

Embedded Solutions



SATA III M.2 SSDs

MTS590T & MTS590T-I

Transcend's industrial-grade M.2 2242 SATA III SSD MTS590T utilizes BiCS8 218-layer 3D NAND flash memory, delivering significantly higher storage density. The MTS590T 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 MTS590T offers an extended operating temperature range of -20°C to 75°C and is also available in a wide-temperature version, the MTS590T-I, supporting an operating temperature range of -40°C to 85°C. The entire series incorporates a PCB with 30µm 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 (42mm) – 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

- Power-saving DevSleep (Device Sleep) mode (optional)
- NCQ command for better performance
- TRIM command for better performance
- Supports S.M.A.R.T. function to conduct health monitoring, analysis, and reporting for storage devices
- Advanced Garbage Collection

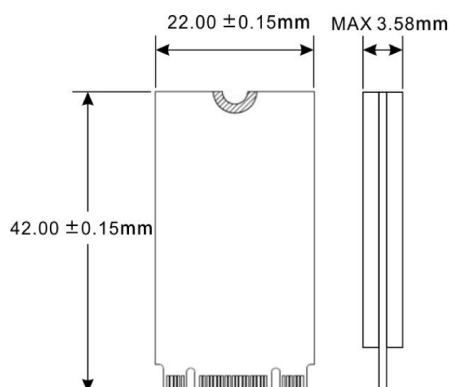
Ordering Information

256GB	TS256GMTS590T TS256GMTS590T-I
512GB	TS512GMTS590T TS512GMTS590T-I
1TB	TS1TMTS590T TS1TMTS590T-I
2TB	TS2TMTS590T TS2TMTS590T-I

Specifications

Appearance	Dimensions	42.0 mm x 22.0 mm x 3.58 mm (1.65" x 0.87" x 0.14")
	Weight	5 g (0.18 oz)
	M.2 Type	2242-D2-B-M (Double-sided)
	Form Factor	M.2 2242
Interface	Bus Interface	SATA III 6Gb/s
Storage	Capacity	256 GB / 512 GB / 1 TB / 2 TB
	Flash Type	218-layer 3D NAND flash
Operating Environment	Operating Voltage	3.3V±5%
	Operating Temperature	Extended Temp. -20°C (-4°F) ~ 75°C (167°F)
		Wide Temp. -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 ~ 2,000 Hz (frequency)
Power	Power Consumption (Operation)	2.5 watt(s)
	Power Consumption (IDLE)	0.9 watt(s)
Performance	Sequential Read/Write (CrystalDiskMark)	Read: Up to 560 MB/s Write: Up to 520 MB/s
	4K Random Read/Write (IOMeter)	Read: Up to 82,000 IOPS Write: Up to 83,000 IOPS
	Mean Time Between Failures (MTBF)	3,000,000 hour(s)
	Terabytes Written (TBW)	Up to 5950 TBW
	Drive Writes Per Day (DWPD)	2.72 (3 yrs)
Warranty	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.