

## Embedded Solutions



### SATA III M.2 SSDs

## MTS990T & MTS990T-I

Transcend's industrial-grade M.2 2280 SATA III SSD MTS990T utilizes BiCS8 218-layer 3D NAND flash memory, delivering significantly higher storage density. The MTS990T is equipped with high-endurance 3D TLC NAND inherently rated for 3K Program/Erase (P/E) cycles and a built-in DRAM cache to optimize random access performance.

To meet the temperature requirements of various industrial applications, the MTS990T offers an extended operating temperature range of -20°C to 75°C and is also available in a wide-temperature version, the MTS990T-I, supporting an operating temperature range of -40°C to 85°C. The entire series incorporates a PCB with 30μ" gold finger plating and Corner Bond technology, and undergoes rigorous in-house testing to ensure long-term stable operation and high reliability in mission-critical embedded systems.

### Hardware Features

- Compliant with RoHS 2.0 standards
- Space-saving M.2 form factor (80mm) – ideal for mobile computing devices
- DDR3 DRAM Cache embedded
- Endurance: 3K P/E cycles (Program/Erase cycles) guaranteed
- Key components fortified by default with Corner Bond technology

### Firmware Features

- Dynamic thermal throttling
- Built-in LDPC ECC (Error Correction Code) functionality
- Advanced Global Wear-Leveling and Block management for reliability
- Advanced Garbage Collection
- Supports S.M.A.R.T. function to conduct health monitoring, analysis, and reporting for storage devices

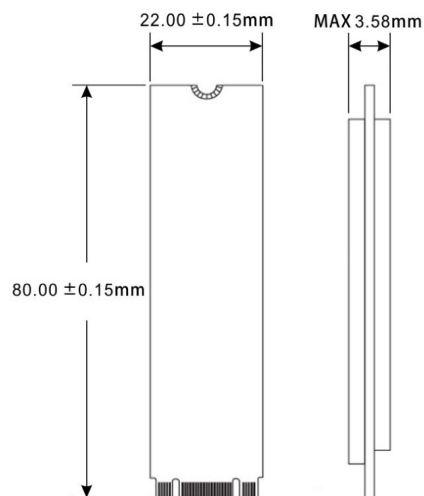
### Ordering Information

|       |                                  |
|-------|----------------------------------|
| 256GB | TS256GMTS990T<br>TS256GMTS990T-I |
| 512GB | TS512GMTS990T<br>TS512GMTS990T-I |
| 1TB   | TS1TMTS990T<br>TS1TMTS990T-I     |
| 2TB   | TS2TMTS990T<br>TS2TMTS990T-I     |
| 4TB   | TS4TMTS990T<br>TS4TMTS990T-I     |

## Specifications

|                              |                                         |                                                     |
|------------------------------|-----------------------------------------|-----------------------------------------------------|
| <b>Appearance</b>            | Dimensions                              | 80 mm x 22 mm x 3.58 mm (3.15" x 0.87" x 0.14")     |
|                              | Weight                                  | 9 g (0.32 oz)                                       |
|                              | M.2 Type                                | 2280-D2-B-M (Double-sided)                          |
|                              | Form Factor                             | M.2 2280                                            |
| <b>Interface</b>             | Bus Interface                           | SATA III 6Gb/s                                      |
| <b>Storage</b>               | Capacity                                | 256 GB / 512 GB / 1 TB / 2 TB / 4 TB                |
|                              | Flash Type                              | 218-layer 3D NAND flash                             |
| <b>Operating Environment</b> | Operating Voltage                       | 3.3V±5%                                             |
|                              | Operating Temperature                   | Extended Temp.<br>-20°C (-4°F) ~ 75°C (167°F)       |
|                              |                                         | Wide Temp.<br>-40°C (-40°F) ~ 85°C (185°F)          |
|                              | Storage Temperature                     | -55°C (-67°F) ~ 85°C (185°F)                        |
|                              | Humidity                                | 5% ~ 95%                                            |
|                              | Shock                                   | 15 G, 11 ms, 3 axis                                 |
|                              | Vibration (Operating)                   | 20 G (peak-to-peak), 7 Hz ~ 2000 Hz (frequency)     |
| <b>Power</b>                 | Power Consumption (Operation)           | 2.7 watt(s)                                         |
|                              | Power Consumption (IDLE)                | 0.9 watt(s)                                         |
| <b>Performance</b>           | Sequential Read/Write (CrystalDiskMark) | Read: Up to 560 MB/s<br>Write: Up to 520 MB/s       |
|                              | 4K Random Read/Write (IOmeter)          | Read: Up to 82,000 IOPS<br>Write: Up to 83,000 IOPS |
|                              | Mean Time Between Failures (MTBF)       | 3,000,000 hour(s)                                   |
|                              | Terabytes Written (TBW)                 | Up to 8450 TBW                                      |
|                              | Drive Writes Per Day (DWPD)             | 2.72 (3 yrs)                                        |
| <b>Warranty</b>              | Certificate                             | CE / UKCA / FCC / BSMI                              |
|                              | Warranty                                | Three-year Limited Warranty                         |

## Mechanical Dimensions



Product specifications are subject to change without notice. Pictures shown may differ from actual products. Total accessible capacity varies depending on operating environment. Due to the complexity and variety of industrial applications, Transcend cannot guarantee 100% compatibility with all platforms and under all scenarios. For special applications and environments, it is strongly suggested that you contact Transcend beforehand for clarification.