

Embedded Solutions



mSATA SSDs

MSA520I

The MSA520I features the SATA III 6Gb/s interface and 112-layer 3D NAND flash, delivering density breakthrough that greatly improves storage efficiency. Its built-in DRAM cache allows faster random speeds while the 30 μ m gold finger PCB, Corner Bond technology, and anti-sulfur resistor guarantee its reliability in harsh conditions. Transcend also adopts the SLC Mode technology to enable the drive to reach competitive speeds and endurance that are equal to the SLC flash. The MSA520I is fully tested in-house, operating stably in a wide operating temperature range (-40 $^{\circ}$ C~85 $^{\circ}$ C).

Hardware Features

- Compliant with JEDEC MO-300A
- High-quality 3D NAND flash and SLC mode for exceptional endurance and reliability
- Endurance: 100K P/E cycles (Program/Erase cycles) guaranteed
- Anti-sulfur technology implemented to prevent sulfurization in the environment
- 30 μ m PCB gold finger

Ordering Information

| | |
|-------|---------------|
| 40GB | TS40GMSA520I |
| 80GB | TS80GMSA520I |
| 160GB | TS160GMSA520I |
| 320GB | TS320GMSA520I |

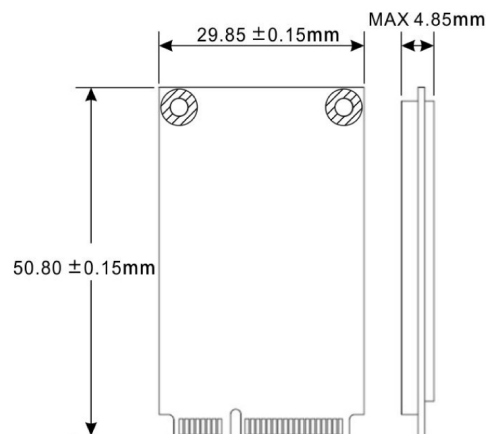
Firmware Features

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

Specifications

| | | |
|------------------------------|---|---|
| Appearance | Dimensions | 50.8 mm x 29.85 mm x 4.85 mm (2.0" x 1.18" x 0.19") |
| | Weight | 8 g (0.28 oz) |
| | Pin Count | 52 pin |
| | Form Factor | mSATA (MO-300A) |
| Interface | Bus Interface | SATA III 6Gb/s |
| Storage | Capacity | 40 GB / 80 GB / 160 GB / 320 GB |
| | Flash Type | 112-layer 3D NAND flash (SLC mode) |
| Operating Environment | Operating Voltage | 3.3V±5% |
| | Operating Temperature | Wide Temp. -40°C (-40°F) ~ 85°C (185°F) |
| | Storage Temperature | -55°C (-67°F) ~ 85°C (185°F) |
| | Humidity | 5% ~ 95% |
| | Shock | 1500 G, 0.5 ms, 3 axis |
| | Vibration (Operating) | 20 G (peak-to-peak), 7 Hz ~ 2,000 Hz (frequency) |
| Power | Power Consumption (Operation) | 3.5 watt(s) |
| | Power Consumption (Sleep) | 1.0 watt(s) |
| Performance | Sequential Read/Write (CrystalDiskMark) | Read: up to 560 MB/s Write: up to 500 MB/s |
| | 4K Random Read/Write (IOMeter) | Read: up to 38,000 IOPS Write: up to 75,000 IOPS |
| | Mean Time Between Failures (MTBF) | 3,000,000 hour(s) |
| | Terabytes Written (TBW) | up to 2,289 TBW |
| | Drive Writes Per Day (DWPD) | 52.3 (3 yrs) |
| Warranty | Certificate | CE / FCC / BSMI / UKCA |
| | 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.