Transcend®
EMBEDDED SOLUTIONS

**PRODUCT OVERVIEW**

# Embedded Solutions


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

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# About Transcend

## 30+ Years of Experience

Founded in 1989, Transcend Information Inc. is a leading global supplier of embedded memory products and storage solutions. Transcend has been granted over 150 patents for our award-winning products, developed by our in-house R&D team in close cooperation with our strategic component suppliers.

## Global Support

Transcend operates 11 branch offices worldwide, including in Los Angeles, Maryland, Hamburg, Rotterdam, London, Tokyo, Seoul, Shanghai, Beijing, Shenzhen, and Hong Kong. Our headquarters and manufacturing site are both located in Taipei, creating an optimum product supply system with a global reach.

## Stability & Reliability

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

# Our Strengths

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

## Top Quality Storage Solutions

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

## Facilities & Production Process

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

## R&D Expertise

- More than 150 patents
- 100+ person in-house R&D team
- Extensive embedded product development experience

## Reliable Supply

- Strategic alliance and direct relationship with top-tier suppliers

## Management of Product Life Cycle

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

## Global Operation & Worldwide Support

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

# Applications

Transcend's embedded solutions are utilized across various industries.

## Gaming

- Casino Gaming
- Lottery
- Player Tracking

## Automation

- Robot Controllers
- Human Machine Interfaces
- Digital Twin Technology

## Healthcare

- Medical Tablets & AIO PCs Medical Imaging
- Patient Monitoring


## Transportation

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

## Network & Telecom

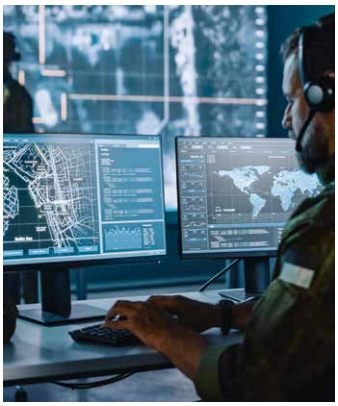
- Industrial Switches
- 5G Base Stations
- Network Security Appliances

## Embedded Computing

- Digital Signage
- Fanless PCs
- Embedded PCs

## AIoT

- Edge Computing
- Smart City
- Smart Agriculture



## Defense

- Rugged Laptops & Tablets
- Rugged Rackmount Devices

# Solutions & Technologies

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

## DURABILITY


### 112-layer 3D NAND Flash

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

### Dynamic Thermal Throttling

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


### SLC Mode

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

## SECURITY

### TCG Opal Compliance

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


### AES Encryption

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

# RELIABILITY


## Anti-Sulfur Technology

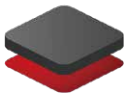
Transcend's anti-sulfur DRAM modules meet the ISA Standard S71.04-2013 level G2 and the ASTM B809-95 standard. Anti-sulfur resistors, which have a protective layer above vulnerable silver alloys, are used exclusively to prevent malfunctions caused by sulfuration.

## Wide Temperature

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


## Extended Temperature

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



## Corner Bond & Underfill

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

## Conformal Coating

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

# STABILITY

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

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

# Embedded Software Solutions

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

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

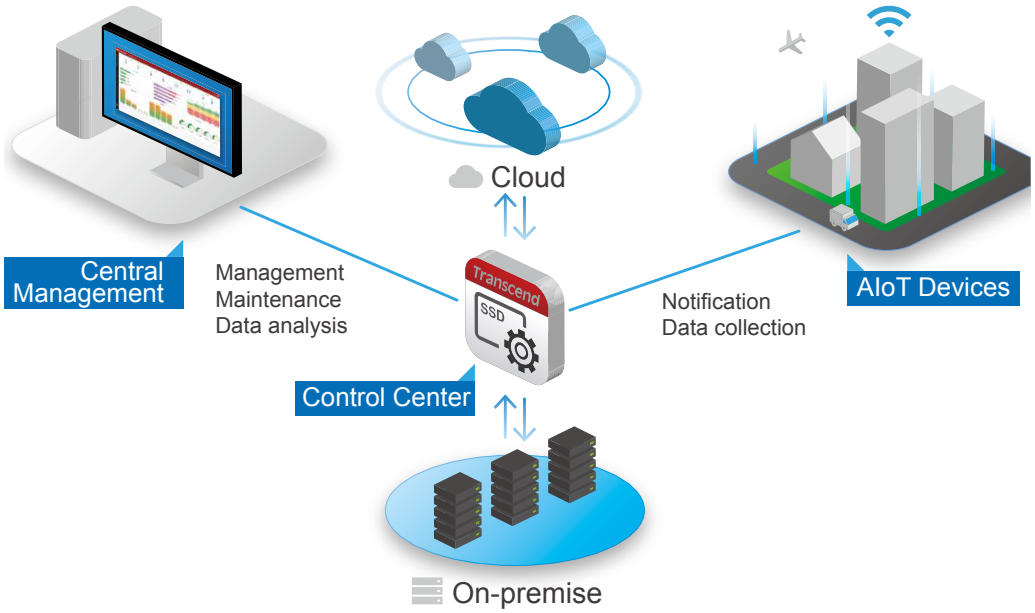
### Software and Hardware Integration
Seamlessly integrate hardware and software for complex applications.

### From Edge to Cloud
Work in tandem between the cloud and the edge to achieve utmost flexibility.

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

## Control Center — Management

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




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

### Remote upgrade & monitoring
Allows for remote monitoring of device health status and firmware updates.

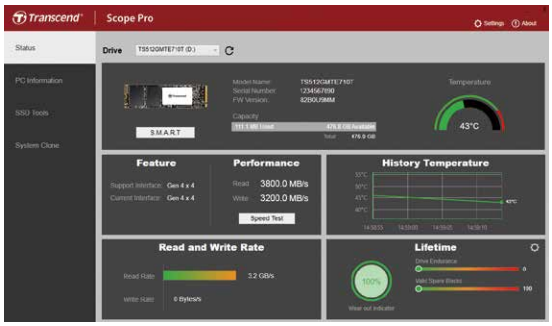
### Early Warning System (EWS) & Instant Notices
Detects potential issues and notifies users in real-time, enabling them to take proactive measures.

## Scope Pro / Scope Pro CLI

Monitor

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

*Scope Pro CLI for Linux OS.




### Efficient Monitoring

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

### Optimized Performance

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

### System Clone

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

## TCG Opal Toolbox | ATA Security Toolbox | UFD Security Toolbox

Security

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

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

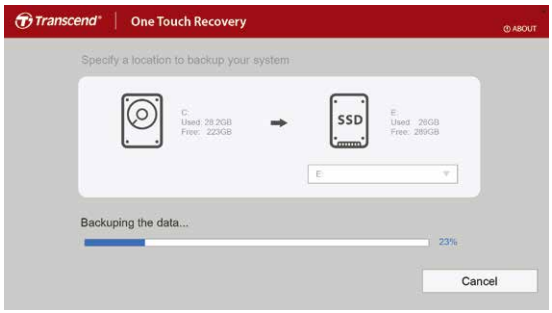
Determine the desired security level and perform lock, unlock, and drive erase functions.

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

## One Touch Recovery

Rescue

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




### Enhanced Efficiency

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

### Flexible Customization

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

### Remote Backup & Recovery

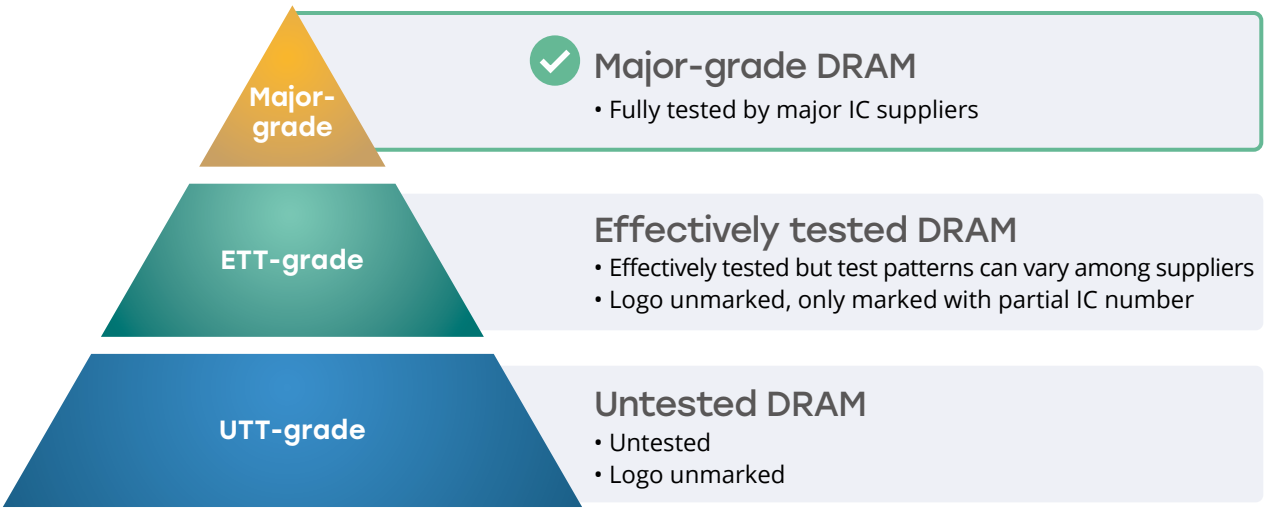
Can be operated remotely, allowing users to respond to emergency situations quickly, minimizing downtime and related costs.

# DRAM Modules

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

## IC Grade

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




## Product Line

| Module Type | | Speed (MT/s) | Operating Temperature | Capacity |
|---|---|---|---|---|
| DDR5 | CUDIMM / CSODIMM | 6400 | 0°C~85°C / -40°C~85°C | 16GB~32GB |
| | Unbuffered Long-DIMM / Unbuffered SO-DIMM | 5600 | 0°C~95°C / -20°C~95°C / -40°C~95°C | 8GB~48GB |
| | | 4800 | 0°C~95°C / -40°C~95°C | |
| | ECC-CUDIMM / ECC-CSODIMM | 6400 | 0°C~85°C / -40°C~85°C | 16GB~32GB |
| | ECC Long-DIMM / ECC SO-DIMM | 5600 | 0°C~95°C / -20°C~95°C / -40°C~95°C | |
| | | 4800 | 0°C~95°C / -40°C~95°C | |
| | Registered Long-DIMM | 6400 | 0°C~85°C / -40°C~85°C | 16GB~64GB |
| | | 5600 | 0°C~95°C / -20°C~95°C / -40°C~95°C | |
| | | 4800 | 0°C~95°C / -40°C~95°C | |
| DDR4 | Unbuffered Long-DIMM/ Unbuffered SO-DIMM | 3200 | 0°C~95°C / -20°C~95°C / -40°C~95°C | 4GB~32GB |
| | | 2666 | 0°C~95°C / -40°C~95°C | 2GB~32GB |
| | ECC Long-DIMM / ECC SO-DIMM | 3200 | 0°C~95°C / -20°C~95°C / -40°C~95°C | 4GB~32GB |
| | | 2666 | 0°C~95°C / -40°C~95°C | 4GB~32GB |
| | Registered Long-DIMM | 3200 | 0°C~95°C / -20°C~95°C / -40°C~95°C | 8GB~64GB |
| | | 2666 | 0°C~95°C / -40°C~95°C | 4GB~32GB |
| DDR3 | Unbuffered Long-DIMM / Unbuffered SO-DIMM | 1866/1600 | 0°C~85°C / -40°C~85°C | 1GB~8GB |
| | ECC Long-DIMM / ECC SO-DIMM | | | 2GB~8GB |
| | Registered Long-DIMM | | 0°C~85°C | 4GB~8GB |

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

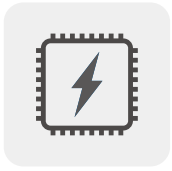
# Product Highlights

## DDR5 Memory Modules

### Unlock Next-Gen Performance and Efficiency

Transcend's DDR5 DRAM modules are built to JEDEC standards, offering high speed, low latency, and improved power efficiency. All modules feature on-die ECC and a PMIC for enhanced stability. At 6400MT/s, Transcend adopts a client clock driver (CKD) to ensure high-frequency signal integrity and introduces CU-DIMM and CSO-DIMM options. The product lineup includes Unbuffered DIMM, SO-DIMM, ECC DIMM, Registered DIMM, as well as CU-DIMM and CSO-DIMM at 6400MT/s—providing reliable, high-performance solutions for a wide range of computing applications.

## Key Features



Power Management IC (PMIC)

1.1V Low Power Supply

On-Die ECC

Major-Grade DRAM Components


JEDEC® Compliant


### 30µ" PCB Gold Fingers

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


### Anti-Sulfuration

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

# DDR5

| Module Type | CUDIMM | CSODIMM | Long-DIMM | SO-DIMM |
|---|---|---|---|---|
| Speed | 6400 MT/s | | 5600/4800 MT/s | |
| Capacity | 16GB~32GB | | 8GB~64GB | |
| Voltage | 1.1V | | | |
| PCB Height | 1.23 inches | 1.18 inches | 1.23 inches | 1.18 inches |
| 30μ" PCB Gold Finger | Wide Temp. / ECC / Registered | | | |
| Anti-Sulfuration | Wide Temp. / ECC / Registered | | | |
| Operating Temperature | 0°C~85°C / -40°C~85°C | | 0°C~95°C / -20°C~95°C / -40°C~95°C | |

## DDR5-6400 Unbuffered DIMM

| | Capacity | Component Composition | Rank x Org. | CUDIMM | CSODIMM |
|---|---|---|---|---|---|
| Standard Temp. (0°C~85°C) | 16GB | (2Gx8)x8 | 1Rx8 | TS2GLA64V4E3 | TS2GSA64V4E3 |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLA64V4E3 | TS4GSA64V4E3 |
| Wide Temp. (-40°C~85°C) | 16GB | (2Gx8)x8 | 1Rx8 | TS2GLA64V4E3-I | TS2GSA64V4E3-I |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLA64V4E3-I | TS4GSA64V4E3-I |

## DDR5-5600 Unbuffered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 8GB | (1Gx16)x4 | 1Rx16 | TS1GLA64V6G | TS1GSA64V6G |
| | 16GB | (2Gx8)x8 | 1Rx8 | TS2GLA64V6E | TS2GSA64V6E |
| | | (2Gx8)x8 | 1Rx8 | TS2GLA64V6E2 | TS2GSA64V6E2 |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLA64V6E | TS4GSA64V6E |
| | | (2Gx8)x16 | 2Rx8 | TS4GLA64V6E2 | TS4GSA64V6E2 |
| Standard Temp. (0°C~95°C) | 16GB | (2Gx8)x8 | 1Rx8 | TS5600ALE-16G | TS5600ASE-16G |
| | | (2Gx8)x8 | 1Rx8 | TS2GLA64V6E1 | TS2GSA64V6E1 |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS5600ALE-32G | TS5600ASE-32G |
| | | (2Gx8)x16 | 2Rx8 | TS4GLA64V6E1 | TS4GSA64V6E1 |
| | 48GB | (3Gx8)x16 | 2Rx8 | TS6GLA64V6E3 | TS6GSA64V6E3 |
| Wide Temp. (-40°C~95°C) | 8GB | (1Gx16)x4 | 1Rx16 | TS1GLA64V6G-I | TS1GSA64V6G-I |
| | 16GB | (2Gx8)x8 | 1Rx8 | TS2GLA64V6E-I | TS2GSA64V6E-I |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLA64V6E-I | TS4GSA64V6E-I |
| | 48GB | (3Gx8)x16 | 2Rx8 | TS6GLA64V6E3-I | TS6GSA64V6E3-I |

## DDR5-4800 Unbuffered DIMM

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

## DDR5-6400 ECC DIMM

| | Capacity | Component Composition | Rank x Org. | ECC-CUDIMM | ECC-CSODIMM |
|---|---|---|---|---|---|
| Standard Temp. (0°C~85°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GLA72V4E3 | TS2GSA72V4E3 |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GLA72V4E3 | TS4GSA72V4E3 |
| Wide Temp. (-40°C~85°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GLA72V4E3-I | TS2GSA72V4E3-I |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GLA72V4E3-I | TS4GSA72V4E3-I |

## DDR5-5600 ECC DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GLA72V6E | TS2GSA72V6E |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GLA72V6E | TS4GSA72V6E |
| Wide Temp. (-40°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GLA72V6E-I | TS2GSA72V6E-I |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GLA72V6E-I | TS4GSA72V6E-I |

## DDR5-4800 ECC DIMM

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

## DDR5-6400 Registered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM |
|---|---|---|---|---|
| Standard Temp. (0°C~85°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V4E3 |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V4E3 |
| Wide Temp. (-40°C~85°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V4E3-I |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V4E3-I |

## DDR5-5600 Registered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM |
|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V6E |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V6E |
| Wide Temp. (-40°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V6E-I |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V6E-I |

## DDR5-4800 Registered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM |
|---|---|---|---|---|
| Standard Temp. (0°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V8E |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V8E |
| | 64GB | (4Gx4)x40 | 2Rx4 | TS8GAR80V8F-SAM |
| Wide Temp. (-40°C~95°C) | 16GB | (2Gx8)x10 | 1Rx8 | TS2GAR80V8E-I |
| | 32GB | (2Gx8)x20 | 2Rx8 | TS4GAR80V8E-I |

# DDR4


| Module Type | Long-DIMM | SO-DIMM |
|---|---|---|
| Speed | 3200/2666 MT/s | |
| Capacity | 2GB~64GB | |
| Voltage | 1.2V | |
| PCB Height | Standard: 1.23 inches<br>Very Low Profile: 0.74 inches | 1.18 inches |
| 30µ" PCB Gold Finger | Wide Temp. / ECC / Registered | |
| Anti-Sulfuration | Wide Temp. / ECC / Registered | |
| Operating Temperature | 0°C~95°C / -20°C~95°C / -40°C~95°C | |

## DDR4-3200 Unbuffered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 4GB | (512Mx16)x4 | 1Rx16 | TS512MLH64V2D2 | TS512MSH64V2D2 |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V2H2 | TS512MSH64V2H2 |
| | 8GB | (1Gx16)x4 | 1Rx16 | TS1GLH64V2G2 | TS1GSH64V2G2 |
| | | (1Gx8)x8 | 1Rx8 | TS1GLH64V2B2 | TS1GSH64V2B2 |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B2 | TS2GSH64V2B2 |
| | | (2Gx8)x8 | 1Rx8 | TS2GLH64V2E2 | TS2GSH64V2E2 |
| | | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B2-G | TS2GSH64V2B2-G |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E2 | TS4GSH64V2E2 |

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

## DDR4-3200 Unbuffered DIMM

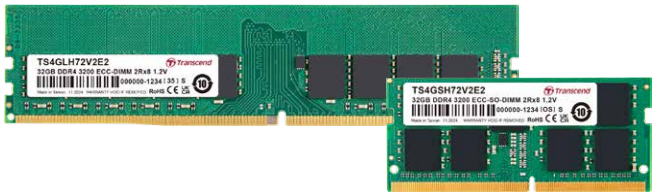
| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Standard Temp. (0°C~95°C) | 4GB | (512Mx16)x4 | 1Rx16 | TS512MLH64V2D4 | TS512MSH64V2D4 |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V2H4 | TS512MSH64V2H4 |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V2H-G | TS512MSH64V2H-G |
| | 8GB | (1Gx8)x8 | 1Rx8 | TS1GLH64V2B1 | TS1GSH64V2B1 |
| | | (1Gx8)x8 | 1Rx8 | TS1GLH64V2B4 | TS1GSH64V2B4 |
| | | (1Gx8)x8 | 1Rx8 | TS3200HLB-8G | TS3200HSB-8G |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B1 | TS2GSH64V2B1 |
| | | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B4 | TS2GSH64V2B4 |
| | | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B-G | TS2GSH64V2B-G |
| | | (1Gx8)x16 | 2Rx8 | TS3200HLB-16G | TS3200HSB-16G |
| | | (2Gx8)x8 | 1Rx8 | TS2GLH64V2E1 | TS2GSH64V2E1 |
| | | (2Gx8)x8 | 1Rx8 | TS2GLH64V2E4 | TS2GSH64V2E4 |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E1 | TS4GSH64V2E1 |
| | | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E4 | TS4GSH64V2E4 |
| | | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E-G | TS4GSH64V2E-G |
| | | (2Gx8)x16 | 2Rx8 | TS3200HLE-32G | TS3200HSE-32G |
| Wide Temp. (-40°C~95°C) | 4GB | (512Mx16)x4 | 1Rx16 | TS512MLH64V2D2-I | TS512MSH64V2D2-I |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V2H2-I | TS512MSH64V2H2-I |
| | 8GB | (1Gx16)x4 | 1Rx16 | TS1GLH64V2G2-I | TS1GSH64V2G2-I |
| | | (1Gx8)x8 | 1Rx8 | TS1GLH64V2B2-I | TS1GSH64V2B2-I |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V2B2-I | TS2GSH64V2B2-I |
| | | (2Gx8)x8 | 1Rx8 | TS2GLH64V2E2-I | TS2GSH64V2E2-I |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E2-I | TS4GSH64V2E2-I |
| | | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E4-I | TS4GSH64V2E4-I |
| Very Low Profile (0°C~95°C) | 4GB | (512Mx8)x8 | 1Rx8 | TS512MLH64V2HL | - |
| | 8GB | (1Gx8)x8 | 1Rx8 | TS1GLH64V2BL | - |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V2BL | - |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E2L | - |
| | | (2Gx8)x16 | 2Rx8 | TS4GLH64V2E2L-G | - |

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

## DDR4-2666 Unbuffered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Standard Temp. (0°C~95°C) | 2GB | (256Mx16)x4 | 1Rx16 | TS256MLH64V6X | TS256MSH64V6X |
| | 4GB | (512Mx16)x4 | 1Rx16 | TS512MLH64V6D | TS512MSH64V6D |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V6H | TS512MSH64V6H |
| | | (512Mx8)x8 | 1Rx8 | TS512MLH64V6H-G | TS512MSH64V6H-G |
| | | (512Mx8)x8 | 1Rx8 | TS2666HLH-4G | TS2666HSH-4G |
| | 8GB | (512Mx8)x16 | 2Rx8 | TS1GLH64V6H | TS1GSH64V6H |
| | | (1Gx8)x8 | 1Rx8 | TS1GLH64V6B | TS1GSH64V6B |
| | | (1Gx8)x8 | 1Rx8 | TS1GLH64V6B4 | TS1GSH64V6B4 |
| | | (1Gx8)x8 | 1Rx8 | TS2666HLB-8G | TS2666HSB-8G |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V6B | TS2GSH64V6B |
| | | (1Gx8)x16 | 2Rx8 | TS2666HLB-16G | TS2666HSB-16G |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V6E | TS4GSH64V6E |
| Wide Temp. (-40°C~95°C) | 2GB | (256Mx16)x4 | 1Rx16 | TS256MLH64V6X-I | TS256MSH64V6X-I |
| | 4GB | (512Mx16)x4 | 1Rx16 | TS512MLH64V6D-I | TS512MSH64V6D-I |
| | | (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°C~95°C) | 2GB | (256Mx16)x4 | 1Rx16 | TS256MLH64V6XL | - |
| | 4GB | (512Mx8)x8 | 1Rx8 | TS512MLH64V6HL | - |
| | 8GB | (1Gx8)x8 | 1Rx8 | TS1GLH64V6BL | - |
| | 16GB | (1Gx8)x16 | 2Rx8 | TS2GLH64V6BL | - |
| | 32GB | (2Gx8)x16 | 2Rx8 | TS4GLH64V6EL-G | - |

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



## DDR4-3200 ECC DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 4GB | (512Mx8)x9 | 1Rx8 | TS512MLH72V2H2 | TS512MSH72V2H2 |
| | 8GB | (512Mx8)x18 | 2Rx8 | TS1GLH72V2H2 | TS1GSH72V2H2 |
| | | (1Gx8)x9 | 1Rx8 | TS1GLH72V2B2 | TS1GSH72V2B2 |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GLH72V2B2 | TS2GSH72V2B2 |
| | | (2Gx8)x9 | 1Rx8 | TS2GLH72V2E2 | TS2GSH72V2E2 |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GLH72V2E2 | TS4GSH72V2E2 |
| Standard Temp. (0°C~95°C) | 4GB | (512Mx8)x9 | 1Rx8 | TS512MLH72V2H4 | TS512MSH72V2H4 |
| | 8GB | (1Gx8)x9 | 1Rx8 | TS1GLH72V2B4 | TS1GSH72V2B4 |
| | 16GB | (2Gx8)x9 | 1Rx8 | TS2GLH72V2E4 | TS2GSH72V2E4 |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GLH72V2E4 | TS4GSH72V2E4 |
| Wide Temp. (-40°C~95°C) | 4GB | (512Mx8)x9 | 1Rx8 | TS512MLH72V2H2-I | TS512MSH72V2H2-I |
| | 8GB | (512Mx8)x18 | 2Rx8 | TS1GLH72V2H2-I | TS1GSH72V2H2-I |
| | | (1Gx8)x9 | 1Rx8 | TS1GLH72V2B2-I | TS1GSH72V2B2-I |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GLH72V2B2-I | TS2GSH72V2B2-I |
| | | (2Gx8)x9 | 1Rx8 | TS2GLH72V2E2-I | TS2GSH72V2E2-I |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GLH72V2E2-I | TS4GSH72V2E2-I |
| Very Low Profile (0°C~95°C) | 8GB | (1Gx8)x9 | 1Rx8 | TS1GLH72V2BL | - |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GLH72V2BL | - |

## DDR4-2666 ECC DIMM

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

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


## DDR4-3200 Registered DIMM

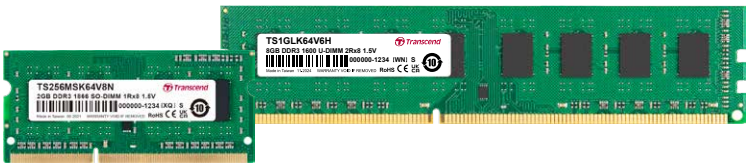
| | Capacity | Component Composition | Rank x Org. | Long-DIMM |
|---|---|---|---|---|
| Extended Temp. (-20°C~95°C) | 8GB | (1Gx8)x9 | 1Rx8 | TS1GHR72V2B2 |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GHR72V2B2 |
| | | (2Gx8)x9 | 1Rx8 | TS2GHR72V2E2 |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GHR72V2E2 |
| Standard Temp. (0°C~95°C) | 8GB | (1Gx8)x9 | 1Rx8 | TS1GHR72V2B4 |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GHR72V2B4 |
| | | (2Gx8)x9 | 1Rx8 | TS2GHR72V2E4 |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GHR72V2E4 |
| | | (2Gx4)x36 | 2Rx4 | TS4GHR72V2C-SAM |
| | 64GB | (4Gx4)x36 | 2Rx4 | TS8GHR72V2F2-SAM |
| Wide Temp. (-40°C~95°C) | 8GB | (1Gx8)x9 | 1Rx8 | TS1GHR72V2B2-I |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GHR72V2B2-I |
| | | (2Gx8)x9 | 1Rx8 | TS2GHR72V2E2-I |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GHR72V2E2-I |
| Very Low Profile (0°C~95°C) | 8GB | (1Gx8)x9 | 1Rx8 | TS1GHR72V2BL |
| | 16GB | (1Gx8)x18 | 2Rx8 | TS2GHR72V2BL |
| | | (2Gx8)x9 | 1Rx8 | TS2GHR72V2EL |
| | 32GB | (2Gx8)x18 | 2Rx8 | TS4GHR72V2EL |

## DDR4-2666 Registered DIMM

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

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

# DDR3

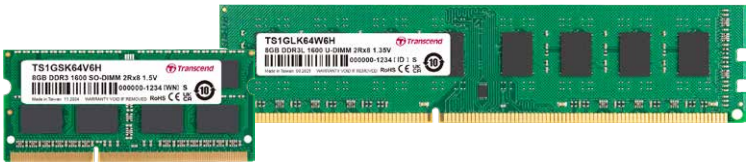



| Module Type | Long-DIMM | SO-DIMM |
|---|---|---|
| Speed | 1866/1600 MT/s | |
| Capacity | 1GB~8GB | |
| Voltage | Standard: 1.5V<br>Low Voltage: 1.35V | |
| PCB Height | Standard: 1.18 inches<br>Very Low Profile: 0.74 inches | 1.18 inches |
| 30µ" PCB Gold Finger | Wide Temp. / ECC / Registered | |
| Anti-Sulfuration | Wide Temp. / ECC / Registered | |
| Operating Temperature | 0°C~85°C / -40°C~85°C | |

## DDR3-1866 Unbuffered DIMM

| | Capacity | Component Composition | Rank x Org. | Long-DIMM | SO-DIMM |
|---|---|---|---|---|---|
| Low Voltage (0°C~85°C) | 2GB | (256Mx8)x8 | 1Rx8 | - | TS256MSK64W8N |
| | 4GB | (512Mx8)x8 | 1Rx8 | TS512MLK64W8H | TS512MSK64W8H |
| | 8GB | (512Mx8)x16 | 2Rx8 | - | TS1GSK64W8H |
| Low Voltage+ Wide Temp. (-40°C~85°C) | 4GB | (512Mx8)x8 | 1Rx8 | - | TS512MSK64W8H-I |
| | 8GB | (512Mx8)x16 | 2Rx8 | - | TS1GSK64W8H-I |

*DDR3 1333MT/s are also available.




## DDR3-1600 Unbuffered DIMM

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

*DDR3 1333MT/s are also available.


## DDR3-1600 ECC DIMM

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

## DDR3-1600 Registered DIMM

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

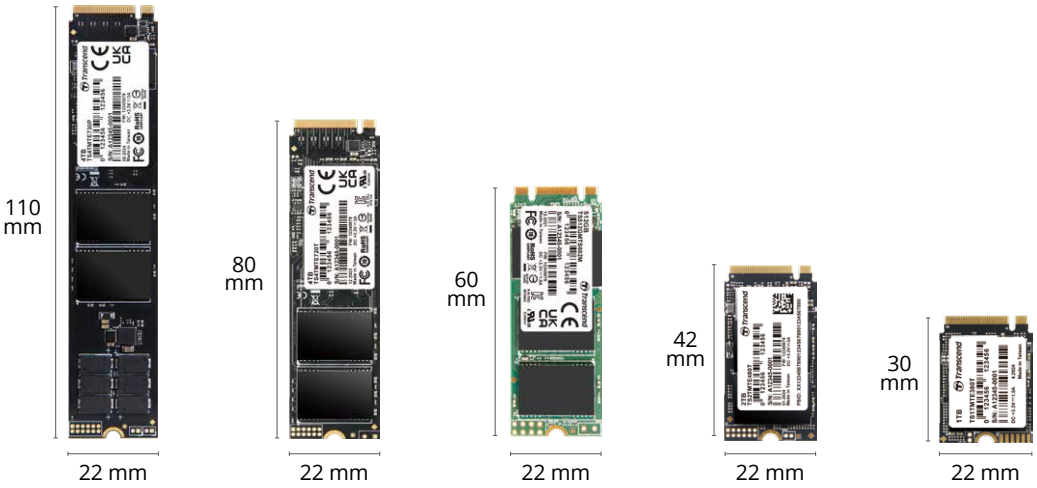
# SSD Solutions

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

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

# SSD Solutions

## M.2 22110/2280/2260/2242/2230




**Height= PCB+Top+Bottom**

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

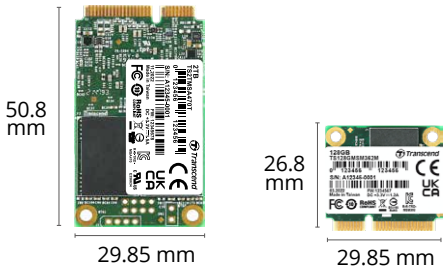

| Type ID | Top (Max.) | Bottom (Max.) |
|---|---|---|
| S2 | 1.35 mm | - |
| S3 | 1.50 mm | - |
| D2 | 1.35 mm | 1.35 mm |
| D5 | 1.50 mm | 1.50 mm |

(S: Single Sided, D: Double Sided)

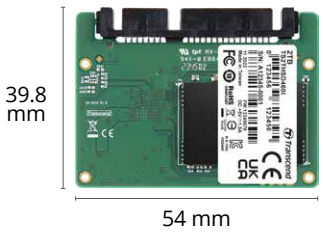
## U.2 / 2.5”



## mSATA / mSATA mini




## Half-Slim



## Data Center SSD

| Interface | Form Factor | Model | DRAM | Capacity | Feature |
|---|---|---|---|---|---|
| **PCIe Gen4** | U.2 | ETD410T | ● | 3.84TB~7.68TB | eTLC, Enterprise SSD |
| **SATA III** | 2.5" | ETD210T | ● | 480GB~3.84TB | eTLC, Enterprise SSD |

## 112-Layer 3D NAND Flash

| Interface | Form Factor | Model | DRAM | Capacity | Feature |
|---|---|---|---|---|---|
| **PCIe Gen4** | U.2 | UTE210T | ● | 512GB~8TB | PLP & 8CH |
| | M.2 22110 | MTE730P | ● | 512GB~4TB | PLP & 8CH |
| | M.2 2280 | MTE720T | ● | 512GB~4TB | 8CH |
| | | MTE760T | - | 256GB~2TB | TCG Opal |
| | | MTE712A | ● | 128GB~2TB | TCG Opal |
| | | MTE712P | ● | 128GB~2TB | TCG Opal & PLP |
| | | MTE560P | ● | 40GB~640GB | TCG Opal, PLP & SLC Mode |
| | | MTE560I | ● | 40GB~640GB | TCG Opal & SLC Mode |
| | M.2 2242 | MTE480T | - | 256GB~2TB | TCG Opal |
| | M.2 2230 | MTE380T | - | 256GB~1TB | TCG Opal |
| **PCIe Gen3** | M.2 2280 | MTE672A | - | 128GB~2TB | TCG Opal |
| | M.2 2242 | MTE470A | - | 128GB~2TB | TCG Opal |
| | | MTE460T | - | 128GB~1TB | |
| | M.2 2230 | MTE370T | - | 256GB~1TB | |
| **SATA III** | M.2 2280 | MTS970T | ● | 128GB~4TB | |
| | | MTS960T | - | 64GB~2TB | |
| | | MTS970A | ● | 128GB~4TB | TCG Opal |
| | | MTS970P | ● | 128GB~1TB | PLP |
| | | MTS260I | ● | 40GB~1280GB | SLC Mode |
| | | MTS250I | - | 20GB~640GB | SLC Mode |
| | M.2 2242 | MTS570T | ● | 128GB~1TB | |
| | | MTS560T | - | 64GB~2TB | |
| | | MTS570A | ● | 128GB~1TB | TCG Opal |
| | | MTS570P | ● | 128GB~512GB | PLP |
| | | MTS210I | ● | 40GB~320GB | SLC Mode |
| | | MTS200I | - | 20GB~320GB | SLC Mode |
| | 2.5" | SSD475P | ● | 2TB~8TB | PLP |
| | | SSD470N | ● | 1TB~4TB | Direct Write |
| | | SSD472K | ● | 128GB~4TB | |
| | | SSD460K | - | 64GB~2TB | |
| | | SSD470A | ● | 128GB~4TB | TCG Opal |
| | | SSD470P | ● | 128GB~1TB | PLP |
| | | SSD550I | ● | 40GB~1280GB | SLC Mode |
| | mSATA | MSA470T | ● | 128GB~1TB | |
| | | MSA460T | - | 64GB~1TB | |
| | | MSA470A | ● | 128GB~1TB | TCG Opal |
| | | MSA470P | ● | 128GB~1TB | PLP |
| | | MSA520I | ● | 40GB~320GB | SLC Mode |
| | Half-Slim | HSD460I | - | 64GB~2TB | |

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

## MLC NAND Flash

| Interface | Form Factor | Model | DRAM | Capacity | Feature |
|---|---|---|---|---|---|
| SATA III | M.2 2280 | MTS810M | ● | 32GB~256GB | |
| | | MTS802M | ● | 32GB~1TB | |
| | | MTS862K | ● | 16GB~32GB | SLC Mode |
| | M.2 2260 | MTS602M | ● | 32GB~512GB | |
| | M.2 2242 | MTS410M | ● | 16GB~128GB | |
| | | MTS402M | ● | 16GB~512GB | |
| | | MTS400P | ● | 32GB~64GB | PLP |
| | | MTS462K | ● | 8GB~16GB | SLC Mode |
| | 2.5" | SSD422K | ● | 32GB~1TB | |
| | | SSD420K | ● | 16GB~1TB | |
| | | SSD510K | ● | 16GB~128GB | SLC Mode |
| | mSATA | MSA380M | ● | 16GB~256GB | |
| | | MSA372M | ● | 16GB~1TB | |
| | mSATA mini | MSM362M | - | 16GB~128GB | |
| | Half-Slim | HSD372M | ● | 16GB~128GB | |

**Standard Temp.: 0°C~70°C**
**Extended Temp.: -20°C~75°C**
**Wide Temp.: -40°C~85°C**

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

# Data Center SSD


Transcend's Enterprise SSD designed for read-intensive workloads. Boasting enterprise 3D NAND flash, and a DRAM cache, it delivers fast data transfer with superior Quality of Service, ultra-low latency, and exceptional endurance. The integrated Power Loss Protection ensures data integrity during power fluctuations.

| | Enterprise SSD | Client SSD |
|---|---|---|
| Workload | **Enterprise** | **Client** |
| NAND Endurance | High (PE: 7~10K) | Low (PE: 1~3K) |
| Reliability | Featured with PLP, TCG Opal & Error Handling | Simple ECC function |
| Latency | 0.5 ms (QoS=99.9%, ETD210T) | 5.7 ms (QoS=99.6%, SSD452K) |

| Model | ETD410T | ETD210T |
|---|---|---|
| Form Factor | U.2 | 2.5" |
| Interface | PCIe Gen4 x4 (8CH) | SATA III 6Gb/s |
| Capacity | 3.84TB~7.68TB | 480GB~3.84TB |
| Operating Temperature | 0°C~70°C | |
| DRAM Cache | ● | ● |
| Power Loss Protection (PLP) | ● | ● |
| Performance (Sequential R/W*) | 7,400/5,050 MB/s | 530/510 MB/s |
| Endurance (TBW*) | 14,016 TB | 7,008 TB |
| Reliability (MTBF*) | 2,000,000 hours | 2,000,000 hours |
| DWPD* | 1 (5 years) | |
| Dimensions | 100.45 x 69.85 x 15 mm | 100 x 69.85 x 7 mm |
| Ordering Information | TS3T84ETD410T<br>⋮<br>TS7T68ETD410T | TS480GETD210T<br>⋮<br>TS3T84ETD210T |

**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.
TBW and DWPD are based on the JEDEC JESD219 Enterprise Workload standard.

# U.2 SSD

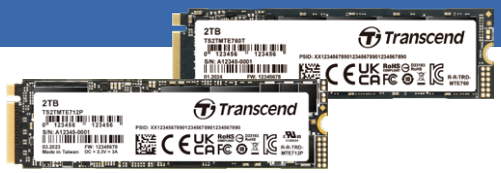

| Model | **UTE210T** |
|---|---|
| Interface | PCIe Gen4 x4 (8CH) |
| Capacity | 512GB~8TB |
| Operating Temperature | -20°C~75°C |
| DRAM Cache | ● |
| Power Loss Protection (PLP) | ● |
| Performance (Sequential R/W*) | 7,400/6,600 MB/s |
| Endurance (TBW*) | 11,520 TB |
| Reliability (MTBF*) | 3,000,000 hours |
| DWPD* | 1.32 (3 years) |
| Dimensions | 100.45 x 69.85 x 7 mm |
| Ordering Information | TS512GUTE210T<br>⋮<br>TS8TUTE210T |

# PCIe Gen4 M.2 22110

| Model | **MTE730P** |
|---|---|
| Interface | PCIe Gen4 x4 (8CH) |
| Capacity | 512GB~4TB |
| Operating Temperature | -40°C~85°C |
| DRAM Cache | ● |
| Power Loss Protection (PLP) | ● |
| Corner Bond | ● |
| 30μ" PCB Gold Finger | ● |
| Performance (Sequential R/W*) | 7,500/6,700 MB/s |
| Endurance (TBW*) | 5,920 TB |
| Reliability (MTBF*) | 3,000,000 hours |
| DWPD* | 1.35 (3 years) |
| Form Factor | 22110-D5-M |
| Dimensions | 110 x 22 x 3.88 mm |
| Ordering Information | TS512GMTE730P<br>⋮<br>TS4TMTE730P |

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

# PCIe Gen4 M.2 2280




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

| Model | MTE712P | MTE560P | MTE560I |
|---|---|---|---|
| Interface | | PCIe Gen4 x4 | |
| Capacity | 128GB~2TB | 40GB~640GB | 40GB~640GB |
| Operating Temperature | | -40°C~85°C | |
| DRAM Cache | ● | ● | ● |
| TCG Opal | ● | ● | ● |
| Power Loss Protection (PLP) | ● | ● | - |
| SLC Mode | - | ● | ● |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | ● |
| Performance (Sequential R/W*) | 3,800/3,100 MB/s | 3,800/3,200 MB/s | 3,800/3,200 MB/s |
| Endurance (TBW*) | 4,320 TB | 38,000 TB | 38,000 TB |
| Reliability (MTBF*) | | 3,000,000 hours | |
| DWPD* | 1.97 (3 years) | 54.2 (3 years) | 54.2 (3 years) |
| Form Factor | 2280-D5-M | 2280-D5-M | 2280-D2-M |
| Dimensions | 80 x 22 x 3.88 mm | 80 x 22 x 3.88 mm | 80 x 22 x 3.58 mm |
| Ordering Information | TS128GMTE712P<br>⋮<br>TS2TMTE712P | TS40GMTE560P<br>⋮<br>TS640GMTE560P | TS40GMTE560I<br>⋮<br>TS640GMTE560I |

Graphene heatsink

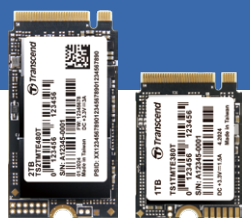

Fin-type heatsink

## Optional Graphene or Fin-type Heatsink

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

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

# PCIe Gen4 M.2 2242/2230



| Model | MTE480T | MTE380T |
|---|---|---|
| Interface | PCIe Gen4 x4 | PCIe Gen4 x4 |
| Capacity | 256GB~2TB | 256GB~1TB |
| Operating Temperature | -20°C~75°C | -20°C~75°C |
| DRAM Cache | - | - |
| TCG Opal | ● | ● |
| Corner Bond | ● | ● |
| 30µ" PCB Gold Finger | ● | ● |
| Performance (Sequential R/W*) | 5,000/4,100 MB/s | 5,000/3,300 MB/s |
| Endurance (TBW*) | 2,640 TB | 1,320 TB |
| Reliability (MTBF*) | 3,000,000 hours | 3,000,000 hours |
| DWPD* | 1.2 (3 years) | 1.2 (3 years) |
| Form Factor | 2242-S2-M | 2230-S3-M |
| Dimensions | 42 x 22 x 2.23 mm | 30 x 22 x 2.38 mm |
| Ordering Information | TS256GMTE480T<br>⋮<br>TS2TMTE480T | TS256GMTE380T<br>⋮<br>TS1TMTE380T |

# PCIe Gen3 M.2 2280/2242/2230

| Model | MTE672A | MTE470A | MTE460T | MTE370T |
|---|---|---|---|---|
| Interface | PCIe Gen3 x4 | PCIe Gen3 x4 | PCIe Gen3 x2 | PCIe Gen3 x4 |
| Capacity | 128GB~2TB | 128GB~2TB | 128GB~1TB | 256GB~1TB |
| Operating Temperature | -20°C~75°C | | | |
| DRAM Cache | - | - | - | - |
| TCG Opal | ● | ● | - | - |
| Corner Bond | ● | ● | ● | ● |
| 30µ" PCB Gold Finger | ● | ● | ● | ● |
| Performance (Sequential R/W*) | 2,000/1,700 MB/s | 2,000/1,700 MB/s | 1,700/1,500 MB/s | 2,000/1,700 MB/s |
| Endurance (TBW*) | 1,920 TB | 1,800 TB | 900 TB | 960 TB |
| Reliability (MTBF*) | 3,000,000 hours | | | |
| DWPD* | 0.86 (3 years) | 0.86 (3 years) | 0.86 (3 years) | 0.88 (3 years) |
| Form Factor | 2280-S2-M | 2242-S2-M | 2242-D2-B-M | 2230-S3-M |
| Dimensions | 80 x 22 x 2.23 mm | 42 x 22 x 3.58 mm | 42 x 22 x 3.58 mm | 30 x 22 x 2.38 mm |
| Ordering Information | TS128GMTE672A<br>⋮<br>TS2TMTE672A | TS128GMTE470A<br>⋮<br>TS2TMTE470A | TS128GMTE460T<br>⋮<br>TS1TMTE460T | TS256GMTE370T<br>⋮<br>TS1TMTE370T |

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

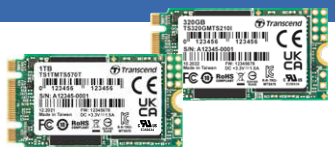
# SATA III M.2 2280


| Model | MTS970T | MTS960T | MTS970A |
|---|---|---|---|
| Interface | | SATA III 6Gb/s | |
| Capacity | 128GB~4TB | 64GB~2TB | 128GB~4TB |
| Operating Temperature | | -20°C~75°C | |
| DRAM Cache | ● | - | ● |
| TCG Opal | - | - | ● |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | ● |
| Performance (Sequential R/W*) | 560/520 MB/s | 560/500 MB/s | 560/500 MB/s |
| Endurance (TBW*) | 9,680 TB | 4,376 TB | 9,680 TB |
| Reliability (MTBF*) | | 3,000,000 hours | |
| DWPD* | 2.21 (3 years) | 1.95 (3 years) | 2.21 (3 years) |
| Form Factor | 2280-D2-B-M | 2280-S2-B-M | 2280-D2-B-M |
| Dimensions | 80 x 22 x 3.58 mm | 80 x 22 x 2.23 mm | 80 x 22 x 3.58 mm |
| Ordering Information | TS128GMTS970T<br>⋮<br>TS4TMTS970T | TS64GMTS960T<br>⋮<br>TS2TMTS960T | TS128GMTS970A<br>⋮<br>TS4TMTS970A |

| Model | MTS970P | MTS260I | MTS250I |
|---|---|---|---|
| Interface | | SATA III 6Gb/s | |
| Capacity | 128GB~1TB | 40GB~1280GB | 20GB~640GB |
| Operating Temperature | | -40°C~85°C | |
| DRAM Cache | ● | ● | - |
| Power Loss Protection (PLP) | ● | - | - |
| SLC Mode | - | ● | ● |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | ● |
| Performance (Sequential R/W*) | 560/520 MB/s | 560/520 MB/s | 560/500 MB/s |
| Endurance (TBW*) | 2,400 TB | 46,000 TB | 22,000 TB |
| Reliability (MTBF*) | | 3,000,000 hours | |
| DWPD* | 2.14 (3 years) | 52.3 (3 years) | 44.6 (3 years) |
| Form Factor | 2280-D5-B-M | 2280-D2-B-M | 2280-S2-B-M |
| Dimensions | 80 x 22 x 3.88 mm | 80 x 22 x 3.58 mm | 80 x 22 x 2.23 mm |
| Ordering Information | TS128GMTS970P<br>⋮<br>TS1TMTS970P | TS40GMTS260I<br>⋮<br>TS1280GMTS260I | TS20GMTS250I<br>⋮<br>TS640GMTS250I |

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

# SATA III M.2 2242



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

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

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

# SATA III 2.5”


| Model | SSD475P | SSD470N | SSD472K | SSD460K |
|---|---|---|---|---|
| Interface | SATA III 6Gb/s | | | |
| Capacity | 2TB~8TB | 1TB~4TB | 128GB~4TB | 64GB~2TB |
| Operating Temperature | -20°C~75°C | | | |
| DRAM Cache | ● | ● | ● | - |
| Power Loss Protection (PLP) | ● | - | - | - |
| Performance (Sequential R/W*) | 550/520 MB/s | 560/510 MB/s | 560/520 MB/s | 560/500 MB/s |
| Endurance (TBW*) | TBD | 7,600 TB | 9,680 TB | 4,376 TB |
| Reliability (MTBF*) | 3,000,000 hours | | | |
| DWPD* | TBD | 1.91 (3 years) | 2.16 (3 years) | 1.95 (3 years) |
| Dimensions | 100.45 x 69.85 x 6.8 mm | | | |
| Ordering Information | TS2TSSD475P<br>⋮<br>TS8TSSD475P | TS1TSSD470N<br>⋮<br>TS4TSSD470N | TS128GSSD472K<br>⋮<br>TS4TSSD472K | TS64GSSD460K<br>⋮<br>TS2TSSD460K |

| Model | SSD470A | SSD470P | SSD550I |
|---|---|---|---|
| Interface | SATA III 6Gb/s | | |
| Capacity | 128GB~4TB | 128GB~1TB | 40GB~1280GB |
| Operating Temperature | -20°C~75°C | -20°C~75°C | -40°C~85°C |
| DRAM Cache | ● | ● | ● |
| TCG Opal | ● | - | - |
| Power Loss Protection (PLP) | - | ● | - |
| SLC Mode | - | - | ● |
| Performance (Sequential R/W*) | 560/500 MB/s | 560/520 MB/s | 560/520 MB/s |
| Endurance (TBW*) | 9,448 TB | 2,420 TB | 46,000 TB |
| Reliability (MTBF*) | 3,000,000 hours | | |
| DWPD* | 2.21 (3 years) | 2.16 (3 years) | 52.3 (3 years) |
| Dimensions | 100.45 x 69.85 x 6.8 mm | | |
| Ordering Information | TS128GSSD470A<br>⋮<br>TS4TSSD470A | TS128GSSD470P<br>⋮<br>TS1TSSD470P | TS40GSSD550I<br>⋮<br>TS1280GSSD550I |

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

# SATA III mSATA

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

# SATA III mSATA/Half-Slim

| Model | MSA470P | MSA520I | HSD460I |
|---|---|---|---|
| Interface | | SATA III 6Gb/s | |
| Capacity | 128GB~1TB | 40GB~320GB | 64GB~2TB |
| Operating Temperature | | -40°C~85°C | |
| DRAM Cache | ● | ● | - |
| Power Loss Protection (PLP) | ● | - | - |
| SLC Mode | - | ● | - |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | - |
| Performance (Sequential R/W*) | 560/520 MB/s | 560/520 MB/s | 560/500 MB/s |
| Endurance (TBW*) | 2,400 TB | 11,500 TB | 3,740 TB |
| Reliability (MTBF*) | | 3,000,000 hours | |
| DWPD* | 2.19 (3 years) | 52.3 (3 years) | 1.75 (3 years) |
| Form Factor | MO-300A | MO-300A | MO-297 |
| Dimensions | 50.8 x 29.85 x 4.85 mm | 50.8 x 29.85 x 4.85 mm | 54 x 39.8 x 4 mm |
| Ordering Information | TS128GMSA470P<br>⋮<br>TS1TMSA470P | TS40GMSA520I<br>⋮<br>TS320GMSA520I | TS64GHSD460I<br>⋮<br>TS2THSD460I |

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

# SATA III M.2 2280

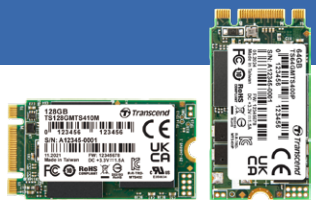
| Model | MTS810M | MTS802M | MTS862K |
|---|---|---|---|
| Interface | | SATA III 6Gb/s | |
| Capacity | 32GB~256GB | 32GB~1TB | 16GB~32GB |
| Operating Temperature | | 0°C~70°C | |
| DRAM Cache | ● | ● | ● |
| SLC Mode | - | - | ● |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | ● |
|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

# SATA III M.2 2260

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

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

# SATA III M.2 2242



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

| Model | MTS400P | MTS462K |
|---|---|---|
| Interface | SATA III 6Gb/s | |
| Capacity | 32GB~64GB | 8GB~16GB |
| Operating Temperature | -40°C~85°C | 0°C~70°C |
| DRAM Cache | ● | ● |
| Power Loss Protection (PLP) | ● | - |
| SLC Mode | - | ● |
| Corner Bond | ● | ● |
| 30μ" PCB Gold Finger | ● | ● |
| Performance (Sequential R/W*) | 335/109 MB/s | 300/150 MB/s |
| Endurance (TBW*) | 180 TB | 260 TB |
| Reliability (MTBF*) | 2,500,000 hours | 3,000,000 hours |
| DWPD* | 2 (3 years) | 15.2 (3 years) |
| Form Factor | 2242-D5-B-M | 2242-D2-B-M |
| Dimensions | 42 x 22 x 3.88 mm | 42 x 22 x 3.58 mm |
| Ordering Information | TS32GMTS400P<br>TS64GMTS400P | TS8GMTS462K<br>TS16GMTS462K |

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

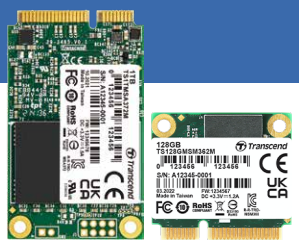
# SATA III 2.5”


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

| Model | SSD510K |
|---|---|
| Interface | SATA III 6Gb/s |
| Capacity | 16GB~128GB |
| Operating Temperature | 0°C~70°C |
| DRAM Cache | ● |
| Power Loss Protection (PLP) | - |
| SLC Mode | ● |
| Performance (Sequential R/W*) | 530/440 MB/s |
| Endurance (TBW*) | 2,840 TB |
| Reliability (MTBF*) | 1,500,000 hours |
| DWPD* | 15.2 (3 years) |
| Dimensions | 100.45 x 69.85 x 6.8 mm |
| Ordering Information | TS16GSSD510K<br>⋮<br>TS128GSSD510K |

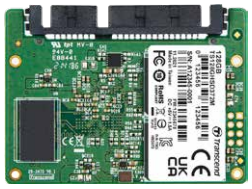
*Value varies by capacity, user hardware, system configuration, and calculation method.

# SATA III mSATA/mSATA mini



| Model | MSA380M | MSA372M | MSM362M |
|---|---|---|---|
| Interface | | SATA III 6Gb/s | |
| Capacity | 16GB~256GB | 16GB~1TB | 16GB~128GB |
| Operating Temperature | | 0°C~70°C | |
| DRAM Cache | ● | ● | - |
| Corner Bond | ● | ● | ● |
| 30μ" PCB Gold Finger | ● | ● | ● |
| Performance (Sequential R/W*) | 550/420 MB/s | 550/450 MB/s | 520/220 MB/s |
| Endurance (TBW*) | 740 TB | 2,360 TB | 168 TB |
| Reliability (MTBF*) | | 2,500,000 hours | |
| DWPD* | 2.6 (3 years) | 2.6 (3 years) | 1.19 (3 years) |
| Form Factor | MO-300A | MO-300A | MO-300B |
| Dimensions | 50.8 x 29.85 x 4.85 mm | 50.8 x 29.85 x 4.85 mm | 26.8 x 29.85 x 3.85 mm |
| Ordering Information | TS16GMSA380M<br>⋮<br>TS256GMSA380M | TS16GMSA372M<br>⋮<br>TS1TMSA372M | TS16GMSA372M<br>⋮<br>TS1TMSA372M |

# SATA III Half-Slim

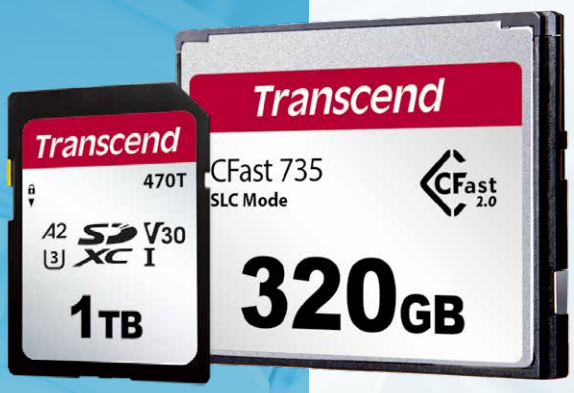


| Model | HSD372M |
|---|---|
| Interface | SATA III 6Gb/s |
| Capacity | 16GB~128GB |
| Operating Temperature | 0°C~70°C |
| DRAM Cache | ● |
| Corner Bond | ● |
| 30μ" PCB Gold Finger | - |
| Performance (Sequential R/W*) | 530/200 MB/s |
| Endurance (TBW*) | 360 TB |
| Reliability (MTBF*) | 2,500,000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

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

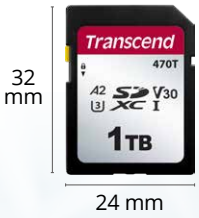
# Memory Cards

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



# Memory Cards

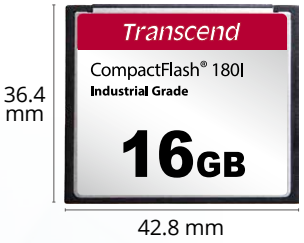
SD



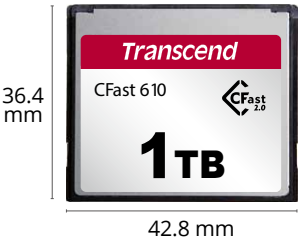

microSD


CFexpress


CompactFlash



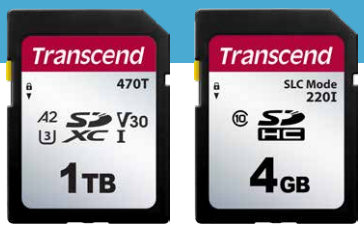

CFast




## Product Line

| Form Factor | Model | Flash Type | Capacity | Operating Temperature |
|---|---|---|---|---|
| SD | SDC470T / SDC470I | 218-layer 3D TLC | 128GB~1TB | -25°C~85°C / -40°C~85°C |
| | SDC460T / SDC460I | 112-layer 3D TLC | 64GB~1TB | -25°C~85°C / -40°C~85°C |
| | SDC240I | 112-layer 3D TLC (SLC Mode) | 20GB~160GB | -40°C~85°C |
| | SDC410M | MLC | 8GB~32GB | -25°C~85°C |
| | SDC400I | | 8GB~16GB | -40°C~85°C |
| | SDC220I | MLC (SLC Mode) | 128MB~4GB | -40°C~85°C |
| microSD | USD470T / USD470I | 218-layer 3D TLC | 128GB~1TB | -25°C~85°C / -40°C~85°C |
| | USD465T / USD465I | 162-layer 3D TLC | 64GB / 1TB | -25°C~85°C / -40°C~85°C |
| | USD460T / USD460I | 112-layer 3D TLC | 64GB~512GB | -25°C~85°C / -40°C~85°C |
| | USD240I | 112-layer 3D TLC (SLC Mode) | 20GB~160GB | -40°C~85°C |
| | USD410M | MLC | 8GB~32GB | -25°C~85°C |
| | USD400I | | 8GB~16GB | -40°C~85°C |
| | USD220I | MLC (SLC Mode) | 2GB~16GB | -40°C~85°C |
| CFexpress | CFE900 | 112-layer 3D TLC | 256GB~1TB | -10°C~70°C |
| | CFE860 | 112-layer 3D TLC (SLC Mode) | 80GB~320GB | -10°C~70°C |
| CompactFlash | CF170 | MLC | 8GB~64GB | -25°C~85°C |
| | CF180 / CF180I | MLC (SLC Mode) | 128MB~16GB | -25°C~85°C / -40°C~85°C |
| Cfast | CFX610 / CFX610I | 112-layer 3D TLC | 64GB~1TB | -5°C~70°C / -40°C~85°C |
| | CFX735 / CFX735I | 112-layer 3D TLC (SLC Mode) | 20GB~320GB | -5°C~70°C / -40°C~85°C |
| | CFX602 / CFX602I | MLC | 8GB~256GB | -5°C~70°C / -40°C~85°C |
| | CFX722I | MLC (SLC Mode) | 4GB~128GB | -40°C~85°C |

# SD Cards



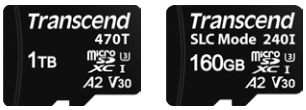

| Model | SDC470T / SDC470I | SDC460T / SDC460I | SDC240I |
|---|---|---|---|
| Flash | 218-layer 3D TLC | 112-layer 3D TLC | 112-layer 3D TLC (SLC Mode) |
| Capacity | 128GB~1TB | 64GB~1TB | 20GB~160GB |
| Operating Temperature | -25°C~85°C / -40°C~85°C | -25°C~85°C / -40°C~85°C | -40°C~85°C |
| Performance (Sequential R/W*) | 210/170 MB/s | 100/85 MB/s | 100/85 MB/s |
| Endurance (TBW*) | 2,660 TB | 2,660 TB | 13,524 TB |
| Standard | SD 6.1 | SD 6.1/5.1 | SD 6.1 |
| Connector | | 9 pin | |
| Dimensions | | 24 x 32 x 2.1 mm | |
| Ordering Information | TS128GSDC470T/I<br>⋮<br>TS1TSDC470T/I | TS64GSDC460T/I<br>⋮<br>TS1TSDC460T/I | TS20GSDC240I<br>⋮<br>TS160GSDC240I |

| Model | SDC410M | SDC400I | SDC220I |
|---|---|---|---|
| Flash | MLC | MLC | MLC (SLC Mode) |
| Capacity | 8GB~32GB | 8GB~16GB | 128MB~4GB |
| Operating Temperature | -25°C~85°C | -40°C~85°C | -40°C~85°C |
| Performance (Sequential R/W*) | 95/30 MB/s | 75/33 MB/s | 22/20 MB/s |
| Endurance (TBW*) | 86 TB | 32 TB | 66 TB |
| Standard | SD 5.1/3.0 | SD 3.01 | SD 3.01/2.0 |
| Connector | | 9 pin | |
| Dimensions | | 24 x 32 x 2.1 mm | |
| Ordering Information | TS8GSDC410M<br>⋮<br>TS32GSDC410M | TS8GSDC400I<br>TS16GSDC400I | TS128MSDC220I<br>⋮<br>TS4GSDC220I |

**R/W: Read/Write**
**TBW: Terabytes Written**

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

# microSD Cards

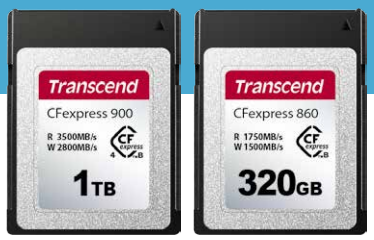



| Model | USD470T | USD465T / USD465I | USD460T / USD460I |
|---|---|---|---|
| Flash | 218-layer 3D TLC | 162-layer 3D TLC | 112-layer 3D TLC |
| Capacity | 128GB~1TB | 64GB / 1TB | 64GB~512GB |
| Operating Temperature | -25°C~85°C / -40°C~85°C | -25°C~85°C / -40°C~85°C | -25°C~85°C / -40°C~85°C |
| Performance (Sequential R/W*) | 210/170 MB/s | 100/80 MB/s | 100/80 MB/s |
| Endurance (TBW*) | 2,660 TB | 2,660 TB | 1,343 TB |
| Standard | SD 6.1 | SD 6.1 | SD 6.1/5.1 |
| Connector | 8 pin | | |
| Dimensions | 11 x 15 x 1 mm | | |
| Ordering Information | TS128GUSD470T/I<br>⋮<br>TS1TUSD470T/I | TS64GUSD465T/I<br>TS1TUSD465T/I | TS64GUSD460T/I<br>⋮<br>TS512GUSD460T/I |

| Model | USD240I | USD410M | USD400I | USD220I |
|---|---|---|---|---|
| Flash | 112-layer 3D TLC<br>(SLC Mode) | MLC | MLC | MLC<br>(SLC Mode) |
| Capacity | 20GB~160GB | 8GB~32GB | 8GB~16GB | 2GB~16GB |
| Operating Temperature | -40°C~85°C | -25°C~85°C | -40°C~85°C | -40°C~85°C |
| Performance (Sequential R/W*) | 100/80 MB/s | 95/50 MB/s | 95/70 MB/s | 80/45 MB/s |
| Endurance (TBW*) | 13,526 TB | 86 TB | 30 TB | 300 TB |
| Standard | SD 6.1 | SD 5.1/3.0 | SD 3.01 | SD 3.01/2.0 |
| Connector | 8 pin | | | |
| Dimensions | 11 x 15 x 1 mm | | | |
| Ordering Information | TS20GUSD240I<br>⋮<br>TS160GUSD240I | TS8GUSD410M<br>⋮<br>TS32GUSD410M | TS8GUSD400I<br>TS16GUSD400I | TS2GUSD220I<br>⋮<br>TS16GUSD220I |

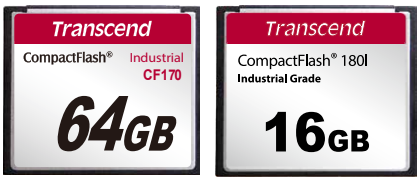
*Value varies by capacity, user hardware, system configuration, and calculation method.

# CFexpress Cards




| Model | CFE900 | CFE860 |
|---|---|---|
| Flash | 112-layer 3D TLC | 112-layer 3D TLC (SLC Mode) |
| Capacity | 256GB~1TB | 80GB~320GB |
| Operating Temperature | -10°C~70°C | |
| Performance (Sequential R/W*) | 3,500/2,800 MB/s | 1,750/1,500 MB/s |
| Endurance (TBW*) | 2,240 TB | 11,500 TB |
| Standard | CFexpress Type B | |
| Dimensions | 38.5 x 29.6 x 3.8 mm | |
| Ordering Information | TS256GCFE900<br>⋮<br>TS1TCFE900 | TS80GCFE860<br>⋮<br>TS320GCFE860 |

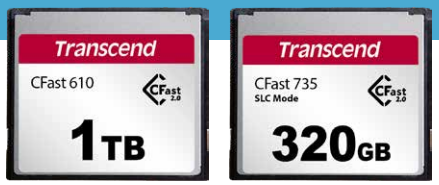
# CompactFlash Cards




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

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

# CFast Cards



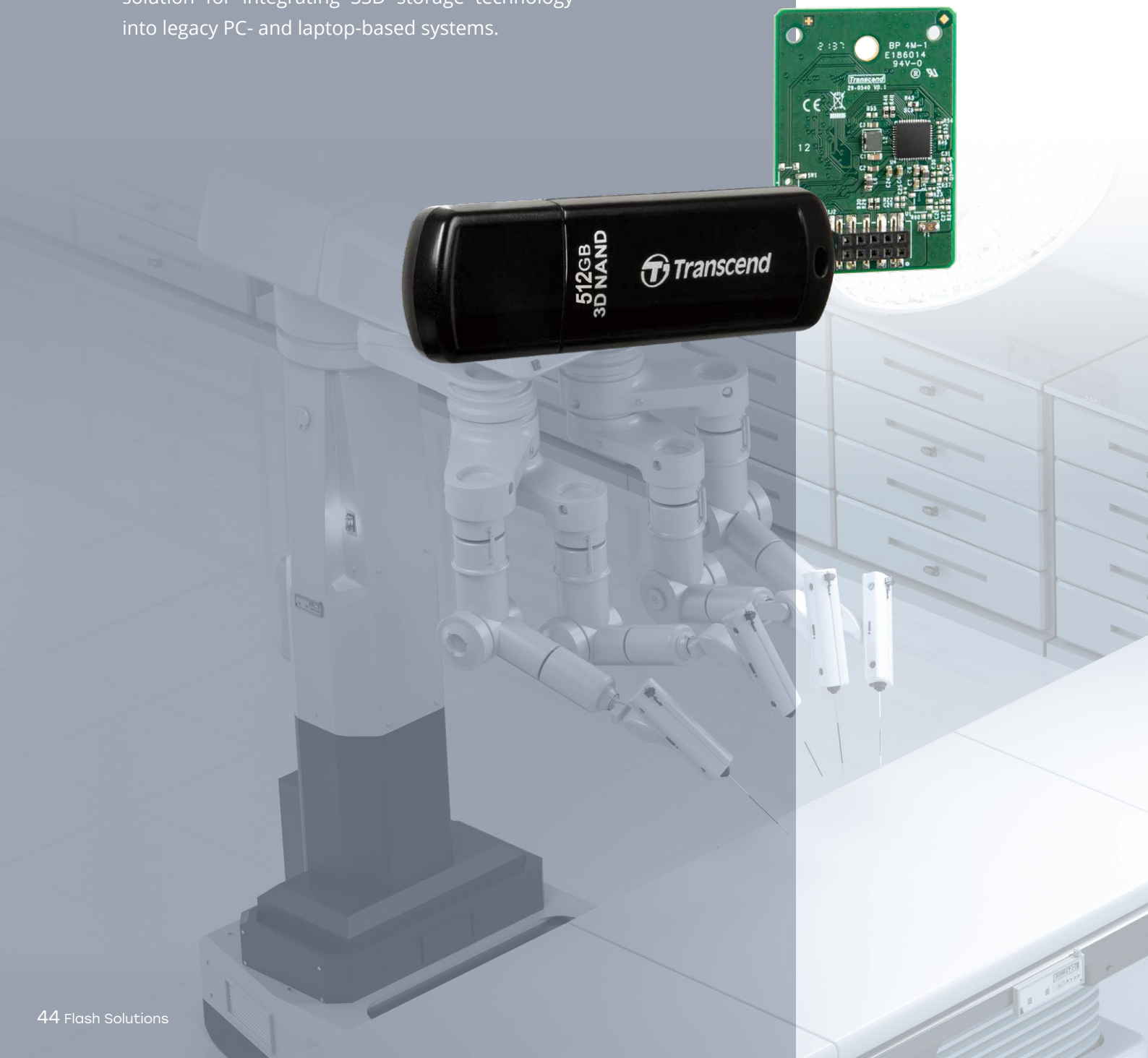

| Model | CFX610 | CFX610I | CFX735 | CFX735I |
|---|---|---|---|---|
| Flash | 112-layer 3D TLC | 112-layer 3D TLC | 112-layer 3D TLC (SLC Mode) | 112-layer 3D TLC (SLC Mode) |
| Capacity | 64GB~1TB | 64GB~1TB | 20GB~320GB | 20GB~320GB |
| Operating Temperature | -5°C~70°C | -40°C~85°C | -5°C~70°C | -40°C~85°C |
| Performance (Sequential R/W*) | 550/520 MB/s | 550/520 MB/s | 550/520 MB/s | 550/520 MB/s |
| Endurance (TBW*) | 1,580 TB | 1,580 TB | 18,000 TB | 18,000 TB |
| Standard | SATA III 6Gb/s | | | |
| Connector | 24 pin | | | |
| Dimensions | 42.8 x 36.4 x 3.3 mm | | | |
| Ordering Information | TS64GCFX610 ⋮ TS1TCFX610 | TS64GCFX610I ⋮ TS1TCFX610I | TS20GCFX735 ⋮ TS320GCFX735 | TS20GCFX735I ⋮ TS320GCFX735I |

| Model | CFX602 | CFX602I | CFX722I |
|---|---|---|---|
| Flash | MLC | MLC | MLC (SLC Mode) |
| Capacity | 8GB~256GB | 8GB~256GB | 4GB~128GB |
| Operating Temperature | -5°C~70°C | -40°C~85°C | -40°C~85°C |
| Performance (Sequential R/W*) | 510/340 MB/s | 510/340 MB/s | 540/425 MB/s |
| Endurance (TBW*) | 360 TB | 360 TB | 1,800 TB |
| Standard | SATA III 6Gb/s | | |
| Connector | 24 pin | | |
| Dimensions | 42.8 x 36.4 x 3.3 mm | | |
| Ordering Information | TS8GCFX602 ⋮ TS256GCFX602 | TS8GCFX602I ⋮ TS256GCFX602I | TS4GCFX722I ⋮ TS128GCFX722I |

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

# Flash Solutions

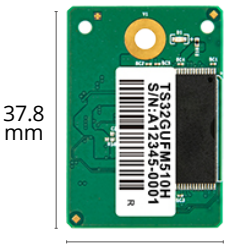
Transcend's flash solutions include USB flash drives, USB flash modules. Our USB flash drives feature a compact and portable design, ideal for applications where reliability and data retention are crucial. Our flash modules offer a simple solution for integrating SSD storage technology into legacy PC-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

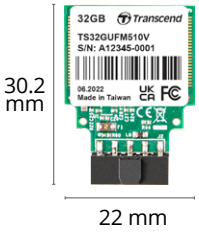


# Flash Solutions

## USB Flash Drive


## USB Flash Module




## Product Line

| Form Factor | Model | Flash Type | Capacity | Operating Temperature |
|---|---|---|---|---|
| **USB Flash Drives** | JF282T | 112-layer 3D TLC | 64GB~512GB | 0°C~70°C |
| | JF180I | 112-layer 3D TLC (SLC Mode) | 16GB | -40°C~85°C |
| | JF270M | MLC | 8GB~32GB | 0°C~70°C |
| **USB Flash Modules** | UFM510H | MLC | 2GB~32GB | 0°C~70°C |
| | UFM510V | | 8GB~32GB | 0°C~70°C |

# USB Flash Drives


| Model | JF282T | JF180I | JF270M |
|---|---|---|---|
| Flash | 112-layer 3D TLC | 112-layer 3D TLC (SLC Mode) | MLC |
| Capacity | 64GB~512GB | 16GB | 8GB~32GB |
| Operating Temperature | 0°C~70°C | -40°C~85°C | 0°C~70°C |
| Performance (Sequential R/W*) | 255/115 MB/s | 155/135 MB/s | 160/40 MB/s |
| Interface | USB 3.1 Gen 1 | USB 3.0 | USB 3.1 Gen 1 |
| Connector | USB Type-A | | |
| Dimensions | 61.5 x 18.6 x 8.7 mm | | |
| Ordering Information | TS64GJF282T<br>⋮<br>TS512GJF282T | TS16GJF180I | TS8GJF270M<br>⋮<br>TS32GJF270M |

# USB Flash Modules



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

**R/W: Read/Write**

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

# Camera Modules

Transcend's camera modules build on years of experience in imaging solutions, delivering high-quality image capture, stable performance, and easy system integration. Designed for industrial and embedded applications, they provide reliable output even in harsh environments—making them ideal for surveillance, automation, and smart device deployments.

# Camera Modules

## Key Features

### Compact & Modular Design

Seamlessly integrates into industrial PCs, POS terminals, EV chargers, and other embedded devices.

### High-Resolution Imaging

Equipped with high-quality image sensors, ideal for surveillance, and visual inspection.

### Flexible Connectivity

Available with MIPI or USB interfaces for easy integration with Linux systems and NVIDIA Jetson Orin platforms.

### Low-Light & HDR Support

Delivers clear images in challenging lighting conditions, supporting reliable 24/7 monitoring.

## Applications

- Industrial PC Vision Systems
- Self-Service Kiosks & POS Terminals
- EV Charging Stations
- Smart Access Control
- Surveillance and Recording Terminals

| | ECM 100 Series | ECM 300 Series |
|---|---|---|
| **Output I/F** | MIPI CSI-2 | MIPI CSI-2 |
| **Sensor** | GC2093 | IMX675 |
| **Resolution** | 2MP | 5MP |
| **Frame Rate** | 60/30 fps | 60/30 fps |
| **Viewing Angle** | 130° (diagonal) | 140° (diagonal) |
| **Operating Temperature** | -20°C (-4°F) ~ 60°C (140°F) | |
| **Warranty** | Two-year Limited Warranty | |

# World-Class Manufacturing Base



## High-Speed SMT Lines

Transcend operates 15 high-speed Surface Mount Technology (SMT) production lines in its Taipei factory. Highly automated facilities are widely implemented to guarantee consistent quality, high capacity, and to minimize human errors.

## Proven Quality

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

## Quality Control

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

Transcend®
EMBEDDED SOLUTIONS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