Transcend®

Product Overview
Embedded Solutions

Solid State Drive

Advanced Technologies | Software Solutions
DRAM Modules | SSD Solutions | Memory Cards | Flash Solutions

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About Us

Transcend Information. Inc. was founded in 1988 by Mr. Peter Chung-won Shu, with headquarters in Taipei, Taiwan. Today, Transcend is a leading global brand of memory products and storage solutions with twelve branch offices worldwide. Transcend continues to tap its deep reservoir of design resources to create advanced products for industrial computing applications across the globe. All of Transcend's products are designed for extreme reliability and endurance. At Transcend, we seek to provide the highest quality products and world-class professional service. As a customer-focused company, Transcend responds quickly to the market's changing needs by maintaining strong ties and close partnerships with first-tier suppliers. 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. By continuing to enhance its R&D expertise and implementing stringent in-house quality control, Transcend has established a track record of reliably supplying customers with high-quality products and services.

With the Total Quality Control concept implemented throughout the company, 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.

Transcend sets foot in 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. The strength of our logistics network lies in our ability to link employees and customers to our latest products through state-of-the-art technology, and also in our commitment to quality.

Remaining focused on the future, Transcend predicts, plans, and delivers quality products and services the market wants, keeping the firm at the forefront of the industry. With an ever-increasing demand for industrial applications, we see the future providing limitless opportunities. Good memories start here!

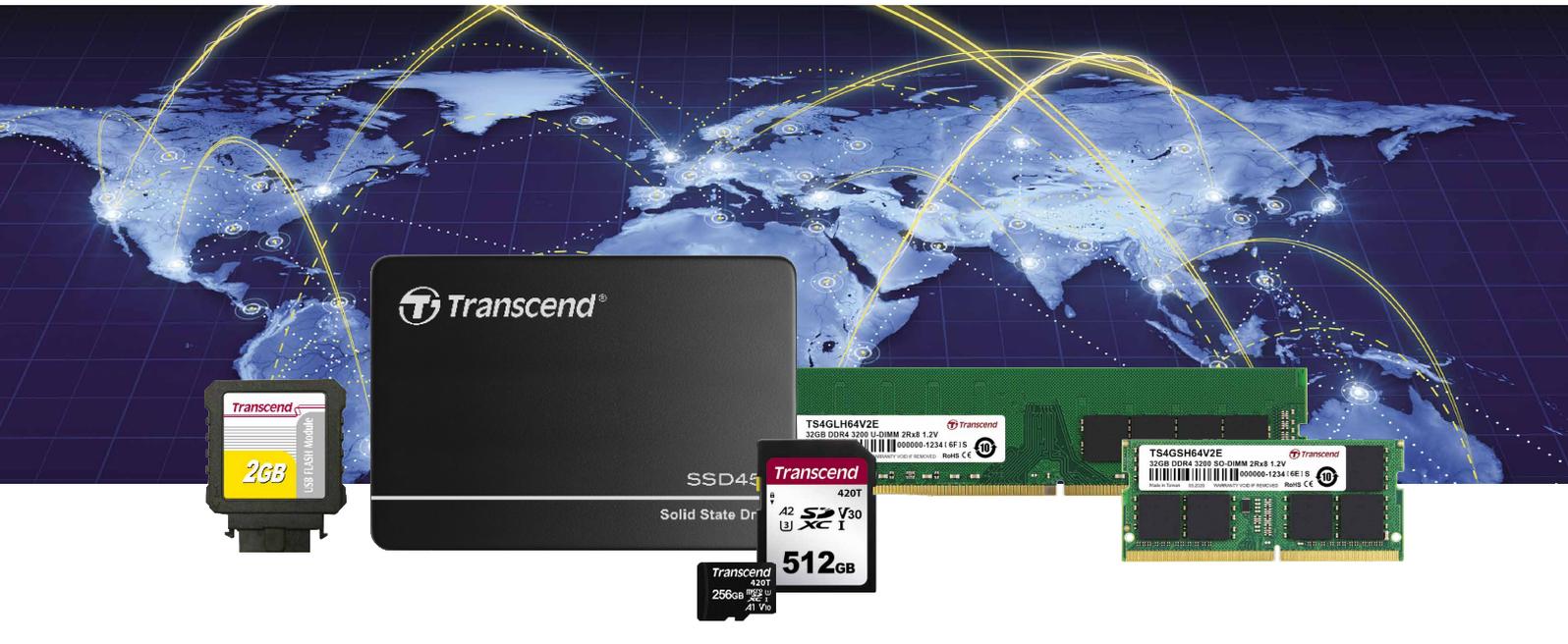ISO 9001:2015

OHSAS 18001:2007

CNS 15506:2011

ISO 14001:2015

IATF16949:2016

IEQC CQ80000:2017

Key Strengths

Comprehensive Product Lines

Transcend provides a complete product line of storage solutions for industrial computing applications. We offer memory modules ranging from DDR1 to DDR4, NAND flash from SLC, MLC, to 3D TLC and corresponding products for all solid-state drive interfaces. We also provide customized solutions to satisfy customers' specific demands with advanced technologies such as Wide Temperature, Anti-Sulfur, Intelligent Power Shield, Corner Bond, Underfill, Conformal Coating and AES Encryption.

Professional Worldwide Support

With twelve branch offices established worldwide, Transcend collaborates with OEM suppliers in providing technical analysis reports, on-site technical support and firmware adjustments to comply with the requirements of customers' terminal devices. Localized Sales and FAE staff are well-trained to offer in-time professional technical support to our customers worldwide.

Steady Supply & Longevity Support

Transcend utilizes the highest quality NAND, DRAM, and controller ICs manufactured by world leading suppliers, with whom Transcend has forged long-term alliances and strategic collaborations. We enforce rigorous flash wafer and memory card packaging and testing procedures with our partnered assembly houses, ensuring the quality of our products. By upholding financial stability, Transcend is able to strategically stock up on supplies to address our customers' long-term needs.

Efficient Management of Product Life Cycle

Transcend developed its own in-house Enterprise Resource Planning (ERP) system, the Transcend Information System (TIS), to provide worldwide access to real-time information, including product availability, component pricing, sales data and logistics. This allows Transcend to respond quickly to customers' needs and provide them with the latest information, facilitating seamless internal coordination and timely, accurate external communication.

Transcend incorporates fixed BOM (Bill of Materials) management, which allows customers to identify product solutions. By ensuring component changes are kept to a minimum, Transcend makes sure customers receive fixed solutions with consistent compatibility. Furthermore, we offer road maps, EOL (End of Life) letters and PCNs (Product Change Notice) for our customers to streamline the transition to alternative solutions when necessary, thus fostering a more effective and efficient product life cycle management.

Total Quality Control

Transcend carries out comprehensive quality control process by dividing the procedure into three segments: Incoming Quality Control (IQC), Final Quality Control (FQC), and Outgoing Quality Control (OQC). Through Vision Measurement Machine (VMM), X-Ray fluorescence inspection, and final verification, high-quality products are delivered that garner Transcend valid certifications. Transcend operates its own factory in Taipei, which hosts more than 16 high-speed Surface Mount Technology (SMT) production lines. All industrial products we manufacture are subjected to rigorous reliability, compatibility, thermal stress, intense read/write cycles, and dynamic burn-in quality tests to ensure the highest reliability and stability of our products.

Advanced Technologies

-20ºC | **75ºC**
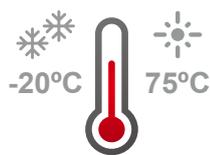
Extended Temperature

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℃ to 75℃. Devices utilizing this technology provide sustained 4K random R/W speeds and greater reliability. 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.

-40ºC | **85ºC**

Wide Temperature

Industrial applications often expose flash memory products and DRAM modules to extreme working temperatures. To guarantee reliable operation under even the harshest conditions, 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℃, all the way to 85℃.
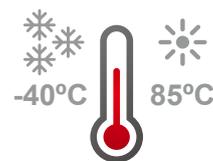
Corner Bond & Underfill

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 chip and PCB interface with a mechanical bond, less stress is concentrated on the solder joints. It is widely used in handheld devices, automotive electronics, and military applications where stringent thermal cycling performance and shock resistance are required.

Conformal Coating

Conformal Coating increases protection for embedded-use flash modules and DRAM products against various harsh environmental conditions such as moisture, dust, corrosion, extreme temperature, and chemical contaminants. Transcend's conformal coated solutions are widely employed in factories, automotive applications, military environments and traffic control systems. Acrylic coatings are the most preferred choice for embedded applications due to their excellent moisture and electrical resistance.
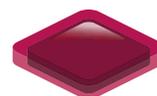
SLC mode

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. Through this technology, flash endurance and the agility can be guaranteed for corporates to deliver mission-critical embedded or industrial applications. Transcend's flash memories are designed to support the SLC mode, offering manufacturers higher flexibility without losing reliability.

Intelligent Power Shield & Power Shield

As an advanced technology for DRAM cached SSDs, Intelligent Power Shield (IPS) operates at 5V to ensure the integrity of data transfer in events of sudden power outages. Power Shield (PS) is a basic technology supported by all Transcend's embedded SSDs to prevent internal NAND flash data loss in the event of a sudden power outage. The internal power shield circuit would trigger the PS function during sudden power outage, so the controller will stop accepting new write commands.

96-layer 3D NAND Flash

Stacking 96 layers of NAND flash chips vertically in a 3-bits-per cell architecture, Transcend's 96-layer 3D NAND solutions break through density limitations to improve storage efficiency. Respective products can endure an average of 3000 P/E cycles while boosting speed and reliability. These SSDs integrate the advantages of high performance and exceptional endurance under intensive read / write cycles, making them ideal for demanding industrial-grade applications.

TCG Opal Specifications

Designed for clients working in the financial and gaming industries, surveillance, as well as cloud data centers, TCG Opal is ideal for implementation into industries where data security is of pivotal importance. The Opal Security Subsystem Class (SSC) is created by TCG as a security management protocol for storage devices. 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

As a symmetric block cipher that can encrypt and decrypt data, 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. From securing personal data to protecting sensitive corporate information, AES Encryption offers superior data protection and performance.

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. Transcend offers Over-Provisioning as a customization service, tailoring the percentage of allocation to the needs of its customers.

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, and are employed in extreme temperature, humidity or pollution where sulfur is presented in high concentration. 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.

Dynamic thermal throttling

Heat is an inevitable byproduct of work which is detrimental to performance. A thermal sensor is implemented in the controller to monitor the temperature of SSDs. When the temperature exceeds the safe level, thermal throttling mechanism will be automatically activated to lower the operating speeds in order to cool down the temperature. This technology ensures the SSD operates in a safe temperature range, makes sure the users' data is well intact, and prolongs the product lifespan.

Software Solutions

Scope Pro

Supporting all Transcend SSDs, Transcend's Scope Pro is a convenient software package that helps users monitor and manage SSD status via an intuitive interface. It offers various useful features, including drive information and S.M.A.R.T. status monitoring, diagnostic scan, secure erase, health indication, system clone, and remote monitoring.

Status
Monitors the SSD health status with intuitive, adjustable indicator lights and status bar. The software will notify users when an SSD needs attention.

Tool
Monitors the SSD read/write performance and manage the SSD with convenient scan and erase tools.

System clone
System clone is a disk imaging tool designed for cloning the entire original drive, including the operating system (OS), programs, and data, to a new Transcend SSD.
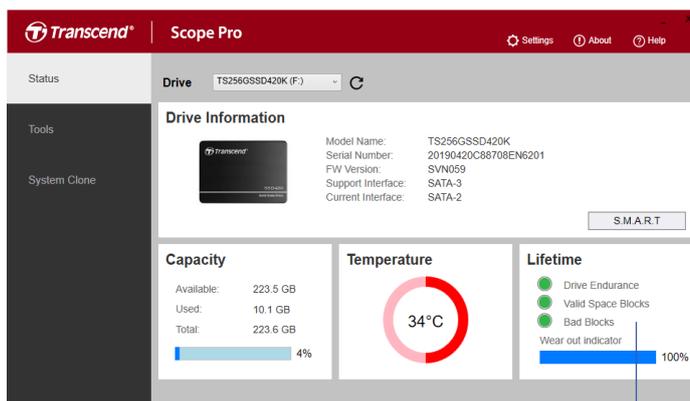
SSD Health Status
Includes Drive Endurance, Valid Spare Blocks, Bad Blocks, and Wear out indicator.

🟢 Healthy / Good

🟡 Early Warning

🔴 At Risk / Bad
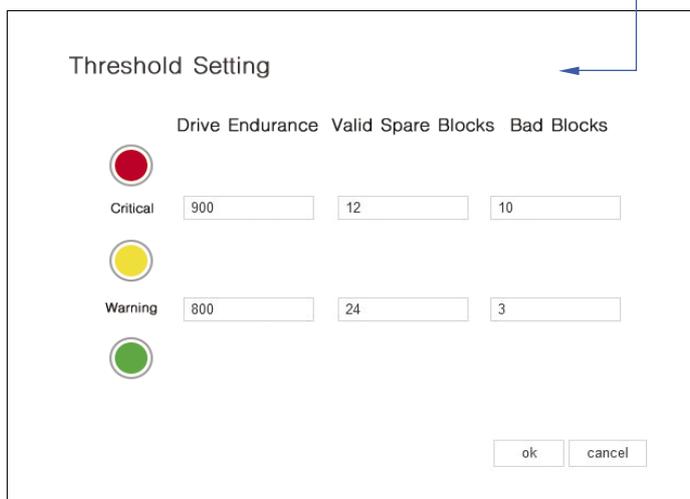
Transcend provides different default settings for different embedded SSDs. However, the threshold setting can be manually adjusted by specific requirements.

Suitable for: all Transcend's embedded SSDs, CFast and CompactFlash cards.
The Scope Pro provides tailored application with the Scope Software Development Kit (SDK) for Windows/Linux.

Software Solutions

Control Center

Geared to work seamlessly with many apps and systems, the Control Center addresses all of the challenges of the IoT era. The Control Center software processes information from edge devices in real-time and can be managed through the user's cloud server of choice. Users can monitor the performance of Transcend devices and tools via a web browser anywhere, anytime. In the meantime, the Control Center allows users to manage devices within a local network. This decreases the possible latency issue, and alleviates network load, providing agility and mobility to users. With a combination of both centralized and decentralized management, the Control Center is a flexible solution for corporate users.

Benefits

Supports Transcend Embedded Solutions
The Control Center can be applied to various Transcend embedded solutions. Here, relevant information and operating status of SSDs, DRAM modules, and SD cards are made instantly and easily available.

Flexible Management in the Cloud & on Premise
The Control Center not only allows companies to manage via the cloud (AWS, Microsoft Azure, or Google Cloud, etc.), but simultaneously within their local network. Data collected will only be saved within the company network instead of the cloud, leveling up the security and privacy.

Remote Upgrades & Monitoring
Users can remotely check on devices' health status, monitoring device life, temperature, and unexpected power outages. When anomalies are detected, remote system maintenance and firmware upgrade can be carried out in real time.

Early Warning System(EWS) & Instant Notices
The Control Center will notify users immediately for any possible issues via email, SMS, or Line to retain the upmost performance of the devices, offering the optimized efficiency and proactive response.

Comprehensive Security Mechanism
The Control Center is secured by an SSL certificate. Confidential data transferring between the center and edge devices, or between one edge device and another, via a secure channel can be protected and not be read or modified by others.

Sleek Big-data Analysis for Efficient Management
The Control Center offers data analysis in graphic form and boasts an intuitive interface and dashboard layout for ease of management. Data consolidated is great resource for big-data analysis that benefits the business growth.

The Control Center provides tailored application with the Control Center SDK for Windows/Linux.

Software Solutions

🔒 TCG Opal Toolbox

Transcend offers the TCG Opal SDK, a developer-friendly software development kit that allows enterprises to manage their TCG Opal 2.0 and 256-bit AES compliant SSDs at the software level, bringing ease of management into line with secure hardware encryption that is just about impossible to crack. Supporting Windows and Linux OS, the TCG Opal SDK is ideal for implementation into business and industries where data security is of pivotal importance. Clients working in the financial and gaming industries, cloud data centers, surveillance, and government agencies can easily build a more secure storage solution upon their original data security architecture.

Transcend in addition offers the TCG Opal Toolbox. This versatile management software features a simple and intuitive interface that enables painless management of Self-Encrypting Devices (SEDs) without compromising security. The software includes key utilities such as obtaining SSD encryption status, Set Password, Set Locking Range, Pre-Boot Authentication, and Revert functions.
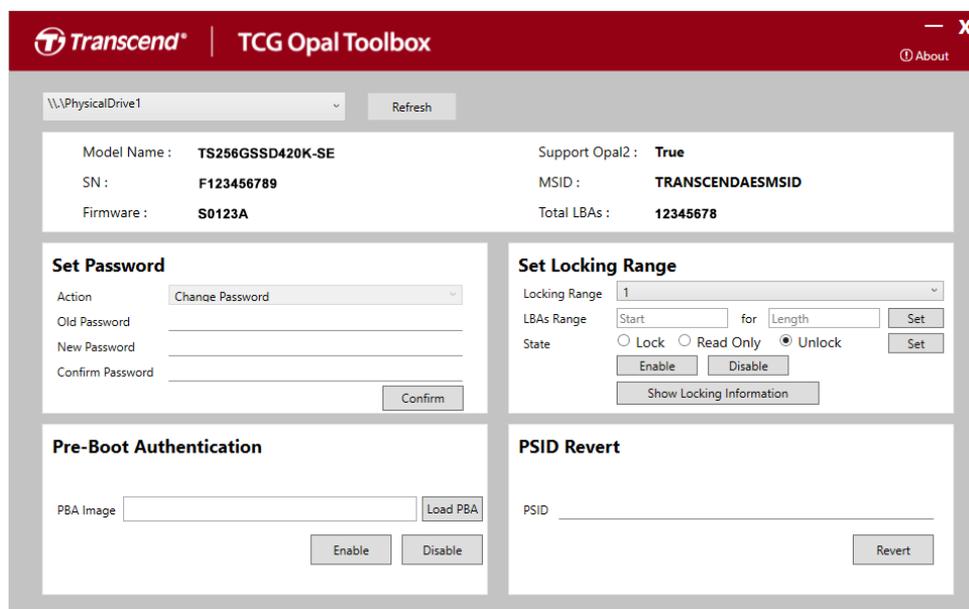
Benefits

Set Password
Users may set a password to control access to the drive. Where drive locations are password-protected, only users with the correct key will be authorized entry.

Set Locking Range
The device manager may create a logical block address (LBA) range and assign different permissions for each particular range. Only users with the correct authentication key may perform permitted actions.

Pre-Boot Authentication
When the user starts the device, the shadow MBR will conduct a pre-boot identification. Where the user is cleared, the normal boot process will begin and connections to devices be made.

Revert
Users can restore the storage device to its default settings by entering a unique set of PSID (Physical Secure ID). The function allows for secure and permanent erasure of all sensitive or confidential data.

The TCG Opal Toolbox provides tailored application with the TCG Opal Toolbox SDK for Windows/Linux.

Software Solutions

Rescue

✚ One Touch Recovery

One Touch Recovery is a software tool designed exclusively for Transcend's embedded solutions that enable enterprises to restore lost data quickly. Companies wishing to minimize risks associated with outages or attacks would benefit from this technology a great deal. The rescue process is done in-system, ensuring both convenience and security.

Transcend's One Touch Recovery helps companies plan ahead. To safeguard digital assets, One Touch Recovery backs up crucial data to hidden partitions. Where a disk has been compromised, data can be recalled from these partitions, restoring files to their original state.
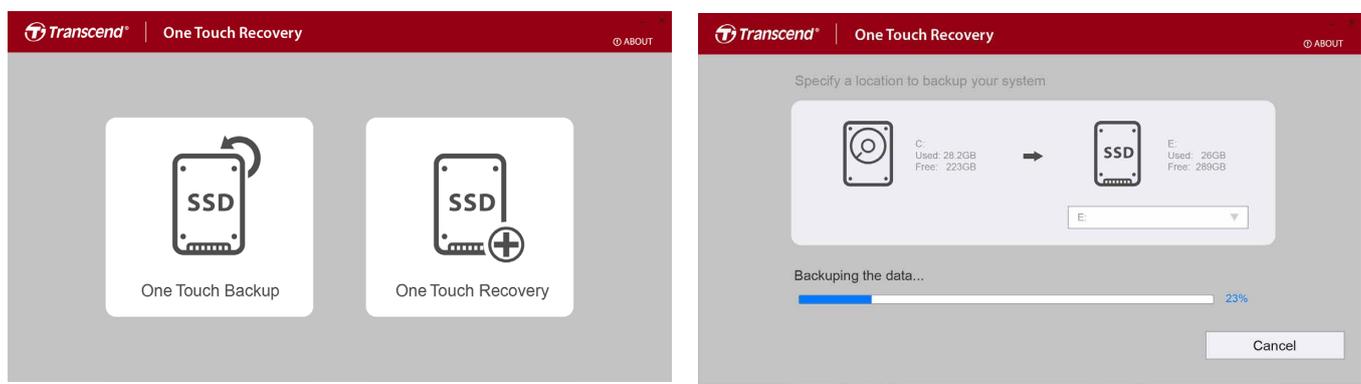
Key Features

Enhanced Efficiency
By backing up data beforehand, One Touch Recovery eliminates the hours spent restoring compromised systems. Companies are then free to focus on their core competencies.

Flexible Customization
One Touch Recovery backs up and restores data from user-defined disks. The maximum number of disks is tailored to fit each user's situation.

All Transcend SSDs Supported
One Touch Recovery supports all Transcend SSDs, and works with Windows, Linux, and other operating systems.

Remote Backup & Recovery
One Touch Recovery can be operated remotely, allowing companies to respond to emergency situations quickly, minimizing downtime and related costs.

Wide Applicability
This software is particularly useful for firms offering data-rich services, such as ATMs, kiosks, or vending machines, as it allows for the efficient and secure remote control of data.

The One Touch Recovery provides tailored application with the One Touch Recovery SDK for Windows/Linux.

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 (Mbps)	Operating Temperature	Capacity
DDR4	Long-DIMM/SO-DIMM	3200	0°C~ 85°C / -40°C~ 85°C	8GB~32GB
		2666		2GB~32GB
	ECC Long-DIMM/ ECC SO-DIMM	3200	0°C~ 85°C / -40°C~ 85°C	8GB~32GB
		2666		4GB~32GB
	R-DIMM	3200	0°C~ 85°C	8GB~32GB
		2666		4GB~32GB
DDR3	Long-DIMM/SO-DIMM	1600	0°C~ 85°C / -40°C~ 85°C	1GB~8GB
	ECC Long-DIMM/ ECC SO-DIMM		0°C~ 85°C / -40°C~ 85°C	2GB~8GB
	R-DIMM		0°C~ 85°C	2GB~16GB

Product Highlights

Industrial-Grade DDR4-3200 Memory Modules
Optimize Data Transmission in the 5G Era

Transcend's new DDR4-3200 memory modules feature high transmission bandwidth at 3200 Mbps, low latency, and low power consumption, running at 1.2V. The series comes with different form factor that meets the requirements of vertical markets.

DDR4-3200 memory modules are manufactured with major-grade DRAM chips, which have undergone the original manufacture's in-house testing procedures to manifest the highest standard of quality. Various capacity are provided from 8GB to 32GB, enabling overclocking for high-end servers, computers, workstations, unmanned devices, AI-powered equipment, and smart systems from the core to the edge.

Fully complied with JEDEC specification, DDR4-3200 memory modules are optimized for Intel®, AMD, and ARM processors, ready to power up embedded telecommunication, in-vehicle, gaming, and smart healthcare applications in the approaching AIoT decade.

Wide Product Range
• Unbuffered Long-DIMM
• Unbuffered SO-DIMM
• ECC Long-DIMM
• ECC SO-DIMM
• Registered Long-DIMM
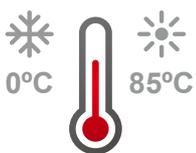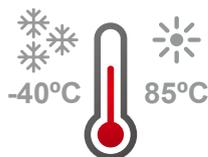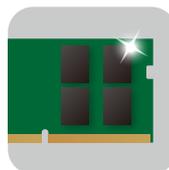
0°C 85°C	-40°C 85°C		JEDEC	32GB
Standard Temperature 0°C~ 85°C	**Wide Temperature** -40°C ~ 85°C	**Major-grade DRAM chips**	**JEDEC® compliant**	**High Capacity**

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
- Low power consumption at 1.2V

Module Type	DDR4 Long-DIMM	DDR4 SO-DIMM
Interface	JEDEC® standard	
Speed	3200/2666 Mbps	
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	Optional	
Operating Temperature	Standard Temperature: 0℃~ 85℃ Wide Temperature: -40℃~ 85℃	

Ordering Information

DDR4-3200

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0℃~ 85℃)	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B	TS1GSH64V2B
				TS1GLH64V2B3	TS1GSH64V2B3
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2B	TS2GSH64V2B
				TS2GLH64V2B3	TS2GSH64V2B3
		(2Gx8)x8	1Rx8	TS2GLH64V2E	TS2GSH64V2E
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E	TS4GSH64V2E
		(2Gx8)x16	2Rx8	TS4GLH64V2E3	TS4GSH64V2E3
Wide Temp. (-40℃~ 85℃)	8GB	(1Gx8)x8	1Rx8	TS1GLH64V2B-I	TS1GSH64V2B-I
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V2B-I	TS2GSH64V2B-I
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V2E-I	TS4GSH64V2E-I

DDR4-2666

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0℃~ 85℃)	2GB	(256Mx16)x4	1Rx16	TS256MLH64V6X	TS256MSH64V6X
	4GB	(512Mx16)x4	1Rx16	TS512MLH64V6D	TS512MSH64V6D
	4GB	(512Mx8)x8	1Rx8	TS512MLH64V6H	TS512MSH64V6H
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6B	TS1GSH64V6B
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6B	TS2GSH64V6B
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V6E	TS4GSH64V6E
Wide Temp. (-40℃~ 85℃)	4GB	(512Mx8)x8	1Rx8	TS512MLH64V6H-I	TS512MSH64V6H-I
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6B-I	TS1GSH64V6B-I
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6B-I	TS2GSH64V6B-I
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V6E-I	TS4GSH64V6E-I
Very Low Profile (0℃~ 85℃)	2GB	(256Mx16)x4	1Rx16	TS256MLH64V6XL	
	4GB	(512Mx8)x8	1Rx8	TS512MLH64V6HL	
	8GB	(1Gx8)x8	1Rx8	TS1GLH64V6BL	-
	16GB	(1Gx8)x16	2Rx8	TS2GLH64V6BL	
	32GB	(2Gx8)x16	2Rx8	TS4GLH64V6E2L	

* DDR4 2400Mbps and 2133Mbps 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
- Low power consumption at 1.2V
- Extra-thick 30µ" gold plated contact pins
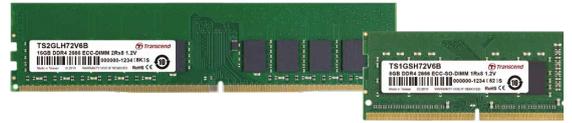
Module Type	DDR4 ECC Long-DIMM	DDR4 ECC SO-DIMM
Interface	JEDEC® standard	
Speed	3200/2666 Mbps	
Capacity	4GB~32GB	
Voltage	1.2V	
Pin Count	288 pin	260 pin
PCB Height	Standard: 1.23 inches Very Low Profile: 0.74 inches	1.18 inches
PCB Gold Finger Thickness	30µ"	
Anti-Sulfuration	Default	
Operating Temperature	Standard Temperature: 0℃~ 85℃ Wide Temperature: -40℃~ 85℃	

Ordering Information

DDR4-3200

	Capacity	Component Composition	Rank x Org.	ECC Long-DIMM	ECC SO-DIMM
Standard Temp. (0℃~ 85℃)	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B	TS1GSH72V2B
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2B	TS2GSH72V2B
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E	TS4GSH72V2E
Wide Temp. (-40℃~ 85℃)	8GB	(1Gx8)x9	1Rx8	TS1GLH72V2B-I	TS1GSH72V2B-I
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V2B-I	TS2GSH72V2B-I
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V2E-I	TS4GSH72V2E-I

DDR4-2666

	Capacity	Component Composition	Rank x Org.	ECC Long-DIMM	ECC SO-DIMM
Standard Temp. (0℃~ 85℃)	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℃~ 85℃)	4GB	(512Mx8)x9	1Rx8	TS512MLH72V6H-I	TS512MSH72V6H-I
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6B-I	TS1GSH72V6B-I
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6B-I	TS2GSH72V6B-I
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V6E-I	TS4GSH72V6E-I
Very Low Profile (0℃~ 85℃)	4GB	(512Mx8)x9	1Rx8	TS512MLH72V6HL	-
	8GB	(1Gx8)x9	1Rx8	TS1GLH72V6BL	
	16GB	(1Gx8)x18	2Rx8	TS2GLH72V6BL	
	32GB	(2Gx8)x18	2Rx8	TS4GLH72V6EL	

* DDR4 2400Mbps and 2133Mbps 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
- Low power consumption 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
Interface	JEDEC® standard
Speed	3200/2666 Mbps
Capacity	4GB~32GB
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℃~ 85℃

Ordering Information

DDR4-3200

	Capacity	Component Composition	Rank x Org.	Registered DIMM
Standard Temp. (0℃~ 85℃)	8GB	(1Gx8)x9	1Rx8	TS1GHR72V2B
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V2B
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2E
Very Low Profile (0℃~ 85℃)	16GB	(1Gx8)x9	2Rx8	TS2GHR72V2BL
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V2EL

DDR4-2666

	Capacity	Component Composition	Rank x Org.	Registered DIMM
Standard Temp. (0℃~ 85℃)	4GB	(512Mx8)x9	1Rx8	TS512MHR72V6H
	8GB	(512Mx8)x18	2Rx8	TS1GHR72V6H
	8GB	(1Gx8)x9	1Rx8	TS1GHR72V6B
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V6B
	32GB	(2Gx4)x36	2Rx4	TS4GHR72V6C
		(2Gx8)x18	2Rx8	TS4GHR72V6E
Very Low Profile (0℃~ 85℃)	8GB	(512Mx8)x18	2Rx8	TS1GHR72V6HL
	16GB	(1Gx8)x18	2Rx8	TS2GHR72V6BL
	32GB	(2Gx8)x18	2Rx8	TS4GHR72V6EL

* DDR4 2400Mbps and 2133Mbps 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
Interface	JEDEC® standard	
Speed	1600 Mbps	
Capacity	1GB~8GB	
Voltage	Standard: 1.5V Low Voltage: 1.35V	
Pin Count	240 pin	204 pin
PCB Height	1.18 inches	
PCB Gold Finger Thickness	30µ" (Wide Temp.)	
Anti-Sulfuration	Optional	
Operating Temperature	Standard Temperature: 0°C~ 85°C Wide Temperature: -40°C~ 85°C	

Ordering Information
DDR3-1600

	Capacity	Component Composition	Rank x Org.	Long-DIMM	SO-DIMM
Standard Temp. (0°C~ 85°C)	1GB	(128Mx8)x8	1Rx8	TS128MLK64V6U	TS128MSK64V6U
	2GB	(128Mx8)x16	2Rx8	TS256MLK64V6U	TS256MSK64V6U
	2GB	(256Mx8)x8	1Rx8	TS256MLK64V6N	TS256MSK64V6N
	2GB	(256Mx16)x4	1Rx16	-	TS256MSK64V6X
	4GB	(256Mx8)x16	2Rx8	TS512MLK64V6N	TS512MSK64V6N
	4GB	(512Mx8)x8	1Rx8	TS512MLK64V6H	TS512MSK64V6H
	8GB	(512Mx8)x16	2Rx8	TS1GLK64V6H	TS1GSK64V6H
Wide Temp. (-40°C~ 85°C)	1GB	(128Mx8)x8	1Rx8	TS128MLK64V6U-I	TS128MSK64V6U-I
	2GB	(128Mx8)x16	2Rx8	TS256MLK64V6U-I	TS256MSK64V6U-I
	2GB	(256Mx8)x8	1Rx8	TS256MLK64V6N-I	TS256MSK64V6N-I
	4GB	(256Mx8)x16	2Rx8	TS512MLK64V6N-I	TS512MSK64V6N-I
	4GB	(512Mx8)x8	1Rx8	TS512MLK64V6H-I	TS512MSK64V6H-I
	8GB	(512Mx8)x16	2Rx8	TS1GLK64V6H-I	TS1GSK64V6H-I
Low Voltage (0°C~ 85°C)	1GB	(128Mx8)x8	1Rx8	TS128MLK64W6U	TS128MSK64W6U
	2GB	(128Mx8)x16	2Rx8	TS256MLK64W6U	TS256MSK64W6U
	2GB	(256Mx8)x8	1Rx8	TS256MLK64W6N	TS256MSK64W6N
	2GB	(256Mx16)x4	1Rx16	-	TS256MSK64W6X
	4GB	(256Mx8)x16	2Rx8	TS512MLK64W6N	TS512MSK64W6N
	4GB	(512Mx8)x8	1Rx8	TS512MLK64W6H	TS512MSK64W6H
	8GB	(512Mx8)x16	2Rx8	TS1GLK64W6H	TS1GSK64W6H
Low Voltage + Wide Temp. (-40°C~ 85°C)	1GB	(128Mx8)x8	1Rx8	TS128MLK64W6U-I	TS128MSK64W6U-I
	2GB	(128Mx8)x16	2Rx8	TS256MLK64W6U-I	TS256MSK64W6U-I
	2GB	(256Mx8)x8	1Rx8	TS256MLK64W6N-I	TS256MSK64W6N-I
	4GB	(256Mx8)x16	2Rx8	TS512MLK64W6N-I	TS512MSK64W6N-I
	4GB	(512Mx8)x8	1Rx8	TS512MLK64W6H-I	TS512MSK64W6H-I
	8GB	(512Mx8)x16	2Rx8	TS1GLK64W6H-I	TS1GSK64W6H-I

* DDR3 1866Mbps and 1333Mbps are also available.
  DDR3 Long-DIMM VLP modules (0.74 inches) are also available.

DDR3 ECC DIMMs

- ECC Long-DIMMs and SO-DIMMs for high-end embedded desktops and laptops
- 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
Interface	JEDEC® standard	
Speed	1600 Mbps	
Capacity	2GB~8GB	
Voltage	Standard: 1.5V Low Voltage: 1.35V	
Pin Count	240 pin	204 pin
PCB Height	1.18 inches	
PCB Gold Finger Thickness	30μ"	
Anti-Sulfuration	Default	
Operating Temperature	Standard Temperature: 0℃~ 85℃ Wide Temperature: -40℃~ 85℃	

Ordering Information
DDR3-1600

	Capacity	Component Composition	Rank x Org.	ECC Long-DIMM	ECC SO-DIMM
Standard Temp. (0℃~ 85℃)	2GB	(128Mx8)x18	2Rx8	TS256MLK72V6U	-
	2GB	(256Mx8)x9	1Rx8	TS256MLK72V6N	TS256MSK72V6N
	4GB	(256Mx8)x18	2Rx8	TS512MLK72V6N	TS512MSK72V6N
	4GB	(512Mx8)x9	1Rx8	TS512MLK72V6H	TS512MSK72V6H
	8GB	(512Mx8)x18	2Rx8	TS1GLK72V6H	TS1GSK72V6H
Wide Temp. (-40℃~ 85℃)	2GB	(128Mx8)x18	2Rx8	TS256MLK72V6U-I	-
	2GB	(256Mx8)x9	1Rx8	TS256MLK72V6N-I	TS256MSK72V6N-I
	4GB	(256Mx8)x18	2Rx8	TS512MLK72V6N-I	TS512MSK72V6N-I
	4GB	(512Mx8)x9	1Rx8	TS512MLK72V6H-I	TS512MSK72V6H-I
	8GB	(512Mx8)x18	2Rx8	TS1GLK72V6H-I	TS1GSK72V6H-I
Low Voltage (0℃~ 85℃)	2GB	(128Mx8)x18	2Rx8	TS256MLK72W6U	-
	2GB	(256Mx8)x9	1Rx8	TS256MLK72W6N	TS256MSK72W6N
	4GB	(256Mx8)x18	2Rx8	TS512MLK72W6N	-
	4GB	(512Mx8)x9	1Rx8	TS512MLK72W6H	TS512MSK72W6H
	8GB	(512Mx8)x18	2Rx8	TS1GLK72W6H	TS1GSK72W6H
Low Voltage + Wide Temp. (-40℃~ 85℃)	2GB	(128Mx8)x18	2Rx8	TS256MLK72W6U-I	-
	2GB	(256Mx8)x9	1Rx8	TS256MLK72W6N-I	TS256MSK72W6N-I
	4GB	(256Mx8)x18	2Rx8	TS512MLK72W6N-I	TS512MSK72W6N-I
	4GB	(512Mx8)x9	1Rx8	TS512MLK72W6H-I	TS512MSK72W6H-I
	8GB	(512Mx8)x18	2Rx8	TS1GLK72W6H-I	TS1GSK72W6H-I

* DDR3 1866Mbps and 1333Mbps are also available.
  DDR3 Long-DIMM VLP modules (0.74 inches) are also available.

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

Module Type	Registered DIMM
Interface	JEDEC® standard
Speed	1600 Mbps
Capacity	2GB~16GB
Voltage	Standard: 1.5V Low Voltage: 1.35V
Pin Count	240 pin
PCB Height	Standard: 1.18 inches Very Low Profile: 0.74 inches
PCB Gold Finger Thickness	30μ"
Anti-Sulfuration	Default
Operating Temperature	Standard Temperature: 0°C~ 85°C Wide Temperature: -40°C~ 85°C

Ordering Information

DDR3-1600

	Capacity	Component Composition	Rank x Org.	Registered DIMM
Standard Temp. **(0°C~ 85°C)**	2GB	(256Mx8)x9	1Rx8	TS256MKR72V6N
	4GB	(256Mx8)x18	2Rx8	TS512MKR72V6N
	4GB	(512Mx8)x9	1Rx8	TS512MKR72V6H
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6H
	16GB	(1Gx4)x36	2Rx4	TS2GKR72V6Z
Low Voltage **(0°C~ 85°C)**	2GB	(256Mx8)x9	1Rx8	TS256MKR72W6N
	4GB	(256Mx8)x18	2Rx8	TS512MKR72W6N
	4GB	(512Mx8)x9	1Rx8	TS512MKR72W6H
	8GB	(512Mx8)x18	2Rx8	TS1GKR72W6H
	16GB	(1Gx4)x36	2Rx4	TS2GKR72W6Z
Very Low Profile **(0°C~ 85°C)**	4GB	(256Mx8)x18	2Rx8	TS512MKR72V6NL
	4GB	(512Mx8)x9	1Rx8	TS512MKR72V6HL
	8GB	(512Mx8)x18	2Rx8	TS1GKR72V6HL

* DDR3 1866Mbps and 1333Mbps are also available.

SSD Solutions

Transcend's Solid-State Drive (SSD) solutions offer fast, reliable performance and capacious storage capacities for devices working in extreme industrial conditions. The SSD series is offered in many form factors, including 2.5", M.2, mSATA, and Half-Slim SSDs.

Product Line

Interface	Type	Model	Flash Type	Capacity	Operating Temperature
PCIe M.2	2280	MTE652T2/MTE652T-I	3D TLC (96-layer)	128GB~512GB	-20°C~75°C / -40°C~85°C
		MTE662T2/MTE662T-I		512GB~2TB	
	2242	MTE452T2/MTE452T-I		128GB~512GB	
	2230	MTE352T/MTE352T-I		128GB~512GB	
SATA III 2.5"		SSD452K2/SSD452K-I	3D TLC (96-layer)	64GB~2TB	-20°C~75°C / -40°C~85°C
		SSD420K/SSD420I	MLC	16GB~1TB	0°C~70°C / -40°C~85°C
SATA III M.2	2280	MTS952T2/MTS952T-I	3D TLC (96-layer)	64GB~2TB	-20°C~75°C / -40°C~85°C
		MTS800/MTS800I	MLC	16GB~1TB	0°C~70°C / -40°C~85°C
	2260	MTS600/MTS600I	MLC	32GB~512GB	0°C~70°C / -40°C~85°C
	2242	MTS552T2/MTS552T-I	3D TLC (96-layer)	64GB~512GB	-20°C~75°C / -40°C~85°C
		MTS400/MTS400I	MLC	16GB~512GB	0°C~70°C / -40°C~85°C
SATA III mSATA		MSA452T2/MSA452T-I	3D TLC (96-layer)	64GB~1TB	-20°C~75°C / -40°C~85°C
		MSA370/MSA370I	MLC	16GB~1TB	0°C~70°C / -40°C~85°C
SATA III mSATA mini		MSM360/MSM360I	MLC	16GB~128GB	0°C~70°C / -40°C~85°C
SATA III Half-Slim		HSD452T/HSD452T-I	3D TLC (96-layer)	64GB~512GB	0°C~70°C / -40°C~85°C
		HSD370/HSD370I	MLC	8GB~128GB	

Product Highlights

Next-Gen 3D NAND SSDs
Rugged Models for Demanding Industrial Market

Transcend has rolled out with a new line of solid-state drives featuring the latest generation of 96-layer 3D NAND flash. The release includes various form factors and large capacity options from 64GB to 2TB.

The new SSDs are built with a 30µ" gold finger and baked-in Corner Bond which fortifies key components and increases reliability under high thermal or vibratory stress, high gravitational acceleration, and high fatigue cycle applications. All of these features propel the SSDs to reach an endurance rating of 3K P/E cycles.

The new 3D NAND SSDs can operate efficiently under an extended operating temperature range (-20℃ ~ 75℃).

Built-in thermal throttling maintains stable performance by preventing overheating. Great tolerance to extreme temperatures makes these drives the ideal storage solution for industries where thermal challenges frequently show up.

Wide Product Range
• SATA III 2.5"
• PCIe M.2 2230/2242/2280
• SATA III M.2 2242/2280
• SATA III mSATA

-20ºC   75ºC
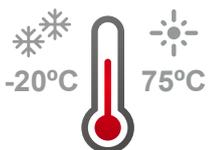
Extended Temperature -20°C ~ 75°C

30µ"

30µ" PCB Gold Finger

Corner Bond

Dynamic Thermal Throttling Technology

PCIe M.2 SSDs (2280)

- High-speed PCIe Gen 3x4 interface
- Endurance: 3K P/E cycles (Program/Erase cycles)
- SLC caching technology
- Built-in LDPC ECC (Error Correction Code) functionality
- Key components fortified with default Corner Bond process

Interface	PCIe Gen 3x4	
Type	2280-D2-M	
Flash	3D TLC (96-layer)	
Model	MTE652T2/MTE652T-I	MTE662T2/MTE662T-I
Capacity	128GB~512GB	512GB~2TB
Sequential R/W*	2,100/1,000 MB/s	3,500/2,700 MB/s
TBW*	1,080 TBW	4,400 TBW
MTBF*	3,000,000 hours	
DWPD*	2.0 (3 years)	
Operating Temperature	Extended Temperature: -20°C~75°C Wide Temperature: -40°C~85°C	
Dimensions	80±0.15 x 22±0.15 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	3.3W	6.9W
Power Shield	Supported	
Thermal Sensor	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

Ordering Information

	Capacity	PCIe M.2 SSDs 2280/3D TLC	
Extended Temp. (-20°C~ 75°C)	128GB	TS128GMTE652T2	-
	256GB	TS256GMTE652T2	-
	512GB	TS512GMTE652T2	TS512GMTE662T2
	1TB	-	TS1TMTE662T2
	2TB	-	TS2TMTE662T2
Wide Temp. (-40°C~ 85°C)	128GB	TS128GMTE652T-I	-
	256GB	TS256GMTE652T-I	-
	512GB	TS512GMTE652T-I	TS512GMTE662T-I
	1TB	-	TS1TMTE662T-I
	2TB	-	TS2TMTE662T-I

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

PCIe M.2 SSDs (2242/2230)

- High-speed Gen 3x2 interface
- Endurance: 3K P/E cycles (Program/Erase cycles)
- SLC caching technology
- Built-in LDPC ECC (Error Correction Code) functionality
- Key components fortified with default Corner Bond process

Interface	PCIe Gen 3x2	
Type	2242-D2-B-M	2230-S3-B-M
Flash	3D TLC (96-layer)	
Model	MTE452T2/MTE452T-I	MTE352T/MTE352T-I
Capacity	128GB~512GB	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*	2.0 (3 years)	
Operating Temperature	Extended Temperature: -20℃~75℃ Wide Temperature: -40℃~85℃	
Dimensions	42±0.15 x 22±0.15 x 3.58 mm	30±0.15 x 22±0.15 x 2.38 mm
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.81W	3W
Power Shield	Supported	
Thermal Sensor	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	-
Corner Bond	Supported	
PCB Gold Finger Thickness	30μ"	

Ordering Information

	Capacity	PCIe M.2 SSDs 2242/3D TLC	PCIe M.2 SSDs 2230/3D TLC
Extended Temp. (-20℃~ 75℃)	128GB	TS128GMTE452T2	TS128GMTE352T
	256GB	TS256GMTE452T2	TS256GMTE352T
	512GB	TS512GMTE452T2	TS512GMTE352T
Wide Temp. (-40℃~ 85℃)	128GB	TS128GMTE452T-I	TS128GMTE352T-I
	256GB	TS256GMTE452T-I	TS256GMTE352T-I
	512GB	TS512GMTE452T-I	TS512GMTE352T-I

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

SATA III 2.5" SSDs

- Manufactured with top-tier NAND flash memory
- Advanced Global Wear-Leveling and Block management for reliability
- Advanced Garbage Collection
- Enhanced S.M.A.R.T. function for durability
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s	
Type	2.5" SATA (7+15 pin)	
Flash	3D TLC (96-layer)	MLC
Model	SSD452K2/SSD452K-I	SSD420K/SSD420I
Capacity	64GB~2TB	16GB~1TB
Sequential R/W*	560/520 MB/s	530/470 MB/s
TBW*	3,520 TBW	2,940 TBW
MTBF*	3,000,000 hours	2,000,000 hours
DWPD*	1.61 (3 years)	2.6 (3 years)
Operating Temperature	Extended Temperature: -20℃~75℃ Wide Temperature: -40℃~85℃	Standard Temperature: 0℃~70℃ Wide Temperature: -40℃~85℃
Dimensions	100±0.25 x 69.85±0.25 x 6.8±0.2 mm	
Operating Voltage	5V±5%	
Max. Power Consumption	3.5W	2.65W
Power Shield	Supported	
Thermal Sensor	Supported	
ATA Security	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	
Corner Bond	Supported (SSD452K2)	-

Ordering Information

	Capacity	SATA III 6Gb/s 3D TLC	SATA III 6Gb/s MLC
Standard Temp. **(0℃~ 70℃)**	16GB	-	TS16GSSD420K
	32GB	-	TS32GSSD420K
	64GB	-	TS64GSSD420K
	128GB	-	TS128GSSD420K
	256GB	-	TS256GSSD420K
	512GB	-	TS512GSSD420K
	1TB	-	TS1TSSD420K
	2TB	-	-
Extended Temp. **(-20℃~ 75℃)**	64GB	TS64GSSD452K2	-
	128GB	TS128GSSD452K2	-
	256GB	TS256GSSD452K2	-
	512GB	TS512GSSD452K2	-
	1TB	TS1TSSD452K2	-
	2TB	TS2TSSD452K2	-
Wide Temp. **(-40℃~ 85℃)**	16GB	-	TS16GSSD420I
	32GB	-	TS32GSSD420I
	64GB	TS64GSSD452K-I	TS64GSSD420I
	128GB	TS128GSSD452K-I	TS128GSSD420I
	256GB	TS256GSSD452K-I	TS256GSSD420I
	512GB	TS512GSSD452K-I	TS512GSSD420I
	1TB	TS1TSSD452K-I	TS1TSSD420I
	2TB	TS2TSSD452K-I	-

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

SATA III M.2 SSDs (2280)

- Manufactured with top-tier NAND flash memory
- Space-saving M.2 form factor (80mm) – ideal for mobile computing devices
- Supports S.M.A.R.T., TRIM, and NCQ command
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s	
Type	2280-D2-B-M	
Flash	3D TLC (96-layer)	MLC
Model	MTS952T2/MTS952T-I	MTS800/MTS800I
Capacity	64GB~2TB	16GB~1TB
Sequential R/W*	560/520 MB/s	530/460 MB/s
TBW*	3,520 TBW	2,360 TBW
MTBF*	3,000,000 hours	2,500,000 hours
DWPD*	1.61 (3 years)	2.6 (3 years)
Operating Temperature	Extended Temperature: -20℃~75℃ Wide Temperature: -40℃~85℃	Standard Temperature: 0℃~70℃ Wide Temperature: -40℃~85℃
Dimensions	80±0.15 x 22±0.15 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.1W	2.64W
Power Shield	Supported	
Thermal Sensor	Supported	
ATA Security/S.M.A.R.T.	Supported	
DRAM Cache	Supported	
Corner Bond	Supported (MTS952T2)	-
PCB Gold Finger Thickness	30µ"	-

Ordering Information

	Capacity	SATA III M.2 SSDs 2280/3D TLC	SATA III M.2 SSDs 2280/MLC
Standard Temp. (0℃~ 70℃)	16GB	-	TS16GMTS800
	32GB	-	TS32GMTS800
	64GB	-	TS64GMTS800
	128GB	-	TS128GMTS800
	256GB	-	TS256GMTS800
	512GB	-	TS512GMTS800
	1TB	-	TS1TMTS800
Extended Temp. (-20℃~ 75℃)	64GB	TS64GMTS952T2	-
	128GB	TS128GMTS952T2	-
	256GB	TS256GMTS952T2	-
	512GB	TS512GMTS952T2	-
	1TB	TS1TMTS952T2	-
	2TB	TS2TMTS952T2	-
Wide Temp. (-40℃~ 85℃)	16GB	-	TS16GMTS800I
	32GB	-	TS32GMTS800I
	64GB	TS64GMTS952T-I	TS64GMTS800I
	128GB	TS128GMTS952T-I	TS128GMTS800I
	256GB	TS256GMTS952T-I	TS256GMTS800I
	512GB	TS512GMTS952T-I	TS512GMTS800I
	1TB	TS1TMTS952T-I	TS1TMTS800I
	2TB	TS2TMTS952T-I	-

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

SATA III M.2 SSDs (2260)

- Manufactured with MLC NAND flash memory for extra endurance and stability
- Space-saving M.2 form factor (60mm) – ideal for mobile computing devices
- Supports S.M.A.R.T., TRIM, and NCQ command
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	**SATA III 6Gb/s**
Type	**2260-D2-B-M**
Flash	**MLC**
Model	MTS600/MTS600I
Capacity	32GB~512GB
Sequential R/W*	530/450 MB/s
TBW*	1,480 TBW
MTBF*	2,500,000 hours
DWPD*	2.6 (3 years)
Operating Temperature	Standard Temperature: 0°C~70°C Wide Temperature: -40°C~85°C
Dimensions	60±0.15 x 22±0.15 x 3.58 mm
Operating Voltage	3.3V±5%
Max. Power Consumption	2.50W
Power Shield	Supported
Thermal Sensor	Supported
ATA Security	Supported
S.M.A.R.T.	Supported
DRAM Cache	Supported

Ordering Information

	Capacity	SATA III M.2 SSDs 2260/MLC
Standard Temp. (0°C~ 70°C)	32GB	TS32GMTS600
	64GB	TS64GMTS600
	128GB	TS128GMTS600
	256GB	TS256GMTS600
	512GB	TS512GMTS600
Wide Temp. (-40°C~ 85°C)	32GB	TS32GMTS600I
	64GB	TS64GMTS600I
	128GB	TS128GMTS600I
	256GB	TS256GMTS600I
	512GB	TS512GMTS600I

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

SATA III M.2 SSDs (2242)

- Manufactured with top-tier NAND flash memory
- Space-saving M.2 form factor (42mm) – ideal for mobile computing devices
- Supports S.M.A.R.T., TRIM, and NCQ command
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s	
Type	2242-D2-B-M	
Flash	3D TLC (96-layer)	MLC
Model	MTS552T2/MTS552T-I	MTS400/MTS400I
Capacity	64GB~512GB	16GB~512GB
Sequential R/W*	560/510 MB/s	530/470 MB/s
TBW*	880 TBW	1,100 TBW
MTBF*	3,000,000 hours	2,500,000 hours
DWPD*	1.61 (3 years)	2 (3 years)
Operating Temperature	Extended Temperature: -20°C~75°C Wide Temperature: -40°C~85°C	Standard Temperature: 0°C~70°C Wide Temperature: -40°C~85°C
Dimensions	42±0.15 x 22±0.15 x 3.58 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	1.7W	2.48W
Power Shield	Supported	
Thermal Sensor	Supported	
ATA Security	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	
Corner Bond	Supported (MTS552T2)	-
PCB Gold Finger Thickness	30μ"	-

Ordering Information

	Capacity	SATA III M.2 SSDs 2242/3D TLC	SATA III M.2 SSDs 2242/MLC
Standard Temp. (0°C~ 70°C)	16GB	-	TS16GMTS400
	32GB	-	TS32GMTS400
	64GB	-	TS64GMTS400
	128GB	-	TS128GMTS400
	256GB	-	TS256GMTS400
	512GB	-	TS512GMTS400
Extended Temp. (-20°C~ 75°C)	64GB	TS64GMTS552T2	-
	128GB	TS128GMTS552T2	-
	256GB	TS256GMTS552T2	-
	512GB	TS512GMTS552T2	-
Wide Temp. (-40°C~ 85°C)	16GB	-	TS16GMTS400I
	32GB	-	TS32GMTS400I
	64GB	TS64GMTS552T-I	TS64GMTS400I
	128GB	TS128GMTS552T-I	TS128GMTS400I
	256GB	TS256GMTS552T-I	TS256GMTS400I
	512GB	TS512GMTS552T-I	TS512GMTS400I

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

SATA III mSATA SSDs

- Manufactured with top-tier NAND flash memory
- Endurance: 3K P/E cycles (Program/Erase cycles)
- Built-in ECC (Error Correction Code) functionality
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s	
Type	mSATA (52 pin)	
Flash	3D TLC (96-layer)	MLC
Model	MSA452T2/MSA452T-I	MSA370/MSA370I
Capacity	64GB~1TB	16GB~1TB
Sequential R/W*	560/520 MB/s	550/450 MB/s
TBW*	1,760 TBW	2,360 TBW
MTBF*	3,000,000 hours	2,500,000 hours
DWPD*	1.61 (3 years)	2.6 (3 years)
Operating Temperature	Extended Temperature: -20℃~75℃ Wide Temperature: -40℃~85℃	Standard Temperature: 0℃~70℃ Wide Temperature: -40℃~85℃
Dimensions	50.8±0.15 x 29.85±0.15 x 4.85 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.4W	2.64W
Power Shield	Supported	
Thermal Sensor	Supported	
ATA Security	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	
Corner Bond	Supported (MSA452T2)	–
PCB Gold Finger Thickness	30μ"	-

Ordering Information

	Capacity	SATA III mSATA SSDs 3D TLC	SATA III mSATA SSDs MLC
Standard Temp. (0℃~ 70℃)	16GB	-	TS16GMSA370
	32GB	-	TS32GMSA370
	64GB	-	TS64GMSA370
	128GB	-	TS128GMSA370
	256GB	-	TS256GMSA370
	512GB	-	TS512GMSA370
	1TB	-	TS1TMSA370
Extended Temp. (-20℃~ 75℃)	64GB	TS64GMSA452T2	-
	128GB	TS128GMSA452T2	-
	256GB	TS256GMSA452T2	-
	512GB	TS512GMSA452T2	-
	1TB	TS1TMSA452T2	-
Wide Temp. (-40℃~ 85℃)	16GB	-	TS16GMSA370I
	32GB	-	TS32GMSA370I
	64GB	TS64GMSA452T-I	TS64GMSA370I
	128GB	TS128GMSA452T-I	TS128GMSA370I
	256GB	TS256GMSA452T-I	TS256GMSA370I
	512GB	TS512GMSA452T-I	TS512GMSA370I
	1TB	TS1TMSA452T-I	TS1TMSA370I

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

SATA III mSATA mini SSDs

- Manufactured with MLC NAND flash memory for extra endurance and stability
- Compliant with JEDEC MO-300B
- Advanced Global Wear-Leveling and Block management for reliability
- Built-in 66 bits per 1KByte ECC (Error Correction Code) functionality
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s
Type	mSATA (52 pin)
Flash	MLC
Model	MSM360/MSM360I
Capacity	16GB~128GB
Sequential R/W*	520/220 MB/s
TBW*	168 TBW
MTBF*	2,500,000 hours
DWPD*	1.19 (3 years)
Operating Temperature	Standard Temperature: 0℃~70℃ Wide Temperature: -40℃~85℃
Dimensions	29.85±0.15 x 26.8±0.15 x 3.85 mm
Operating Voltage	3.3V±5%
Max. Power Consumption	2.0W
Power Shield	Supported
Thermal Sensor	Supported
ATA Security	Supported
S.M.A.R.T.	Supported

Ordering Information

	Capacity	SATA III mSATA mini SSDs MLC
Standard Temp. (0℃~ 70℃)	16GB	TS16GMSM360
	32GB	TS32GMSM360
	64GB	TS64GMSM360
	128GB	TS128GMSM360
Wide Temp. (-40℃~ 85℃)	16GB	TS16GMSM360I
	32GB	TS32GMSM360I
	64GB	TS64GMSM360I
	128GB	TS128GMSM360I

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

SATA III Half-Slim SSDs

- Manufactured with top-tier NAND flash memory
- Built-in ECC (Error Correction Code) functionality
- Advanced Global Wear-Leveling and Block management for reliability
- Advanced Garbage Collection
- Power-saving DevSleep (Device Sleep) mode (optional)

Interface	SATA III 6Gb/s	
Type	Half-Slim SATA (7+15 pin)	
Flash	3D TLC (96-layer)	MLC
Model	HSD452T/HSD452T-I	HSD370/HSD370I
Capacity	64GB~512GB	8GB~128GB
Sequential R/W*	560/520 MB/s	530/200 MB/s
TBW*	880 TBW	360 TBW
MTBF*	3,000,000 hours	2,500,000 hours
DWPD*	1.61 (3 years)	2.6 (3 years)
Operating Temperature	Standard Temperature: 0℃~70℃ Wide Temperature: -40℃~85℃	
Dimensions	54±0.15 x 39.8±0.3 x 4±0.15 mm	
Operating Voltage	5V±5%	
Max. Power Consumption	2.7W	1.85W
Power Shield	Supported	
Thermal Sensor	Supported	
ATA Security	Supported	
S.M.A.R.T.	Supported	
DRAM Cache	Supported	

Ordering Information

	Capacity	SATA III Half-Slim SSDs 3D TLC	SATA III Half-Slim SSDs MLC
Standard Temp. (0℃~ 70℃)	8GB	-	TS8GHSD370
	16GB	-	TS16GHSD370
	32GB	-	TS32GHSD370
	64GB	TS64GHSD452T	TS64GHSD370
	128GB	TS128GHSD452T	TS128GHSD370
	256GB	TS256GHSD452T	-
	512GB	TS512GHSD452T	-
Wide Temp. (-40℃~ 85℃)	8GB	-	TS8GHSD370I
	16GB	-	TS16GHSD370I
	32GB	-	TS32GHSD370I
	64GB	TS64GHSD452T-I	TS64GHSD370I
	128GB	TS128GHSD452T-I	TS128GHSD370I
	256GB	TS256GHSD452T-I	-
	512GB	TS512GHSD452T-I	-

* 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	SDC420T	3D TLC	16GB~512GB	-25°C~85°C
	SDC410M	MLC	2GB~16GB	-25°C~85°C
	SDC10M/SDC10I	MLC	8GB~64GB	-25°C~85°C / -40°C~85°C
	SDC100I	SLC	128MB~4GB	-40°C~85°C
microSD Cards	USD420T	3D TLC	16GB~256GB	-25°C~85°C
	USD230I	3D TLC / SLC mode	2GB~64GB	-40°C~85°C
	USD410M	MLC	2GB~16GB	-25°C~85°C
	USDC10M/ USDC10I	MLC	4GB~64GB	-25°C~85°C / -40°C~85°C
CompactFlash Cards	CF170	MLC	4GB~64GB	-25°C~85°C
	CF180	SuperMLC	4GB/8GB	0°C~70°C
	CF300	SLC	128MB~4GB	-25°C~85°C
	CF220I	SLC	128MB~8GB	-40°C~85°C
CFast Cards	CFX600	MLC	16GB~256GB	-5°C~70°C
	CFX720	SuperMLC	32GB~128GB	

SD Cards

- Manufactured with top-tier NAND flash memory
- Endurance: 3K P/E cycles (Program/Erase cycles) guaranteed**
- Built-in ECC (Error Correction Code) functionality
- Reliability and durability optimized for edge storage
- Compliant with the latest speed ratings

Standard	SD 6.1/3.0	SD 5.1/3.0	SD 3.0
Connector	9 pin		
Flash	3D TLC	MLC	MLC
Model	SDC420T	SDC410M	SDC10M/SDC10I
Capacity	16GB~512GB	2GB~16GB	8GB~64GB
Sequential R/W*	100/85 MB/s	95/20 MB/s	21/20 MB/s
TBW*	1,350 TBW	43 TBW	120 TBW
Operating Temperature	Standard Temperature: -25℃~85℃		Standard Temperature: -25℃~85℃ Wide Temperature: -40℃~85℃
Dimensions	32±0.1 x 24±0.1 x 2.1±0.15 mm		
Operating Voltage	2.7V~3.6V		
Max. Power Consumption	0.5W	0.2 W	0.72W

Ordering Information

	Capacity	SD Cards 3D TLC	SD Cards MLC	SD Cards MLC
Standard Temp. (-25℃~85℃)	2GB	-	TS2GSDC410M	-
	4GB	-	TS4GSDC410M	-
	8GB	-	TS8GSDC410M	TS8GSDHC10M
	16GB	TS16GSDC420T	TS16GSDC410M	TS16GSDHC10M
	32GB	TS32GSDC420T	-	TS32GSDHC10M
	64GB	TS64GSDC420T	-	TS64GSDXC10M
	128GB	TS128GSDC420T	-	-
	256GB	TS256GSDC420T	-	-
	512GB	TS512GSDC420T	-	-
Wide Temp. (-40℃~ 85℃)	8GB	-	-	TS8GSDHC10I
	16GB	-	-	TS16GSDHC10I
	32GB	-	-	TS32GSDHC10I

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

** Transcend's SDHC 420T 16GB features 1K P/E cycle endurance rating.

SD Cards

- Manufactured with SLC NAND flash memory
- Reliability and durability optimized for edge storage
- Insertion / removal durability: 10,000 cycles
- Compliant with the latest speed ratings
- High environmental performance for secure and reliable operation

Standard	SD 3.0
Connector	9 pin
Flash	SLC
Model	SDC100I
Capacity	128MB~4GB
Sequential R/W*	24/14.8 MB/s
TBW*	124 TBW
Operating Temperature	Wide Temperature: -40°C~85°C
Dimensions	32±0.1 x 24±0.1 x 2.1±0.15 mm
Operating Voltage	2.7V~3.6V
Max. Power Consumption	0.72W

Ordering Information

	Capacity	SD Cards SLC
Wide Temp. (-40°C~ 85°C)	128MB	TS128MSD100I
	256MB	TS256MSD100I
	512MB	TS512MSD100I
	1GB	TS1GSD100I
	2GB	TS2GSD100I
	4GB	TS4GSDHC100I

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

microSD Cards

- Manufactured with top-tier NAND flash memory
- Endurance: 3K P/E cycles (Program/Erase cycles) guaranteed (USD420T)**
- Built-in ECC (Error Correction Code) functionality
- Reliability and durability optimized for edge storage
- Compliant with the latest speed ratings

Standard	SD 5.1/3.0	SD 5.1/3.0
Connector	8 pin	
Flash	3D TLC	3D TLC/SLC mode
Model	USD420T	USD230I
Capacity	16GB~256GB	2GB~64GB
Sequential R/W*	95/40 MB/s	100/70 MB/s
TBW*	640 TBW	5,800 TBW
Operating Temperature	Standard Temperature: -25℃~85℃	Wide Temperature: -40℃~85℃
Dimensions	15±0.1 x 11±0.1 x 0.7±0.1 mm	
Operating Voltage	2.7V~3.6V	
Max. Power Consumption	0.5W	0.2 W

Ordering Information

	Capacity	microSD Cards 3D TLC	microSD Cards 3D TLC/SLC mode
Standard Temp. (-25℃~85℃)	16GB	TS16GUSD420T	-
	32GB	TS32GUSD420T	-
	64GB	TS64GUSD420T	-
	128GB	TS128GUSD420T	-
	256GB	TS256GUSD420T	-
Wide Temp. (-40℃~ 85℃)	2GB	-	TS2GUSD230I
	4GB	-	TS4GUSD230I
	8GB	-	TS8GUSD230I
	16GB	-	TS16GUSD230I
	32GB	-	TS32GUSD230I
	64GB	-	TS64GUSD230I

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

** Transcend's USD 420T 16GB features 1K P/E cycle endurance rating.

microSD Cards

- Manufactured with top-tier NAND flash memory
- Endurance: 3K P/E cycles (Program/Erase cycles) guaranteed
- Built-in ECC (Error Correction Code) functionality
- Reliability and durability optimized for edge storage
- Compliant with the latest speed ratings

Standard	SD 5.1/3.0	SD 3.0
Connector	8 pin	
Flash	MLC	MLC
Model	USD410M	USDC10M/USDC10I
Capacity	2GB~16GB	4GB~64GB
Sequential R/W*	95/30 MB/s	24/22 MB/s
TBW*	43 TBW	120 TBW
Operating Temperature	Standard Temperature: -25℃~85℃	Standard Temperature: -25℃~85℃ Wide Temperature: -40℃~85℃
Dimensions	15±0.1 x 11±0.1 x 0.7±0.1 mm	
Operating Voltage	2.7V~3.6V	
Max. Power Consumption	0.2 W	0.72W

Ordering Information

	Capacity	microSD Cards MLC	microSD Cards MLC
Standard Temp. (-25℃~85℃)	2GB	TS2GUSD410M	-
	4GB	TS4GUSD410M	TS4GUSDC10M
	8GB	TS8GUSD410M	TS8GUSDC10M
	16GB	TS16GUSD410M	TS16GUSDC10M
	32GB	-	TS32GUSDC10M
Wide Temp. (-40℃~ 85℃)	8GB	-	TS8GUSDC10I
	16GB	-	TS16GUSDC10I
	32GB	-	TS32GUSDC10I
	64GB	-	TS64GUSDC10I

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

CompactFlash Cards

- Manufactured with top-tier NAND flash memory
- Security Command
- Enhanced S.M.A.R.T. function for durability
- Power Shield (PS) to prevent data loss in the event of sudden power outage
- Global Wear-Leveling and Block management for reliability
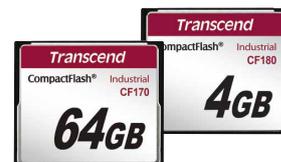
Standard	True IDE	
Connector	50 pin	
Flash	MLC	SuperMLC
Model	CF170	CF180
Capacity	4GB~64GB	4GB/8GB
Sequential R/W*	87/68 MB/s	84/70 MB/s
TBW*	85 TBW	53 TBW
Operating Temperature	Standard Temperature: -25℃~85℃	Standard Temperature: 0℃~70℃
Dimensions	42.8±0.1 x 36.4±0.15 x 3.3±0.1 mm	
Operating Voltage	3.3V±5%/5V±10%	
Max. Power Consumption	0.64W	0.48W
S.M.A.R.T.	Supported	

Ordering Information

	Capacity	CompactFlash Cards MLC	CompactFlash Cards SuperMLC
Standard Temp. (0℃~70℃)	4GB	-	TS4GCF180
	8GB	-	TS8GCF180
Standard Temp. (-25℃~85℃)	4GB	TS4GCF170	-
	8GB	TS8GCF170	-
	16GB	TS16GCF170	-
	32GB	TS32GCF170	-
	64GB	TS64GCF170	-

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

CompactFlash Cards

- Manufactured with top-tier NAND flash memory
- Security Command
- Enhanced S.M.A.R.T. function for durability
- Power Shield (PS) to prevent data loss in the event of sudden power outage
- Global Wear-Leveling and Block management for reliability
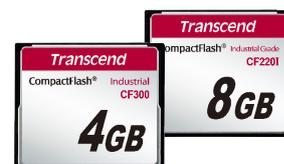
Standard	True IDE	
Connector	50 pin	
Flash	SLC	SLC
Model	CF300	CF220I
Capacity	128MB~4GB	128MB~8GB
Sequential R/W*	59/24 MB/s	56/44 MB/s
TBW*	83 TBW	159 TBW
Operating Temperature	Standard Temperature: -25°C~85°C	Wide Temperature: -40°C~85°C
Dimensions	42.8±0.1 x 36.4±0.15 x 3.3±0.1 mm	
Operating Voltage	3.3V±5%/5V±10%	
Max. Power Consumption	0.33W	0.54W
S.M.A.R.T.	Supported	

Ordering Information

	Capacity	CompactFlash Cards SLC	CompactFlash Cards SLC
Standard Temp. (-25°C~85°C)	128MB	TS128MCF300	-
	256MB	TS256MCF300	-
	512MB	TS512MCF300	-
	1GB	TS1GCF300	-
	2GB	TS2GCF300	-
	4GB	TS4GCF300	-
Wide Temp. (-40°C~ 85°C)	128MB	-	TS128MCF220I
	256MB	-	TS256MCF220I
	512MB	-	TS512MCF220I
	1GB	-	TS1GCF220I
	2GB	-	TS2GCF220I
	4GB	-	TS4GCF220I
	8GB	-	TS8GCF220I

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

CFast Cards

- Manufactured with top-tier NAND flash memory
- Compliant with CFast specification 2.0
- Light and portable size used as a bootable disk
- Built-in Error Correcting Code (ECC) functionality
- Global Wear-Leveling and Block management for reliability
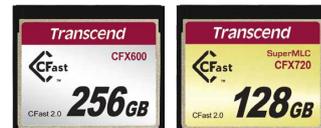
Standard	SATA III 6GB/s	
Connector	24 pin	
Flash	MLC	SuperMLC
Model	CFX600	CFX720
Capacity	16GB~256GB	32GB~128GB
Sequential R/W*	500/350 MB/s	506/427 MB/s
TBW*	82 TBW	608 TBW
Operating Temperature	Standard Temperature: -5℃~70℃	
Dimensions	42.8±0.1 x 36.4±0.15 x 3.3±0.1 mm	
Operating Voltage	3.3V±5%	
Max. Power Consumption	2.05W	1.42W
S.M.A.R.T.	Supported	

Ordering Information

	Capacity	CFast Cards MLC	CFast Cards SuperMLC
Standard Temp. (-5℃~70℃)	16GB	TS16GCFX600	-
	32GB	TS32GCFX600	TS32GCFX720
	64GB	TS64GCFX600	TS64GCFX720
	128GB	TS128GCFX600	TS128GCFX720
	256GB	TS256GCFX600	-

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

Flash Solutions

Transcend's Flash solutions include PATA/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 features 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
PATA DOMs	PTM520	SLC	512MB~4GB	0°C~70°C
	PTM720		512MB~4GB	
	PTM820		512MB/1GB	
Flash DOMs	UFM-V	SLC	512MB~2GB	0°C~70°C
	UFM-H	SLC / MLC	512MB~8GB	0°C~70°C
USB Flash Drives	JF280T	3D TLC	32GB~128GB	0°C~70°C
	JF270M	MLC	8GB~32GB	
	JF170	SLC	512MB~2GB	

PATA DOMs

- Fully compatible with devices and OS that support the IDE standard
- Enhanced S.M.A.R.T. function for durability
- Security Command
- Supports Ultra DMA Mode 4
- Supports PIO Mode 6

Standard	True IDE		
Connector	40 pin Vertical	44 pin Vertical	44 pin Horizontal
Flash	SLC		
Model	PTM520	PTM720	PTM820
Capacity	512MB~4GB	512MB~4GB	512MB/1GB
Sequential R/W*	39/42 MB/s	39/42 MB/s	21/14 MB/s
Operating Temperature	Standard Temperature: 0°C~70°C		
Dimensions	61±0.4 x 27.1±0.5 x 7.1±0.2 mm	52±0.4 x 29.5±0.5 x 7.1±0.2 mm	45±0.4 x 28±0.2 x 6±0.5 mm
Operating Voltage	3.3V±5% / 5V±5%		
Max. Power Consumption	0.9W	0.9W	0.45W
S.M.A.R.T.	Supported		

Ordering Information

	Capacity	PATA DOMs SLC/40 pin Vertical	PATA DOMs SLC/44 pin Vertical	PATA DOMs SLC/44 pin Horizontal
Standard Temp. (0°C~ 70°C)	512MB	TS512MPTM520	TS512MPTM720	TS512MPTM820
	1GB	TS1GPTM520	TS1GPTM720	TS1GPTM820
	2GB	TS2GPTM520	TS2GPTM720	-
	4GB	TS4GPTM520	TS4GPTM720	-

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

Flash DOMs

- Manufactured with top-tier NAND flash memory
- Reliability and durability optimized for edge storage
- High environmental performance for secure operation
- Hot-swapping for easy plug-and-play

Standard	USB 2.0	
Connector	10 pin USB port	
Flash	SLC	SLC/MLC
Model	UFM-V	UFM-H
Capacity	512MB~2GB	512MB~8GB
Sequential R/W*	21/13 MB/s	40/39 MB/s
Operating Temperature	Standard Temperature: 0°C~70°C	
Dimensions	31.8±1.0 x 26.0±1.0 x 7.0±1.0 mm	37.8±0.1 x 26.65±0.1 x 9.7±0.2 mm
Operating Voltage	5V±10%	
Max. Power Consumption	0.75W	0.6W

Ordering Information

	Capacity	Flash DOMs SLC/10 pin USB port	Flash DOMs SLC & MLC/10 pin USB port
Standard Temp. (0°C~ 70°C)	512MB	TS512MUFM-V	TS512MUFM-H (SLC)
	1GB	TS1GUFM-V	-
	2GB	TS2GUFM-V	TS2GUFM-H (SLC)
	4GB	-	TS4GUFM-H (SLC)
	8GB	-	TS8GUFM-HM (MLC)

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

USB Flash Drives

- Manufactured with top-tier NAND flash memory
- Reliability and durability optimized for edge storage
- High environmental performance for secure operation
- Hot-swapping for easy plug-and-play

Standard	USB 3.1 Gen 1		USB 2.0
Connector	USB Type-A		
Flash	3D TLC	MLC	SLC
Model	JF280T	JF270M	JF170
Capacity	32GB~128GB	8GB~32GB	512MB~2GB
Sequential R/W*	140/40 MB/s	160/40 MB/s	16/12 MB/s
Operating Temperature	Standard Temperature: 0°C~70°C		
Dimensions	61.5±0.1 x 18.6±0.1 x 8.7±0.1 mm		60.9±0.1 x 19.3±0.1 x 8.5±0.1 mm
Operating Voltage	5V±10%		
Max. Power Consumption	0.9W	1W	0.55W

Ordering Information

	Capacity	USB Flash Drives USB Type-A/3D TLC	USB Flash Drives USB Type-A/MLC	USB Flash Drives USB Type-A/SLC
Standard Temp. (0°C~ 70°C)	512MB	-	-	TS512MJF170
	1GB	-	-	TS1GJF170
	2GB	-	-	TS2GJF170
	4GB	-	-	-
	8GB	-	TS8GJF270M	-
	16GB	-	TS16GJF270M	-
	32GB	TS32GJF280T	TS32GJF270M	-
	64GB	TS64GJF280T	-	-
	128GB	TS128GJF280T	-	-

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

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