house ERP system
- Roadmap & failure analysis report

## Facilities & Production Process

- Automatic production
- Enhanced reliability tests
- Rigorous quality control: IQC, IPQC, FQC, OQC

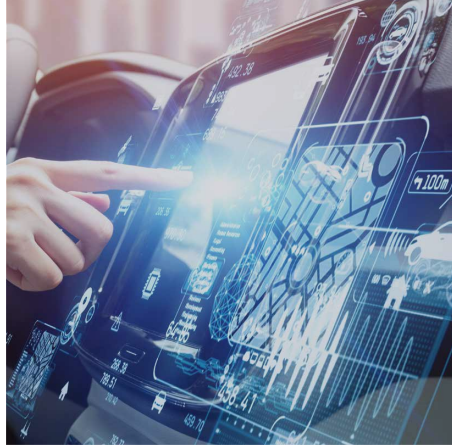


# Applications

Find Transcend in various industries.

## Transportation

Build a robust and reliable transport system



## Healthcare

Optimize healthcare quality with precision and stability



## Gaming

Enhance data security



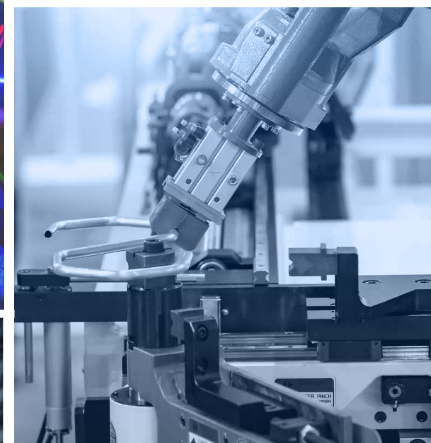
## Automation

Efficient and fast deployment at scale



## Network & Telecom

High speeds, zero latency



## Embedded

Advanced performance in constrained spaces



## AIoT

Develop a smart and convenient lifestyle



## Defense

Durability to withstand extreme environment in military applications



# Solutions & Technologies

Transcend adopts various technologies to optimize the durability, reliability, and stability of storage devices. We provide customized services so the storage devices fit perfectly to your needs.

## DURABILITY

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### 112-layer 3D NAND Flash

112 layers of 3D NAND flash delivers higher storage density per wafer by increasing 50% compared to the previous generation. Higher storage density means higher capacity and data density, as well as lower cost per bit. This allows SSDs to have more attractive I/O performance and lower latency, ideal for 5G, automotive, AIoT, and cloud computing applications.



### Dynamic Thermal Throttling

This technology ensures the SSD operates in a safe temperature range, makes sure the users' data is well intact, and prolongs the product lifespan. A thermal sensor is implemented in the controller to monitor the drive temperature. When the temperature exceeds the safe level, the speed will be throttled down and lower the temperature.



### SLC Mode

With high transfer speeds of SLC and cost-effective quality of TLC, SLC mode strikes a cost-performance balance between different flash types, increasing reliability and prolonging flash lifespan. Flash endurance and the agility can be guaranteed to deliver mission-critical embedded or industrial applications.



### Over-Provisioning

Over-Provisioning (OP) is a firmware optimization technology that allocates a certain portion of solid-state drive (SSD) capacity to the controller as cache. This allows the SSD to perform Garbage Collection (GC) more efficiently, improving performance and increasing the SSD's endurance and lifespan.

## STABILITY

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### Power Loss Protection & Power Shield

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 the power is lost, the controller will stop accepting new write commands to ensure data integrity.

## RELIABILITY

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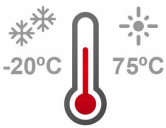
### Anti-sulfur Technology

Designed to prevent sulfuration from abnormal operation and low conductivity, Transcend's anti-sulfur DRAM modules all meet level G2 of ISA Standard S71.04-2013 and ASTM B809-95 standard. A protective layer is added above the vulnerable parts to safeguard the silver alloys by isolating the electrodes, preventing hydrogen sulfide from coming into contact with the silver.



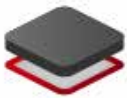
### Wide Temperature

Transcend's products are stringently tested at the complement level or as a whole within an extended thermal range. The tests are conducted in a wide-temperature cycle chamber and all embedded-use products are required to pass the rigorous tests to ensure delivery of reliable performance in temperatures ranging from -40°C, all the way to 85°C. DDR4 memory modules can even operate at 95°C.



### Extended Temperature

Products rated for extended temperature operation are designed with extended temperature support to ensure reliable operation in rugged conditions with extended temperatures ranging from -20°C to 75°C. Transcend provides SSDs that adapt to vast temperature range, demonstrating its robustness and resiliency to carry out reliable operations even under temperature swings and environmental stresses.



### Corner Bond & Underfill

Corner Bond / Underfill are technologies 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.

## SECURITY

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### TCG Opal Specifications

TCG Opal is ideal for implementation into industries where data security is of pivotal importance. Devices which conform to TCG Opal specifications can be operated without passing through the host and the device managers may assign permissions to different users for each logical block address range.



### AES Encryption

The Advanced Encryption Standards (AES) specifies a FIPS-approved cryptographic algorithm distinctively employed to protect electronic data. Transcend's SSDs equipped with hardware-based AES offer a complete solution for applications that handle sensitive data or require significant data security.



# Enhance your reach with Transcend Software Solutions

Leveraging ready-to-run applications is the most efficient approach for your businesses to stand out from others. See how Transcend empowers your business and boost your growth.



**SDK: Tailor software to your needs**  
Software Development Kit (SDK) provided to adapt to many operating systems.



**Software and hardware integration**  
Seamlessly integrate hardware and software for complex deployment.



**From edge to cloud**  
Work in tandem between the cloud and the edge to reach utmost flexibility.



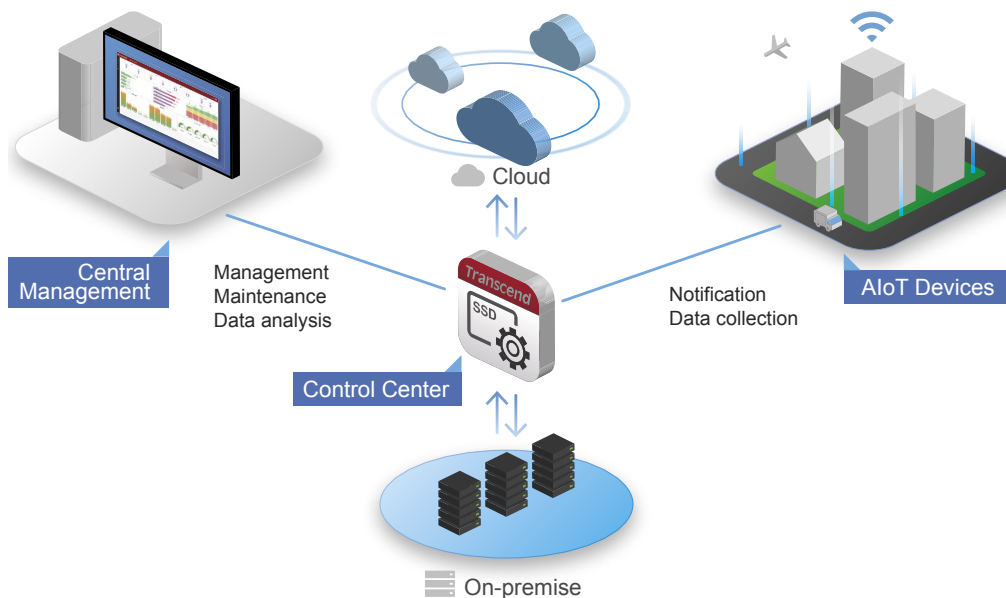
**Highly supportive**  
Our software solutions build strong foundation for SSDs, DRAM, flash and other devices.

## Control Center

## Management



Control Center helps you easily manage storage devices deployed at scale. It is a SaaS solution that can be deployed on AWS or Azure, facilitating efficient maintenance and optimization.



### Information consolidated

Offer data analysis and clear information on an intuitive interface.

### Remote upgrade & monitoring

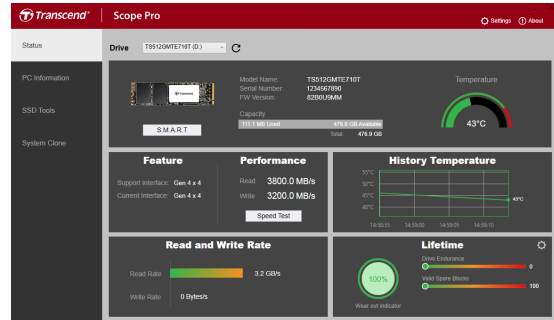
Check devices' health status and upgrade firmware remotely.

### Early Warning System (EWS) & instant notices

Notify users when potential issues are detected and make proactive responses.



Scope Pro is a convenient software package suitable for embedded systems operating offline. It offers useful features, including drive information, S.M.A.R.T. analysis, diagnostic scan, health check, and system clone.



**Efficient monitoring**

Monitor device health status including available, used, and total capacity, temperature, endurance, bad blocks and wear-out indicator, etc.

**Optimized performance**

Carry out speed tests and health scan. Rearrange data stored in SSDs or SD/microSD cards.

**System clone**

Copy data, including the operating system (OS), programs, and data, to a new Transcend SSD.

**TCG Opal Toolbox/ ATA Security Toolbox/ UFD Security Toolbox**

Transcend fully protects your data by designing three different kinds of software tools with different security intensity.



**Advanced protection**

Set password, locking range, and initiate pre-boot authentication and revert functions to increase drive security.

**Cost-effective security**

Determine desired security level and lock, unlock, and erase drives.

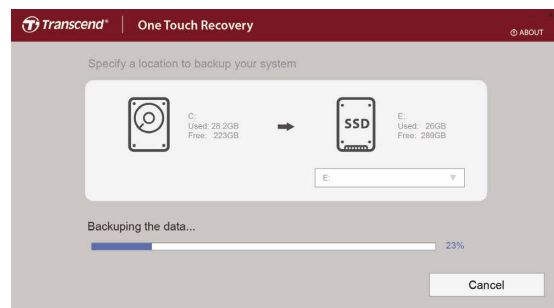
**Higher flash security**

Enable write protect and OTP function to level up 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**

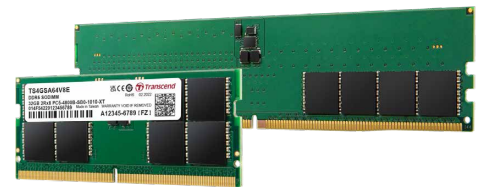
Backs up and restores data from user-defined disks. The maximum number of disks is tailored to fit each user's situation.

**Remote backup & recovery**

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

# DRAM Modules

Transcend's DRAM Modules are offered in various form factors to accommodate different embedded devices for use in extreme industrial applications. Each DRAM module is made of the highest-quality DRAM memory chips and components, tested to ensure stability and compatibility.



## Product Line

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

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

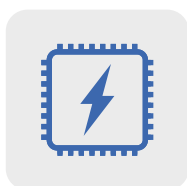


# Product Highlights

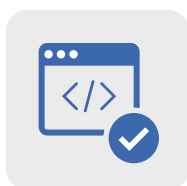
## DDR5 Memory Modules Unlock New-Gen Power

Transcend's cutting-edge DDR5 DRAM modules comply with JEDEC standards, adopting top-quality chips and robust tests to ensure superior quality and reliability. DDR5's dual-channel transfer brings the speeds to 4800 MT/s, while its 1.1V low working voltage allows businesses to realize an energy-efficient management. The built-in Power Management IC (PMIC) and on-die ECC guarantee advanced system stability and data integrity, unfolding a smart and fast computing era.

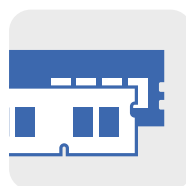
### Key Features



Power management  
IC (PMIC)



On-die ECC



Major-grade  
DRAM chips



JEDEC®  
compliant



**30µm**

#### 30µm PCB Gold Finger

Extra-thick gold-plated connectors at the edge of PCBs enhance signal transmit and prevent deterioration, ensuring long-term component reliability.



#### Anti-sulfuration

Anti-sulfur resistors avoid components being contaminated by sulfide coming from industrial environments and pollution.

# DDR5 DIMMs

- Unbuffered and ECC Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- Registered Long-DIMMs for embedded servers and workstations
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- Low power consumption at 1.1V
- On-die ECC for higher data integrity



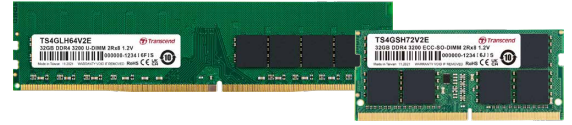
Module Type	DDR5 Long-DIMM	DDR5 SO-DIMM
Standard	JEDEC® standard	
Speed	4800 MT/s	
Capacity	8GB~32GB	
Voltage	1.1V	
Pin Count	288 pin	262 pin
PCB Height	1.23 inches	1.18 inches
PCB Gold Finger Thickness	30μ" (ECC & Registered)	
Anti-Sulfuration	Default (ECC & Registered)	
Operating Temperature	Standard Temperature: 0°C~ 85°C	

## DDR5-4800

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Unbuffered	8GB	(1Gx16)x4	1Rx16	TS1GLA64V8G	TS1GSA64V8G
	16GB	(2Gx8)x8	1Rx8	TS2GLA64V8E	TS2GSA64V8E
	32GB	(2Gx8)x16	2Rx8	TS4GLA64V8E	TS4GSA64V8E
ECC	16GB	(2Gx8)x10	1Rx8	TS2GLA72V8E	TS2GSA72V8E
	32GB	(2Gx8)x20	2Rx8	TS4GLA72V8E	TS4GSA72V8E
Registered	16GB	(2Gx8)x10	1Rx8	TS2GAR80V8E	-
	32GB	(2Gx8)x20	2Rx8	TS4GAR80V8E	-

# DDR4 Unbuffered DIMMs

- Unbuffered Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- Efficient operating voltage at 1.2V



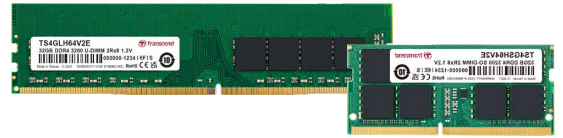
Module Type	DDR4 Long-DIMM	DDR4 SO-DIMM
Standard	JEDEC® standard	
Speed	3200/2666 MT/s	
Capacity	2GB~32GB	
Voltage	1.2V	
Pin Count	288 pin	260 pin
PCB Height	Standard: 1.23 inches Very Low Profile: 0.74 inches	1.18 inches
PCB Gold Finger Thickness	30μ" (Wide Temp.)	
Anti-Sulfuration	Default (Wide Temp.)	
Operating Temperature	Standard Temperature: 0°C~ 95°C Wide Temperature: -40°C~ 95°C	

## DDR4-3200

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM	
Standard Temp. (0°C~ 95°C)	4GB	(512Mx8)x8	1Rx8	TS512MLH64V2H TS512MLH64V2HL	TS512MSH64V2H -	
		(512Mx16)x4	1Rx16	TS512MLH64V2D TS512MLH64V2D3	TS512MSH64V2D TS512MSH64V2D3	
		8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B TS1GLH64V2B3	TS1GSH64V2B TS1GSH64V2B3
			(1Gx16)x4	1Rx16	TS1GLH64V2G TS1GLH64V2G3	TS1GSH64V2G TS1GSH64V2G3
	16GB		(1Gx8)x16	2Rx8	TS2GLH64V2B TS2GLH64V2B3	TS2GSH64V2B TS2GSH64V2B3
		(2Gx8)x8	1Rx8	TS2GLH64V2E TS2GLH64V2E3	TS2GSH64V2E TS2GSH64V2E3	
			2Rx8	TS4GLH64V2E TS4GLH64V2E3	TS4GSH64V2E TS4GSH64V2E3	
	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
Very Low Profile (0°C~ 95°C)	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2BL	-	
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2BL	-	
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E3L	-	



# DDR4 Unbuffered DIMMs



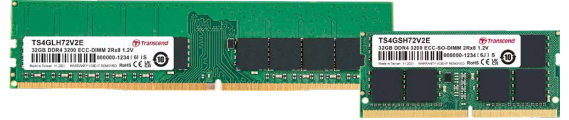
## DDR4-2666

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~ 95°C)	2GB	(256Mx16)x4	1Rx16	TS256MLH64V6X	TS256MSH64V6X
		(512Mx16)x4	1Rx16	TS512MLH64V6D	TS512MSH64V6D
	4GB	(512Mx8)x8	1Rx8	TS512MLH64V6H	TS512MSH64V6H
		(512Mx8)x8	1Rx8	TS512MLH64V6H3	TS512MSH64V6H3
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6B	TS1GSH64V6B
		(512Mx8)x16	2Rx8	TS1GLH64V6B3	TS1GSH64V6B3
	16GB	(1Gx8)x16	2Rx8	-	TS1GSH64V6H
		(1Gx8)x16	2Rx8	TS2GLH64V6B	TS2GSH64V6B
	32GB	(1Gx8)x16	2Rx8	TS2GLH64V6B3	TS2GSH64V6B3
		(2Gx8)x16	2Rx8	TS4GLH64V6E	TS4GSH64V6E
Wide Temp. (-40°C~ 95°C)	4GB	(2Gx8)x16	2Rx8	-	TS4GSH64V6E3
		(512Mx8)x8	1Rx8	-	TS512MSH64V6H-I
	8GB	(512Mx16)x4	1Rx16	-	TS512MSH64V6D-I
		(1Gx8)x8	1Rx8	TS1GLH64V6B-I	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	-
		(512Mx8)x8	1Rx8	TS512MLH64V6HL	-
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6BL	-
16GB	(1Gx8)x16	2Rx8	TS2GLH64V6BL	-	

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

# DDR4 ECC DIMMs

- ECC Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- Efficient operating voltage at 1.2V
- Extra-thick 30μ" gold plated contact pins



Module Type	DDR4 ECC Long-DIMM	DDR4 ECC SO-DIMM
Standard	JEDEC® standard	
Speed	3200/2666 MT/s	
Capacity	4GB~32GB	
Voltage	1.2V	
Pin Count	288 pin	260 pin
PCB Height	Standard: 1.23 inches Very Low Profile: 0.74 inches	1.18 inches
PCB Gold Finger Thickness	30μ"	
Anti-Sulfuration	Default	
Operating Temperature	Standard Temperature: 0°C~ 95°C Wide Temperature: -40°C~ 95°C	

## DDR4-3200

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~ 95°C)	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B TS1GLH72V2B3	TS1GSH72V2B TS1GSH72V2B3
	16GB	(1Gx8)x18 (2Gx8)x9	2Rx8 1Rx8	TS2GLH72V2B TS2GLH72V2E3	TS2GSH72V2B TS2GSH72V2E3
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E TS4GLH72V2E3	TS4GSH72V2E TS4GSH72V2E3
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B-I -	TS1GSH72V2B-I TS1GSH72V2B3-I
Wide Temp. (-40°C~ 95°C)	16GB	(1Gx8)x18 (2Gx8)x9	2Rx8 1Rx8	TS2GLH72V2B-I -	TS2GSH72V2B-I TS2GSH72V2E3-I
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E-I -	TS4GSH72V2E-I TS4GSH72V2E3-I
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2BL TS2GLH72V2BL TS2GLH72V2B3L	-
Very Low Profile (0°C~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2BL TS2GLH72V2B3L	-
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E3L	-

## DDR4-2666

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~ 95°C)	4GB	(512Mx8)x9	1Rx8	TS512MLH72V6H TS1GLH72V6B TS1GLH72V6B3	TS512MSH72V6H TS1GSH72V6B -
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6B TS1GLH72V6B3	TS1GSH72V6B -
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6B TS4GLH72V6E TS4GLH72V6E3	TS2GSH72V6B TS4GSH72V6E -
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V6E TS4GLH72V6E3	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
Very Low Profile (0°C~ 95°C)	32GB	(2Gx8)x18	2Rx8	-	TS4GSH72V6E-I
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6BL	-
Very Low Profile (0°C~ 95°C)	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6BL	-

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

# DDR4 Registered DIMMs

- Registered Long-DIMMs and VLP (Very Low Profile) DIMMs for embedded servers and workstations
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- Efficient operating voltage at 1.2V
- Very Low Profile form factor for improved airflow and heat dissipation in limited space
- Extra-thick 30μ" gold plated contact pins



Module Type	DDR4 R-DIMM
Standard	JEDEC® standard
Speed	3200/2666 MT/s
Capacity	4GB~64GB
Voltage	1.2V
Pin Count	288 pin
PCB Height	Standard: 1.23 inches Very Low Profile: 0.74 inches
PCB Gold Finger Thickness	30μ"
Anti-Sulfuration	Default
Operating Temperature	Standard Temperature: 0°C~ 95°C Wide Temperature: -40°C~ 95°C

## DDR4-3200

	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 TS2GHR72V2E3
		(2Gx8)x9	1Rx8	TS4GHR72V2E TS4GHR72V2E3
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 TS2GHR72V2BL
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2BL TS2GHR72V2EL
		(2Gx8)x9	1Rx8	TS4GHR72V2EL
Very Low Profile + Wide Temp.(-40°C~95°C)	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2EL-I

## DDR4-2666

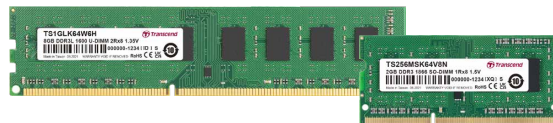
	Capacity	Component Composition	Rank x Org.	Long-DIMM
Standard Temp. (0°C~ 95°C)	4GB	(512Mx8)x9	1Rx8	TS512MHR72V6H
	8GB	(512Mx8)x18	2Rx8	TS1GHR72V6H TS1GHR72V6B
		(1Gx8)x9	1Rx8	TS2GHR72V6B
	16GB	(1Gx8)x18	2Rx8	TS4GHR72V6E-I
Wide Temp. (-40°C~ 95°C)	32GB	(2Gx8)x18	2Rx8	TS2GHR72V6BL
Very Low Profile (0°C~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

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



# DDR3 Unbuffered DIMMs

- Unbuffered Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- JEDEC® compliant PCB design ensures multi-platform compatibility
- 100% tested for stability, compatibility, and performance



Module Type	DDR3 Long-DIMM	DDR3 SO-DIMM
Standard	JEDEC® standard	
Speed	1600 MT/s	
Capacity	2GB~8GB	
Voltage	Standard: 1.5V / Low Voltage: 1.35V	
Pin Count	240 pin	204 pin
PCB Height	Standard: 1.18 inches Very Low Profile: 0.74 inches	1.18 inches
PCB Gold Finger Thickness	30μ" (Wide Temp.)	
Anti-Sulfuration	Default (Wide Temp.)	
Operating Temperature	Standard Temperature: 0°C~ 85°C Wide Temperature: -40°C~ 85°C	

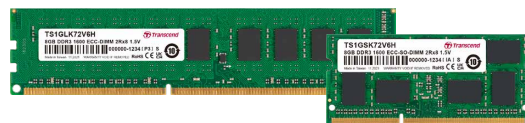
## DDR3-1600

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~ 85°C)	2GB	(256Mx8)x8	1Rx8	TS256MLK64V6N	TS256MSK64V6N
		(256Mx8)x16	1Rx16	-	TS256MSK64W6X
	4GB	(256Mx8)x16	2Rx8	TS512MLK64V6N	TS512MSK64V6N
		(512Mx8)x8	1Rx8	TS512MLK64V6H	TS512MSK64V6H
8GB	(512Mx8)x16	2Rx8	TS1GLK64V6H	TS1GSK64V6H	
	(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	
	(512Mx8)x16	2Rx8	-	TS256MSK64W6N-I	
Low Voltage + Wide Temp. (-40°C~ 85°C)	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 1866 MT/s and 1333 MT/s are also available.

# DDR3 ECC DIMMs

- ECC Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- Meets JEDEC standard & supports ECC function
- 100% tested for stability, compatibility, and performance
- Stable signal integrity at high frequency operation
- Extra-thick 30μ" gold plated contact pins



Module Type	DDR3 ECC Long-DIMM	DDR3 ECC SO-DIMM
Standard	JEDEC® standard	
Speed	1600 MT/s	
Capacity	2GB~8GB	
Voltage	Standard: 1.5V / Low Voltage: 1.35V	
Pin Count	240 pin	204 pin
PCB Height	Standard: 1.18 inches Very Low Profile: 0.74 inches	1.18 inches
PCB Gold Finger Thickness	30μ"	
Anti-Sulfuration	Default	
Operating Temperature	Standard Temperature: 0°C~ 85°C Wide Temperature: -40°C~ 85°C	

## DDR3-1600

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard (0°C~ 85°C)	2GB	(256Mx8)x9	1Rx8	TS256MLK72V6N	TS256MSK72V6N
	4GB	(256Mx8)x18	2Rx8	TS512MLK72V6N	-
		(512Mx8)x9	1Rx8	TS512MLK72V6H	TS512MSK72V6H
Low Voltage (0°C~ 85°C)	8GB	(512Mx8)x18	2Rx8	TS1GLK72V6H	TS1GSK72V6H
	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 Registered DIMMs

- Registered Long-DIMMs and VLP (Very Low Profile) DIMMs for embedded servers and workstations.
- Major-grade DRAM chips directly sourced from first-tier manufacturers
- JEDEC® compliant PCB design ensures multi-platform compatibility
- 100% tested for stability, compatibility, and performance
- Extra-thick 30μ" gold plated contact pins



<b>Module Type</b>	<b>DDR3 R-DIMM</b>
<b>Standard</b>	JEDEC® standard
<b>Speed</b>	1600 MT/s
<b>Capacity</b>	4GB / 8GB
<b>Voltage</b>	Standard: 1.5V / Low Voltage: 1.35V
<b>Pin Count</b>	240 pin
<b>PCB Height</b>	Standard: 1.18 inches Very Low Profile: 0.74 inches
<b>PCB Gold Finger Thickness</b>	30μ"
<b>Anti-Sulfuration</b>	Default
<b>Operating Temperature</b>	Standard Temperature: 0°C~ 85°C

## DDR3-1600

	Capacity	Component Composition	Rank x Org.	Long-DIMM
<b>Standard Temp.</b> (0°C~ 85°C)	4GB	(256Mx8)x18	2Rx8	TS512MKR72V6N
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6H
<b>Wide Temp.</b> (-40°C~ 85°C)	4GB	(512Mx8)x9	1Rx8	TS512MKR72W6H
	8GB	(512Mx8)x18	2Rx8	TS1GKR72W6H
<b>Low Voltage</b> (0°C~ 85°C)	4GB	(512Mx8)x9	1Rx8	TS512MKR72V6HL
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6HL

# SSD Solutions

Transcend's Solid-State Drive (SSD) solutions offer fast, reliable performance and capacious storage capacities for devices working in extreme industrial conditions. With Power Shield(PS), Dynamic Thermal Throttling, and S.M.A.R.T. analysis supported, the SSDs are durable enough for large-scale deployment.



## Product Line

Interface	Model	Flash Type	Capacity	Operating Temperature	
PCIe M.2	MTE710T / MTE710T-I	112-layer 3D TLC	256GB~2TB	-20°C~75°C / -40°C~85°C	
	MTE670T / MTE670T-I		128GB~1TB		
	2280	MTE662T2 / MTE662T-I	96-layer 3D TLC	128GB~2TB	-20°C~75°C / -40°C~85°C
		MTE652T2 / MTE652T-I		64GB~512GB	
		MTE632T		128GB~512GB	0°C~70°C
	2242	MTE452T2 / MTE452T-I	96-layer 3D TLC	128GB~512GB	-20°C~75°C / -40°C~85°C
2230	MTE352T				
SATA III 2.5"	SSD470K / SSD470K-I	112-layer 3D TLC	128GB~4TB	-20°C~75°C / -40°C~85°C	
	SSD460K / SSD460K-I		128GB~2TB		
	SSD452K2 / SSD452K-I	96-layer 3D TLC	64GB~2TB	-20°C~75°C / -40°C~85°C	
	SSD422K	MLC	32GB~1TB	0°C~70°C	
	SSD420K / SSD420I		16GB~1TB	0°C~70°C / -40°C~85°C	
SATA III M.2	MTS970T	112-layer 3D TLC	128GB~2TB	-20°C~75°C	
	MTS960T / MTS960T-I		128GB~1TB	-20°C~75°C / -40°C~85°C	
	2280	MTS952T2 / MTS952T-I	96-layer 3D TLC	64GB~2TB	-20°C~75°C / -40°C~85°C
		MTS932T		64GB / 128GB	0°C~70°C
	MTS810M	MLC	32GB~256GB	0°C~70°C	
	MTS802M / MTS802I		32GB~1TB	0°C~70°C / -40°C~85°C	
	2260	MTS602M / MTS602I	MLC	32GB~512GB	0°C~70°C / -40°C~85°C
	2242	MTS570T / MTS570T-I	112-layer 3D TLC	128GB~1TB	-20°C~75°C / -40°C~85°C
		MTS560T / MTS560T-I			
		MTS552T2 / MTS552T2-I	96-layer 3D TLC	64GB~512GB	-20°C~75°C / -40°C~85°C
		MTS532T		64GB~128GB	0°C~70°C
	MTS410M	MLC	16GB~128GB	0°C~70°C	
MTS402M / MTS402I	16GB~512GB		0°C~70°C / -40°C~85°C		
SATA III mSATA	MSA470T / MSA470T-I	112-layer 3D TLC	128GB~1TB	-20°C~75°C / -40°C~85°C	
	MSA452T2 / MSA452T-I	96-layer 3D TLC	64GB~1TB		
	MSA380M	MLC	16GB~256GB	0°C~70°C	
	MSA372M/MSA372I		16GB~1TB	0°C~70°C / -40°C~85°C	
SATA III mSATA mini	MSM362M/MSM362I	MLC	16GB~128GB	0°C~70°C / -40°C~85°C	
SATA III Half-Slim	HSD470T / HSD470T-I	112-layer 3D TLC	128GB~1TB	-20°C~75°C / -40°C~85°C	
	HSD452T / HSD452T-I	96-layer 3D TLC	64GB~512GB	-20°C~75°C / -40°C~85°C	
	HSD372M / HSD372I	MLC	16GB~128GB	0°C~70°C / -40°C~85°C	



Transcend also provides SSDs featuring Power Loss Protection (PLP), to ensure data integrity during unstable power supply, TCG Opal 2.0, to enhance data safety, and SLC Mode, to increase endurance and performance under cost control. These special product lines fix the problems commonly seen in modern industrial applications.

## PLP SSD Product Line

Interface	Model	Flash Type	Capacity	Operating Temperature
PCIe M.2	2280 MTE662P / MTE662P-I	96-layer 3D TLC	128GB~1TB	-20°C~75°C / -40°C~85°C
SATA III 2.5"	SSD452P / SSD452P-I		64GB~2TB	
SATA III M.2	2280 MTS952P		128GB~1TB	-20°C~75°C
SATA III mSATA	MSA452P		64GB / 128GB	

## TCG Opal SSD Product Line

Interface	Model	Flash Type	Capacity	Operating Temperature
PCIe M.2	2280 MTE662A	96-layer 3D TLC	128GB~2TB	-20°C~75°C
SATA III M.2	MTS952A		64GB~2TB	
SATA III 2.5"	SSD452A			

## SLC Mode SSD Product Line

Interface	Model	Flash Type	Capacity	Operating Temperature
SATA III 2.5"	SSD530K	96-layer 3D TLC (SLC Mode)	64GB / 128GB	-20°C~75°C
	SSD510K	MLC (SLC Mode)	16GB~128GB	0°C~70°C
SATA III M.2	2280 MTS862K	MLC (SLC Mode)	16GB / 32GB	0°C~70°C
	2242 MTS462K		8GB / 16GB	
SATA III mSATA	MSA510 / MSA510I	MLC (SLC Mode)	8GB~128GB	0°C~70°C / -40°C~85°C

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

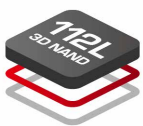
# Product Highlights

## 112-Layer 3D NAND SSDs

As AIoT, smart applications and digital transformation are on the rise, having advanced and better solid storage devices is fundamental. Transcend has adopted the new 112-layer 3D NAND flash and launched a new series of highly reliable embedded SSDs.

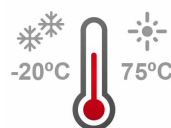
Transcend's 112-layer 3D NAND SSDs offer an endurance rating of 3K P/E cycles, and are able to operate securely under an extended temperature range (-20°C~75°C). Corner Bond technology is implemented to create high durability that withstands shock and vibration. All drives have undergone robust tests to ensure that optimal reliability can fully support heavy industrial workloads.

### Key Features



#### High-quality NAND flash

Highest quality chips and controller ICs manufactured by world leading suppliers.



#### Extended temperature

Stable operation under the extended temperature range(-20°C~75°C).



#### Thermal management

Dynamic Thermal Throttling allows SSDs to self-control and increase reliability.

**3000**  
P/E Cycles

#### Great endurance

3,000 P/E Cycles guaranteed and Corner Bond technology adopted to support heavy-duty tasks.

# PCIe M.2 SSDs (2280)



Interface	PCIe Gen4 x4	PCIe Gen3 x4
Type	2280-D2-M	2280-S2-M
Flash	112-layer 3D TLC	
Model	MTE710T / MTE710T-I	MTE670T / MTE670T-I
Capacity	256GB~2TB	128GB~1TB
Sequential R/W*	3,800/3,200 MB/s	2,100/1,600 MB/s
TBW*	1,700 TBW	960 TBW
MTBF*	3,000,000 hours	
DWPD*	1.55 (3 yrs)	0.88 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C	
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm
Operating Voltage	3.3V±5%	
Max. Power Consumption	4.6W	3.1W
DRAM Cache	Supported	-
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Extended Temp. (-20°C ~ 75°C)	128GB	-	TS128GMTE670T
	256GB	TS256GMTE710T	TS256GMTE670T
	512GB	TS512GMTE710T	TS512GMTE670T
	1TB	TS1TMTE710T	TS1TMTE670T
	2TB	TS2TMTE710T	-
Wide Temp. (-40°C ~ 85°C)	128GB	-	TS128GMTE670T-I
	256GB	TS256GMTE710T-I	TS256GMTE670T-I
	512GB	TS512GMTE710T-I	TS512GMTE670T-I
	1TB	TS1TMTE710T-I	TS1TMTE670T-I
	2TB	TS2TMTE710T-I	-

R/W: Read/Write

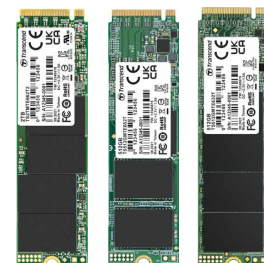
TBW: Terabytes Written

MTBF: Mean Time Between Failures

DWPD: Drive Writes Per Day

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

# PCIe M.2 SSDs (2280)



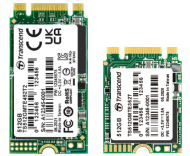
Interface	PCIe Gen3 x4		
Type	2280-D2-M		2280-S2-M
Flash	96-layer 3D TLC		
Model	MTE662T2 / MTE662T-I	MTE652T2 / MTE652T-I	MTE632T
Capacity	128GB~2TB	64GB~512GB	128GB~512GB
Sequential R/W*	3,500/2,700 MB/s	2,100/1,250 MB/s	1,700/900 MB/s
TBW*	4,400 TBW	1,080 TBW	400 TBW
MTBF*	3,000,000 hours		
DWPD*	2 (3 yrs)		0.73 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C		Standard Temp.: 0°C~70°C
Dimensions	80 x 22 x 3.58 mm		80 x 22 x 2.23 mm
Operating Voltage	3.3V±5%		
Max. Power Consumption	7.0W	3.0W	4.2W
DRAM Cache	Supported		-
Corner Bond	Supported		
PCB Gold Finger Thickness	30μ"		-

	Capacity	Ordering Information		
Standard Temp. (0°C ~ 70°C)	128GB	-	-	TS128GMTE632T
	256GB	-	-	TS256GMTE632T
	512GB	-	-	TS512GMTE632T
	1TB	-	-	-
	2TB	-	-	-
Extended Temp. (-20°C ~ 75°C)	64GB	-	TS64GMTE652T2	-
	128GB	TS128GMTE662T2	TS128GMTE652T2	-
	256GB	TS256GMTE662T2	TS256GMTE652T2	-
	512GB	TS512GMTE662T2	TS512GMTE652T2	-
	1TB	TS1TMTE662T2	-	-
	2TB	TS2TMTE662T2	-	-
Wide Temp. (-40°C ~ 85°C)	128GB	TS128GMTE662T-I	TS128GMTE652T-I	-
	256GB	TS256GMTE662T-I	TS256GMTE652T-I	-
	512GB	TS512GMTE662T-I	TS512GMTE652T-I	-
	1TB	TS1TMTE662T-I	-	-
	2TB	TS2TMTE662T-I	-	-

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



# PCIe M.2 SSDs (2242/2230)



Interface	PCIe Gen3 x2	
Type	2242-D2-B-M	2230-S3-B-M
Flash	96-layer 3D TLC	
Model	MTE452T2 / MTE452T-I	MTE352T
Capacity	128GB~512GB	
Sequential R/W*	1,700/1,250 MB/s	1,700/1,000 MB/s
TBW*	1,080 TBW	
MTBF*	3,000,000 hours	
DWPD*	2 (3 yrs)	
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C	Extended Temp.: -20°C~75°C
Dimensions	42 x 22 x 3.58 mm	30 x 22 x 2.38 mm
Operating Voltage	3.3V±5%	
Max. Power Consumption	3.0W	3.2W
DRAM Cache	Supported	-
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Extended Temp. (-20°C ~ 75°C)	128GB	TS128GMTE452T2	TS128GMTE352T
	256GB	TS256GMTE452T2	TS256GMTE352T
	512GB	TS512GMTE452T2	TS512GMTE352T
Wide Temp. (-40°C ~ 85°C)	128GB	TS128GMTE452T-I	-
	256GB	TS256GMTE452T-I	-
	512GB	TS512GMTE452T-I	-

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

# SATA III 2.5" SSDs



Interface	SATA III 6Gb/s		
Flash	112-layer 3D TLC		96-layer 3D TLC
Model	SSD470K / SSD470K-I	SSD460K / SSD460K-I	SSD452K2 / SSD452K-I
Capacity	128GB~4TB	128GB~2TB	64GB~2TB
Sequential R/W*	560/520 MB/s	560/500 MB/s	560/520 MB/s
TBW*	9,680 TBW	4,376 TBW	3,520 TBW
MTBF*	3,000,000 hours		
DWPD*	2.16 (3 yrs)	1.95 (3 yrs)	1.61 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C		
Dimensions	100 x 69.85 x 6.8 mm		
Operating Voltage	5V±5%		
Max. Power Consumption	5W	1.9W	3.5W
DRAM Cache	Supported	-	Supported

	Capacity	Ordering Information		
Extended Temp. (-20°C ~ 75°C)	64GB	-	-	TS64GSSD452K2
	128GB	TS128GSSD470K	TS128GSSD460K	TS128GSSD452K2
	256GB	TS256GSSD470K	TS256GSSD460K	TS256GSSD452K2
	512GB	TS512GSSD470K	TS512GSSD460K	TS512GSSD452K2
	1TB	TS1TSSD470K	TS1TSSD460K	TS1TSSD452K2
	2TB	TS2TSSD470K	TS2TSSD460K	TS2TSSD452K2
	4TB	TS4TSSD470K	-	-
Wide Temp. (-40°C ~ 85°C)	64GB	-	-	TS64GSSD452K-I
	128GB	TS128GSSD470K-I	TS128GSSD460K-I	TS128GSSD452K-I
	256GB	TS256GSSD470K-I	TS256GSSD460K-I	TS256GSSD452K-I
	512GB	TS512GSSD470K-I	TS512GSSD460K-I	TS512GSSD452K-I
	1TB	TS1TSSD470K-I	TS1TSSD460K-I	TS1TSSD452K-I
	2TB	TS2TSSD470K-I	TS2TSSD460K-I	TS2TSSD452K-I
	4TB	TS4TSSD470K-I	-	-

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

# SATA III 2.5" SSDs

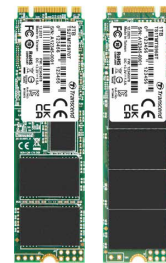


Interface	SATA III 6Gb/s	
Flash	MLC NAND flash	
Model	SSD422K	SSD420K / SSD420I
Capacity	32GB~1TB	16GB~1TB
Sequential R/W*	550/460 MB/s	530/470 MB/s
TBW*	2,940 TBW	
MTBF*	2,000,000 hours	
DWPD*	2.6 (3 yrs)	
Operating Temperature	Standard Temp.: 0°C~70°C	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	100 x 69.85 x 6.8 mm	
Operating Voltage	5V±5%	
Max. Power Consumption	7.75W	2.65W
DRAM Cache	Supported	

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	16GB	-	TS16GSSD420K
	32GB	TS32GSSD422K	TS32GSSD420K
	64GB	TS64GSSD422K	TS64GSSD420K
	128GB	TS128GSSD422K	TS128GSSD420K
	256GB	TS256GSSD422K	TS256GSSD420K
	512GB	TS512GSSD422K	TS512GSSD420K
	1TB	TS1TSSD422K	TS1TSSD420K
Wide Temp. (-40°C ~ 85°C)	16GB	-	TS16GSSD420I
	32GB	-	TS32GSSD420I
	64GB	-	TS64GSSD420I
	128GB	-	TS128GSSD420I
	256GB	-	TS256GSSD420I
	512GB	-	TS512GSSD420I
	1TB	-	TS1TSSD420I

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

# SATA III M.2 SSDs (2280)



Interface	SATA III 6Gb/s	
Type	2280-D2-B-M	
Flash	112-layer 3D TLC	
Model	MTS970T	MTS960T / MTS960T-I
Capacity	128GB~2TB	128GB~1TB
Sequential R/W*	560/520 MB/s	560/500 MB/s
TBW*	4,840 TBW	1,094 TBW
MTBF*	3,000,000 hours	
DWPD*	2.16 (3yrs)	1.95 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C
Dimensions	80 x 22 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	4.0W	1.4W
DRAM Cache	Supported	-
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Extended Temp. (-20°C ~ 75°C)	128GB	TS128GMTS970T	TS128GMTS960T
	256GB	TS256GMTS970T	TS256GMTS960T
	512GB	TS512GMTS970T	TS512GMTS960T
	1TB	TS1TMTS970T	TS1TMTS960T
	2TB	TS2TMTS970T	-
Wide Temp. (-40°C ~ 85°C)	128GB	-	TS128GMTS960T-I
	256GB	-	TS256GMTS960T-I
	512GB	-	TS512GMTS960T-I
	1TB	-	TS1TMTS960T-I

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



# SATA III M.2 SSDs (2280)



Interface	SATA III 6Gb/s	
Type	2280-D2-B-M	2280-S2-B-M
Flash	96-layer 3D TLC	
Model	MTS952T2 / MTS952T-I	MTS932T
Capacity	64GB~2TB	64GB / 128GB
Sequential R/W*	560/520 MB/s	550/400 MB/s
TBW*	3,520 TBW	160 TBW
MTBF*	3,000,000 hours	
DWPD*	1.61 (3 yrs)	1.16 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C	Standard Temp.: 0°C~70°C
Dimensions	80 x 22 x 3.58 mm	80 x 22 x 2.23 mm
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.1W	1.4W
DRAM Cache	Supported	-
Corner Bond	Supported	-
PCB Gold Finger Thickness	30μ"	-

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	64GB	-	TS64GMTS932T
	128GB	-	TS128GMTS932T
Extended Temp. (-20°C ~ 75°C)	64GB	TS64GMTS952T2	-
	128GB	TS128GMTS952T2	-
	256GB	TS256GMTS952T2	-
	512GB	TS512GMTS952T2	-
	1TB	TS1TMTS952T2	-
	2TB	TS2TMTS952T2	-
Wide Temp. (-40°C ~ 85°C)	64GB	TS64GMTS952T-I	-
	128GB	TS128GMTS952T-I	-
	256GB	TS256GMTS952T-I	-
	512GB	TS512GMTS952T-I	-
	1TB	TS1TMTS952T-I	-
	2TB	TS2TMTS952T-I	-

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

# SATA III M.2 SSDs (2280)



Interface	SATA III 6Gb/s	
Type	2280-D2-B-M	
Flash	MLC	
Model	MTS810M	MTS802M / MTS802I
Capacity	32GB~256GB	32GB~1TB
Sequential R/W*	550/420 MB/s	530/460 MB/s
TBW*	740 TBW	2,360 TBW
MTBF*	2,500,000 hours	
DWPD*	2.6 (3 yrs)	
Operating Temperature	Standard Temp.: 0°C~70°C	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	80 x 22 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	1.82W	2.64W
DRAM Cache	Supported	
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	32GB	TS32GMTS810M	TS32GMTS802M
	64GB	TS64GMTS810M	TS64GMTS802M
	128GB	TS128GMTS810M	TS128GMTS802M
	256GB	TS256GMTS810M	TS256GMTS802M
	512GB	-	TS512GMTS802M
	1TB	-	TS1TMTS802M
Wide Temp. (-40°C ~ 85°C)	32GB	-	TS32GMTS802I
	64GB	-	TS64GMTS802I
	128GB	-	TS128GMTS802I
	256GB	-	TS256GMTS802I
	512GB	-	TS512GMTS802I
	1TB	-	TS1TMTS802I

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

# SATA III M.2 SSDs (2260)

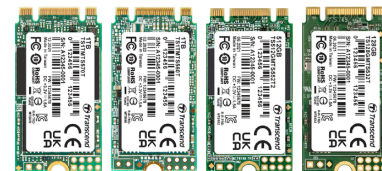


Interface	SATA III 6Gb/s
Type	2260-D2-B-M
Flash	MLC
Model	MTS602M / MTS602I
Capacity	32GB~512GB
Sequential R/W*	530/450 MB/s
TBW*	1,480 TBW
MTBF*	2,500,000 hours
DWPD*	2.6 (3 yrs)
Operating Temperature	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	60 x 22 x 3.58 mm
Operating Voltage	3.3V±5%
Max. Power Consumption	2.5W
DRAM Cache	Supported
Corner Bond	Supported
PCB Gold Finger Thickness	30μ"

	Capacity	Ordering Information
Standard Temp. (0°C ~ 70°C)	32GB	TS32GMTS602M
	64GB	TS64GMTS602M
	128GB	TS128GMTS602M
	256GB	TS256GMTS602M
	512GB	TS512GMTS602M
Wide Temp. (-40°C ~ 85°C)	32GB	TS32GMTS602I
	64GB	TS64GMTS602I
	128GB	TS128GMTS602I
	256GB	TS256GMTS602I
	512GB	TS512GMTS602I

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

# SATA III M.2 SSDs (2242)



Interface	SATA III 6Gb/s			
Type	2242-D2-B-M			
Flash	112-layer 3D TLC		96-layer 3D TLC	
Model	MTS570T / MTS570T-I	MTS560T / MTS560T-I	MTS552T2 / MTS552T2-I	MTS532T
Capacity	128GB~1TB		64GB~512GB	64GB / 128GB
Sequential R/W*	560/520 MB/s	560/500 MB/s	560/510 MB/s	550/400 MB/s
TBW*	1,480 TBW	1,094 TBW	880 TBW	160 TBW
MTBF*	3,000,000 hours			
DWPD*	1.35 (3 yrs)	1.95 (3 yrs)	1.61 (3 yrs)	1.16 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C			Standard Temp.: 0°C~70°C
Dimensions	42 x 22 x 3.58 mm			
Operating Voltage	3.3V±5%			
Max. Power Consumption	3.2W	1.4W	1.7W	1.4W
DRAM Cache	Supported	-	Supported	-
Corner Bond	Supported			-
PCB Gold Finger Thickness	30μ"			-

	Capacity	Ordering Information			
Standard Temp. (0°C ~ 70°C)	64GB	-	-	-	TS64GMTS532T
	128GB	-	-	-	TS128GMTS532T
Extended Temp. (-20°C ~ 75°C)	64GB	-	-	TS64GMTS552T2	-
	128GB	TS128GMTS570T	TS128GMTS560T	TS128GMTS552T2	-
	256GB	TS256GMTS570T	TS256GMTS560T	TS256GMTS552T2	-
	512GB	TS512GMTS570T	TS512GMTS560T	TS512GMTS552T2	-
Wide Temp. (-40°C ~ 85°C)	1TB	TS1TMTS570T	TS1TMTS560T	-	-
	64GB	-	-	TS64GMTS552T2-I	-
	128GB	TS128GMTS570T-I	TS128GMTS560T-I	TS128GMTS552T2-I	-
	256GB	TS256GMTS570T-I	TS256GMTS560T-I	TS256GMTS552T2-I	-
	512GB	TS512GMTS570T-I	TS512GMTS560T-I	TS512GMTS552T2-I	-
	1TB	TS1TMTS570T-I	TS1TMTS560T-I	-	-

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



# SATA III M.2 SSDs (2242)

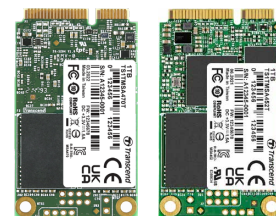


Interface	SATA III 6Gb/s	
Type	2242-D2-B-M	
Flash	MLC	
Model	MTS410M	MTS402M / MTS402I
Capacity	16GB~128GB	16GB~512GB
Sequential R/W*	550/260 MB/s	530/470 MB/s
TBW*	360 TBW	1,100 TBW
MTBF*	2,500,000 hours	
DWPD*	2.6 (3 yrs)	2 (3 yrs)
Operating Temperature	Standard Temp.: 0°C~70°C	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	42 x 22 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	1.22W	2.48W
DRAM Cache	Supported	
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	16GB	TS16GMTS410M	TS16GMTS402M
	32GB	TS32GMTS410M	TS32GMTS402M
	64GB	TS64GMTS410M	TS64GMTS402M
	128GB	TS128GMTS410M	TS128GMTS402M
	256GB	-	TS256GMTS402M
	512GB	-	TS512GMTS402M
Wide Temp. (-40°C ~ 85°C)	16GB	-	TS16GMTS402I
	32GB	-	TS32GMTS402I
	64GB	-	TS64GMTS402I
	128GB	-	TS128GMTS402I
	256GB	-	TS256GMTS402I
	512GB	-	TS512GMTS402I

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

# SATA III mSATA SSDs

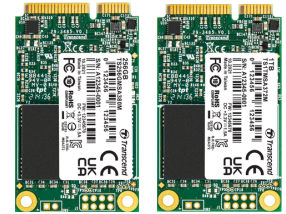


Interface	SATA III 6Gb/s	
Form Factor	MO-300A	
Flash	112-layer 3D TLC	96-layer 3D TLC
Model	MSA470T / MSA470T-I	MSA452T2 / MSA452T-I
Capacity	128GB~1TB	64GB~1TB
Sequential R/W*	560/520 MB/s	
TBW*	2,420 TBW	1,760 TBW
MTBF*	3,000,000 hours	
DWPD*	2.16 (3 yrs)	1.61 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C	
Dimensions	50.8 x 29.85 x 4.85 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	3.4W	2.4W
DRAM Cache	Supported	
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Extended Temp. (-20°C ~ 75°C)	64GB	-	TS64GMSA452T2
	128GB	TS128GMSA470T	TS128GMSA452T2
	256GB	TS256GMSA470T	TS256GMSA452T2
	512GB	TS512GMSA470T	TS512GMSA452T2
	1TB	TS1TMSA470T	TS1TMSA452T2
Wide Temp. (-40°C ~ 85°C)	64GB	-	TS64GMSA452T-I
	128GB	TS128GMSA470T-I	TS128GMSA452T-I
	256GB	TS256GMSA470T-I	TS256GMSA452T-I
	512GB	TS512GMSA470T-I	TS512GMSA452T-I
	1TB	TS1TMSA470T-I	TS1TMSA452T-I

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

# SATA III mSATA SSDs



Interface	SATA III 6Gb/s	
Form Factor	MO-300A	
Flash	MLC	
Model	MSA380M	MSA372M / MSA372I
Capacity	16GB~256GB	16GB~1TB
Sequential R/W*	550/420 MB/s	550/450 MB/s
TBW*	740 TBW	2,360 TBW
MTBF*	2,500,000 hours	
DWPD*	2.6 (3 yrs)	
Operating Temperature	Standard Temp.: 0°C~70°C	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	50.8 x 29.85 x 4.85 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	1.82W	2.64W
DRAM Cache	Supported	
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	16GB	TS16GMSA380M	TS16GMSA372M
	32GB	TS32GMSA380M	TS32GMSA372M
	64GB	TS64GMSA380M	TS64GMSA372M
	128GB	TS128GMSA380M	TS128GMSA372M
	256GB	TS256GMSA380M	TS256GMSA372M
	512GB	-	TS512GMSA372M
	1TB	-	TS1TMSA372M
Wide Temp. (-40°C ~ 85°C)	16GB	-	TS16GMSA372I
	32GB	-	TS32GMSA372I
	64GB	-	TS64GMSA372I
	128GB	-	TS128GMSA372I
	256GB	-	TS256GMSA372I
	512GB	-	TS512GMSA372I
	1TB	-	TS1TMSA372I

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

# SATA III mSATA mini SSDs

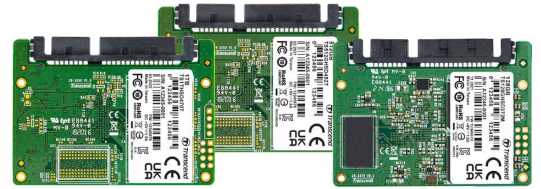


<b>Interface</b>	SATA III 6Gb/s
<b>Form Factor</b>	MO-300B
<b>Flash</b>	MLC
<b>Model</b>	MSM362M / MSM362I
<b>Capacity</b>	16GB~128GB
<b>Sequential R/W*</b>	520/220 MB/s
<b>TBW*</b>	168 TBW
<b>MTBF*</b>	2,500,000 hours
<b>DWPD*</b>	1.19 (3 yrs)
<b>Operating Temperature</b>	Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
<b>Dimensions</b>	26.8 x 29.85 x 3.85 mm
<b>Operating Voltage</b>	3.3V±5%
<b>Max. Power Consumption</b>	2.01W

	Capacity	Ordering Information
<b>Standard Temp.</b> (0°C ~ 70°C)	16GB	TS16GMSM362M
	32GB	TS32GMSM362M
	64GB	TS64GMSM362M
	128GB	TS128GMSM362M
<b>Wide Temp.</b> (-40°C ~ 85°C)	16GB	TS16GMSM362I
	32GB	TS32GMSM362I
	64GB	TS64GMSM362I
	128GB	TS128GMSM362I

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

# SATA III Half-Slim SSDs



<b>Interface</b>	<b>SATA III 6Gb/s</b>		
<b>Form Factor</b>	<b>MO-297</b>		
<b>Flash</b>	<b>112-layer 3D TLC</b>	<b>96-layer 3D TLC</b>	<b>MLC</b>
<b>Model</b>	HSD470T / HSD470T-I	HSD452T / HSD452T-I	HSD372M / HSD372I
<b>Capacity</b>	128GB~1TB	64GB~512GB	16GB~128GB
<b>Sequential R/W*</b>	560/520 MB/s		530/200 MB/s
<b>TBW*</b>	2,420 TBW	880 TBW	360 TBW
<b>MTBF*</b>	3,000,000 hours		2,500,000 hours
<b>DWPD*</b>	2.16 (3 yrs)	1.61 (3 yrs)	2.6 (3 yrs)
<b>Operating Temperature</b>	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C		Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
<b>Dimensions</b>	54 x 39.8 x 4 mm		
<b>Operating Voltage</b>	5V±5%		
<b>Max. Power Consumption</b>	4W	2.7W	1.85W
<b>DRAM Cache</b>	Supported		
<b>Corner Bond</b>	Supported		

	Capacity	Ordering Information		
<b>Standard Temp.</b> (0°C ~ 70°C)	16GB	-	-	TS16GHSD372M
	32GB	-	-	TS32GHSD372M
	64GB	-	-	TS64GHSD372M
	128GB	-	-	TS128GHSD372M
<b>Extended Temp.</b> (-20°C ~ 75°C)	64GB	-	TS64GHSD452T	-
	128GB	TS128GHSD470T	TS128GHSD452T	-
	256GB	TS256GHSD470T	TS256GHSD452T	-
	512GB	TS512GHSD470T	TS512GHSD452T	-
	1TB	TS1THSD470T	-	-
<b>Wide Temp.</b> (-40°C ~ 85°C)	16GB	-	-	TS16GHSD372I
	32GB	-	-	TS32GHSD372I
	64GB	-	TS64GHSD452T-I	TS64GHSD372I
	128GB	TS128GHSD470T-I	TS128GHSD452T-I	TS128GHSD372I
	256GB	TS256GHSD470T-I	TS256GHSD452T-I	-
	512GB	TS512GHSD470T-I	TS512GHSD452T-I	-
	1TB	TS1THSD470T-I	-	-

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



# PLP SSDs

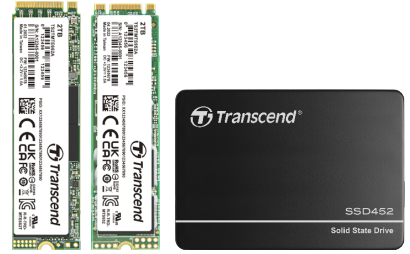


Interface	PCIe Gen3 x4		SATA III 6Gb/s	
Type	2280-D5-M	2.5"	2280-D5-B-M	MO-300A
Flash	96-layer 3D TLC			
Model	MTE662P/MTE662P-I	SSD452P / SSD452P-I	MTS952P	MSA452P
Capacity	128GB~1TB	64GB~2TB	128GB~1TB	64GB / 128GB
Sequential R/W*	3,400/2,300MB/s		560/520 MB/s	
TBW*	2,200 TBW	3,520 TBW	1,760 TBW	220 TBW
MTBF*	3,000,000 hours			
DWPD*	2 (3 yrs)		1.61 (3 yrs)	
Operating Temperature	Extended Temp.: -20°C~75°C Wide Temp.: -40°C~85°C		Extended Temp.: -20°C~75°C	
Dimensions	80 x 22 x 3.88 mm	100 x 69.85 x 6.8 mm	80 x 22 x 3.58 mm	50.8 x 29.85 x 4.85 mm
Operating Voltage	3.3V±5%	5V±5%	3.3V±5%	
Max. Power Consumption	3.4W	3.5W	2.3W	2.0W
DRAM Cache	Supported			
Corner Bond	Supported	-	Supported	
PCB Gold Finger Thickness	30μ"	-	30μ"	

	Capacity	Ordering Information			
Extended Temp. (-20°C ~ 75°C)	64GB	-	TS64GSSD452P	-	TS64GMSA452P
	128GB	TS128GMTE662P	TS128GSSD452P	TS128GMTS952P	TS128GMSA452P
	256GB	TS256GMTE662P	TS256GSSD452P	TS256GMTS952P	-
	512GB	TS512GMTE662P	TS512GSSD452P	TS512GMTS952P	-
	1TB	TS1TMTE662P	TS1TSSD452P	TS1TMTS952P	-
	2TB	-	TS2TSSD452P	-	-
Wide Temp. (-40°C ~ 85°C)	64GB	-	TS64GSSD452P-I	-	-
	128GB	TS128GMTE662P-I	TS128GSSD452P-I	-	-
	256GB	TS256GMTE662P-I	TS256GSSD452P-I	-	-
	512GB	TS512GMTE662P-I	TS512GSSD452P-I	-	-
	1TB	TS1TMTE662P-I	TS1TSSD452P-I	-	-
	2TB	-	TS2TSSD452P-I	-	-

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

# TCG Opal SSDs



Interface	PCIe Gen3 x4	SATA III 6Gb/s	
Type	2280-D2-M	2280-D2-B-M	2.5"
Flash	96-layer 3D TLC		
Model	MTE662A	MTS952A	SSD452A
Capacity	128GB~2TB	64GB~2TB	
Sequential R/W*	3,500/2,700MB/s		560/410 MB/s
TBW*	4,400 TBW	440 TBW	
MTBF*	3,000,000 hours		
DWPD*	2 (3 yrs)	1.61 (3 yrs)	
Operating Temperature	Extended Temp.: -20°C~75°C		
Dimensions	80 x 22 x 3.58 mm		100 x 69.85 x 6.8 mm
Operating Voltage	3.3V±5%		5V±5%
Max. Power Consumption	7W	1.8W	2.6W
DRAM Cache	Supported		
Corner Bond	Supported		-
PCB Gold Finger Thickness	30μ"		-

	Capacity	Ordering Information		
Extended Temp. (-20°C ~ 75°C)	64GB	-	TS64GMTS952A	TS64GSSD452A
	128GB	TS128GMTE662A	TS128GMTS952A	TS128GSSD452A
	256GB	TS256GMTE662A	TS256GMTS952A	TS256GSSD452A
	512GB	TS512GMTE662A	TS512GMTS952A	TS512GSSD452A
	1TB	TS1TMTE662A	TS1TMTS952A	TS1TSSD452A
	2TB	TS2TMTE662A	TS2TMTS952A	TS2TSSD452A

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

# SLC Mode SSDs

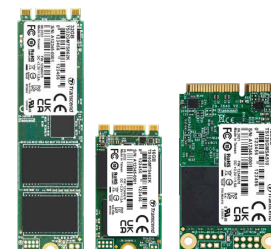


Interface	SATA III 6Gb/s	
Type	2.5"	
Flash	96-layer 3D TLC (SLC mode)	MLC (SLC mode)
Model	SSD530K	SSD510K
Capacity	64GB / 128GB	16GB~128GB
Sequential R/W*	560/490 MB/s	530/440 MB/s
TBW*	6,400 TBW	2,840 TBW
MTBF*	3,000,000 hours	1,500,000 hours
DWPD*	45.7 (3 yrs)	15.2 (3 yrs)
Operating Temperature	Extended Temp.: -20°C~75°C	Standard Temp.: 0°C ~ 70°C
Dimensions	100 x 69.85 x 6.8 mm	
Operating Voltage	5V±5%	
Max. Power Consumption	2.8W	2.95W
DRAM Cache	Supported	

	Capacity	Ordering Information	
Standard Temp. (0°C ~ 70°C)	16GB	-	TS16GSSD510K
	32GB	-	TS32GSSD510K
	64GB	-	TS64GSSD510K
	128GB	-	TS128GSSD510K
Extended Temp. (-20°C ~ 75°C)	16GB	-	-
	32GB	-	-
	64GB	TS64GSSD530K	-
	128GB	TS128GSSD530K	-

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

# SLC Mode SSDs



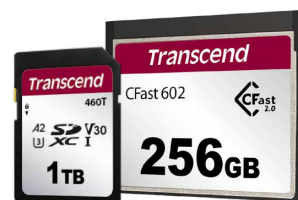
Interface	SATA III 6Gb/s		
Type	2280-D2-B-M	2242-D2-B-M	MO-300A
Flash	MLC (SLC mode)		
Model	MTS862K	MTS462K	MSA510 / MSA510I
Capacity	16GB / 32GB	8GB / 16GB	8GB~128GB
Sequential R/W*	530/150 MB/s	300/150 MB/s	540/450 MB/s
TBW*	580 TBW	260 TBW	2,840 TBW
MTBF*	3,000,000 hours		
DWPD*	14.8 (3 yrs)	15.2 (3 yrs)	
Operating Temperature	Standard Temp.: 0°C~70°C		Standard Temp.: 0°C~70°C Wide Temp.: -40°C~85°C
Dimensions	80 x 22 x 3.58 mm	42 x 22 x 3.58 mm	50.8 x 29.85 x 4.85 mm
Operating Voltage	3.3V±5%		
Max. Power Consumption	1.91W	0.8W	2.87W
DRAM Cache	Supported		
PCB Gold Finger Thickness	30μ"		

	Capacity	Ordering Information		
Standard Temp. (0°C ~ 70°C)	8GB	-	TS8GMTS462K	TS8GMSA510
	16GB	TS16GMTS862K	TS16GMTS462K	TS16GMSA510
	32GB	TS32GMTS862K	-	TS32GMSA510
	64GB	-	-	TS64GMSA510
	128GB	-	-	TS128GMSA510
Wide Temp. (-40°C ~ 85°C)	8GB	-	-	TS8GMSA510I
	16GB	-	-	TS16GMSA510I
	32GB	-	-	TS32GMSA510I
	64GB	-	-	TS64GMSA510I
	128GB	-	-	TS128GMSA510I

\*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. The memory card series includes SD, microSD, CompactFlash, and CFast 2.0 cards.



## Product Line

Form Factor	Model	Flash Type	Capacity	Operating Temperature
SD Cards	SDC460T	112-layer 3D TLC	64GB~1TB	-25°C~85°C
	SDC420T	96-layer 3D TLC	32GB~512GB	
	SDC410M		2GB~32GB	
	SDC10M	MLC	8GB~64GB	-40°C~85°C
	SDC10I		8GB~32GB	
	SDC220I	MLC (SLC Mode)	128MB~4GB	
microSD Cards	USD460T	112-layer 3D TLC	64GB ~512GB	-25°C~85°C
	USD430T	96-layer 3D TLC	32GB	-40°C~85°C
	USD230I	96-layer 3D TLC (SLC Mode)	2GB~64GB	-25°C~85°C
	USD410M		2GB~32GB	-40°C~85°C
	USD10M	MLC	4GB~32GB	
	USD10I		8GB~64GB	
	USD220I	MLC (SLC Mode)	2GB~16GB	
CompactFlash Cards	CF170	MLC	8GB~64GB	-25°C~85°C
	CF180	MLC (SLC Mode)	4GB~16GB	
CFast Cards	CFX602	MLC	8GB~256GB	-5°C~70°C
	CFX722I	MLC (SLC Mode)	32GB	-40°C~85°C



# SD Cards



Standard	SD 6.1/5.1	SD 6.1
Connector	9 pin	
Flash	112-layer 3D TLC	96-layer 3D TLC
Model	SDXC460T	SDHC/SDXC420T
Capacity	64GB~1TB	32GB~512GB
Sequential R/W*	100/85 MB/s	
TBW*	2,660TBW	1,350 TBW
Operating Temperature	Standard Temp.: -25°C~85°C	
Dimensions	24 x 32 x 2.1 mm	
Operating Voltage	2.7V ~ 3.6V	
Max. Power Consumption	2.88W	

	Capacity	Ordering Information	
Standard Temp. (-25°C~85°C)	32GB	-	TS32GSDC420T
	64GB	TS64GSDC460T	TS64GSDC420T
	128GB	TS128GSDC460T	TS128GSDC420T
	256GB	TS256GSDC460T	TS256GSDC420T
	512GB	TS512GSDC460T	TS512GSDC420T
	1TB	TS1TSDC460T	-

R/W: Read/Write

TBW: Terabytes Written

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

# SD Cards



Standard	SD 5.1/3.0	SD 3.01		SD 3.01/2.0
Connector	9 pin			
Flash	MLC			MLC (SLC Mode)
Model	SD/SDHC410M	SDXC/SDHC10M	SDHC10I	SD/SDHC220I
Capacity	2GB~32GB	8GB~64GB	8GB~32GB	128MB~4GB
Sequential R/W*	95/30 MB/s	21/20 MB/s	24/16 MB/s	22/20 MB/s
TBW*	86 TBW	120 TBW	60 TBW	66 TBW
Operating Temperature	Standard Temp.: -25°C~ 85°C		Wide Temp.: -40°C~ 85°C	
Dimensions	24 x 32 x 2.1 mm			
Operating Voltage	2.7V ~ 3.6V			
Max. Power Consumption	2.88W	0.72W		0.72W

	Capacity	Ordering Information			
Standard Temp. (-25°C~85°C)	2GB	TS2GSDC410M	-	-	-
	4GB	TS4GSDC410M	-	-	-
	8GB	TS8GSDC410M	TS8GSDHC10M	-	-
	16GB	TS16GSDC410M	TS16GSDHC10M	-	-
	32GB	TS32GSDC410M	TS32GSDHC10M	-	-
	64GB	-	TS64GSDXC10M	-	-
Wide Temp. (-40°C ~ 85°C)	128MB	-	-	-	TS128MSDC220I
	256MB	-	-	-	TS256MSDC220I
	512MB	-	-	-	TS512MSDC220I
	1GB	-	-	-	TS1GSDC220I
	2GB	-	-	-	TS2GSDC220I
	4GB	-	-	-	TS4GSDC220I
	8GB	-	-	TS8GSDHC10I	-
	16GB	-	-	TS16GSDHC10I	-
	32GB	-	-	TS32GSDHC10I	-

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

# microSD Cards



Standard	SD 6.1/5.1	SD 6.0	SD 5.1/3.01
Connector	8 pin		
Flash	112-layer 3D TLC	96-layer 3D TLC	3D TLC (SLC mode)
Model	microSDXC460T	microSDHC430T	microSDHC/SDXC230I
Capacity	64GB~512GB	32GB	2GB~64GB
Sequential R/W*	100/80 MB/s	100/40 MB/s	100/70 MB/s
TBW*	1,343 TBW	83 TBW	5,800 TBW
Operating Temperature	Standard Temp.: -25°C~ 85°C		Wide Temp.: -40°C~ 85°C
Dimensions	11 x 15 x 1 mm		
Operating Voltage	2.7V ~ 3.6V		
Max. Power Consumption	2.88W		

	Capacity	Ordering Information		
Standard Temp. (-25°C~85°C)	32GB	-	TS32GUSD430T	-
	64GB	TS64GUSD460T	-	-
	128GB	TS128GUSD460T	-	-
	256GB	TS256GUSD460T	-	-
	512GB	TS512GUSD460T	-	-
Wide Temp. (-40°C ~ 85°C)	2GB	-	-	TS2GUSD230I
	4GB	-	-	TS4GUSD230I
	8GB	-	-	TS8GUSD230I
	16GB	-	-	TS16GUSD230I
	32GB	-	-	TS32GUSD230I
	64GB	-	-	TS64GUSD230I

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

# microSD Cards

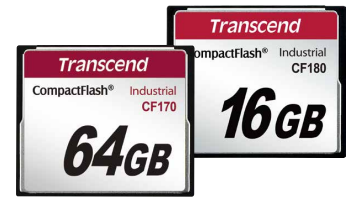


Standard	SD 5.1/3.0		SD 3.01	SD 2.0/3.01
Connector	8 pin			
Flash	MLC			MLC (SLC Mode)
Model	microSD/SDHC410M	microSDHC Class 10	microSDHC/SDXC10I	microSDHC220I
Capacity	2GB~32GB	4GB~32GB	8GB~64GB	2GB~16GB
Sequential R/W*	95/50 MB/s		24/22 MB/s	80/45 MB/s
TBW*	86 TBW	60 TBW	120 TBW	300 TBW
Operating Temperature	Standard Temp.: -25°C ~ 85°C		Wide Temp.: -40°C ~ 85°C	
Dimensions	11 x 15 x 1 mm			
Operating Voltage	2.7V ~ 3.6V			
Max. Power Consumption	2.88W	0.72W		2.88W

	Capacity	Ordering Information			
Standard Temp. (-25°C~85°C)	2GB	TS2GUSD410M	-	-	-
	4GB	TS4GUSD410M	TS4GUSDC10M	-	-
	8GB	TS8GUSD410M	TS8GUSDC10M	-	-
	16GB	TS16GUSD410M	TS16GUSDC10M	-	-
	32GB	TS32GUSD410M	TS32GUSDC10M	-	-
Wide Temp. (-40°C ~ 85°C)	2GB	-	-	-	TS2GUSD220I
	4GB	-	-	-	TS4GUSD220I
	8GB	-	-	TS8GUSDC10I	TS8GUSD220I
	16GB	-	-	TS16GUSDC10I	TS16GUSD220I
	32GB	-	-	TS32GUSDC10I	-
	64GB	-	-	TS64GUSDC10I	-

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

# CompactFlash Cards



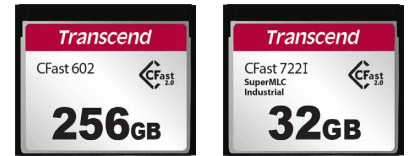
Standard	True IDE	
Connector	50 pin	
Flash	MLC	MLC (SLC Mode)
Model	CF170	CF180
Capacity	8GB~64GB	4GB~16GB
Sequential R/W*	87/67 MB/s	85/75 MB/s
TBW*	85 TBW	210 TBW
MTBF*	1,000,000 hours	3,000,000 hours
Operating Temperature	Standard Temp.: -25°C~ 85°C	
Dimensions	42.8 x 36.4 x 3.3 mm	
Operating Voltage	3.3V±5% / 5V±10%	
Max. Power Consumption	0.8W	0.6W

	Capacity	Ordering Information	
Standard Temp. (-25°C~85°C)	4GB	-	TS4GCF180
	8GB	TS8GCF170	TS8GCF180
	16GB	TS16GCF170	TS16GCF180
	32GB	TS32GCF170	-
	64GB	TS64GCF170	-

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



# CFAST Cards



Standard	SATA III 6Gb/s	
Connector	24 pin	
Flash	MLC	MLC (SLC Mode)
Model	CFX602	CFX7221
Capacity	8GB~256GB	32GB
Sequential R/W*	500/350 MB/s	510/355 MB/s
TBW*	360 TBW	450 TBW
MTBF*	1,000,000 hours	
Operating Temperature	Standard Temp.: -5°C~ 70°C	Wide Temp.: -40°C~ 85°C
Dimensions	42.8 x 36.4 x 3.3 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.15W	1.2W

	Capacity	Ordering Information	
Standard Temp. (-5°C ~ 70°C)	8GB	TS8GCFX602	-
	16GB	TS16GCFX602	-
	32GB	TS32GCFX602	-
	64GB	TS64GCFX602	-
	128GB	TS128GCFX602	-
	256GB	TS256GCFX602	-
Wide Temp. (-40°C ~ 85°C)	32GB	-	TS32GCFX7221

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

# Flash Solutions

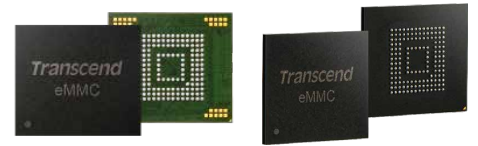
Transcend's Flash solutions include e.MMC, Flash DOMs and USB Flash Drives. The Flash Modules offer an easy solution for integrating SSD storage technology into legacy PC- and laptop-based systems. The USB Flash Drives feature a compact and portable design, ideal for applications where reliability and data retention are crucial.



## Product Line

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

# e.MMC



<b>Form Factor</b>	<b>e.MMC 5.1 (BGA-153)</b>	
<b>Flash</b>	<b>96-layer 3D TLC</b>	<b>MLC</b>
<b>Model</b>	EMC410T	EMC310M
<b>Capacity</b>	32GB	8GB / 16GB
<b>Sequential R/W*</b>	290/155 MB/s	280/100 MB/s
<b>Operating Temperature</b>	Standard Temp.: -25°C~85°C	
<b>Dimensions</b>	11.5 x 13 x 1 mm	
<b>Bus Width Supported</b>	x1, x4, x8	
<b>Bus Speed Mode</b>	HS400	
<b>Clock Frequency Supported</b>	0 MHz~200 MHz	

	Capacity	Ordering Information	
Standard Temp. (-25°C~85°C)	8GB	-	TS8GEMC310M
	16GB	-	TS16GEMC310M
	32GB	TS32GEMC410T	-

R/W: Read/Write

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

# Flash DOMs



Standard	USB 2.0
Connector	10 pin USB port
Flash	MLC
Model	UFM510H
Capacity	2GB~32GB
Sequential R/W*	33/18 MB/s
Operating Temperature	Standard Temp.: 0°C~70°C
Dimensions	37.8 x 26.65 x 5.81 mm
Operating Voltage	5V±10%
Max. Power Consumption	0.69W

	Capacity	Ordering Information
Standard Temp. (0°C ~ 70°C)	2GB	TS2GUFM510H
	8GB	TS8GUFM510H
	16GB	TS16GUFM510H
	32GB	TS32GUFM510H

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

# USB Flash Drives



<b>Standard</b>	<b>USB 3.1 Gen 1</b>		
<b>Connector</b>	<b>USB Type-A</b>		
<b>Flash</b>	<b>3D TLC</b>	<b>MLC</b>	<b>MLC (SLC Mode)</b>
<b>Model</b>	JF280T	JF270M	JF740K
<b>Capacity</b>	16GB~128GB	8GB~32GB	8GB
<b>Sequential R/W*</b>	140/40 MB/s	160/40 MB/s	119/86 MB/s
<b>Operating Temperature</b>	Standard Temp.: 0°C~70°C		
<b>Dimensions</b>	61.5 x 18.6 x 8.7 mm		22.4 x 12.2 x 6 mm
<b>Operating Voltage</b>	5V±10%		
<b>Max. Power Consumption</b>	0.7W	1W	0.83W

	Capacity	Ordering Information		
Standard Temp. (0°C ~ 70°C)	8GB	-	TS8GJF270M	TS8GJF740K
	16GB	TS16GJF280T	TS16GJF270M	-
	32GB	TS32GJF280T	TS32GJF270M	-
	64GB	TS64GJF280T	-	-
	128GB	TS128GJF280T	-	-

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





With clients' needs in mind, Transcend provides customized services and a global support team to assist enterprises to fulfill their business potential.

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