TRRUST-Stor™ SATA SLC SECURE STORAGE DEVICE

Microsemi's new TRRUST-Stor™ is the first solid state disk drive on the market designed specifically to provide outstanding reliability, performance and security for defense applications in rugged environments.

DESCRIPTION

■ The **TRRUST-Stor** SSD realizes solid state technology's true potential with features that meet the stringent requirements of sensitive military applications. Defense market needs that the **TRRUST-Stor** addresses include a rugged small form factor, security options, sanitization protocols, obsolescence management, and high reliability in extended environments.

Microsemi's proprietary design provides unparalleled data integrity and endurance by focusing processing power on error correction, wear leveling, and eliminating drive corruption and unscheduled down time. This failure prevention methodology, protects data from catastrophic failures in critical applications and provides a much needed layer of protection.

Keeping sensitive data from getting in the wrong hands is also a big concern and is accomplished with features including AES-256 encryption, military sanitization protocols, and Microsemi's **TRRUST-Purge™** technology that renders data forensically unrecoverable in less than 50ms.

The **Armor**® management processor provides the **TRRUST-Stor** with these feature-rich capabilities and the flexibility required to serve the many operating requirements in today's defense and

aerospace applications. By having control and ownership of the **Armor**® management processor, Microsemi eliminates any dependence on a third party manufacturers' controller, thus protecting our customers from those all too often costly changes and/or end-of-life problems.

By developing a robust power interruption solution that does not depend on super caps or batteries, problems of data loss or corruption during power loss events are avoided.

The Microsemi **TRRUST-Stor** is ideal for mission critical defense applications, including:

- Surveillance
- Mission data recorders
- Field computers
- Digital map storage
- Avionics
- GPS and communications systems

■ All design and manufacturing for the **TRRUST-Stor** is done in the U.S. in our DOD trusted facility. Microsemi has a long history as an industry-leading manufacturer of innovative, high-reliability memory solutions for the defense market.

* This product is under development, is not qualified or characterized and is subject to change without notice..

Microsemi®
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General Description

- Capacity: 50 GB or 100 GB
  (1GB = 1,000,000,000 bytes)
- Commands: ATA–7, ATA–8
- Media: SLC NAND flash
- Form factor: 2.5" (100.45 MAX × 69.85 × 9.5 mm)
- Power: 5V +/- 10%
- Operating temperature: –40° C to +85° C

Performance

- Host interface: SATA at 1.5 Gb/s or 3 Gb/s, 6 Gb/s future
- Sustained sequential reads: 100 MB/s
- Sustained sequential writes: 100 MB/s
  (Sequential performance measured at 128kB block size)
- Reset-to-ready time: 2s

Data Management and Protection

- Superior ECC, (17, 9-bit symbols/sector)
- Uncorrectable bit error rate: better than 1 sector per 10^{30} bits read
- Protection from silent data corruption
- No EOL of forced firmware revisions
- SLC Grade NAND Flash - 10 times greater write endurance than MLC flash
- Managed write amplification
- Mean time between failures: >2,000,000 hours
- Write endurance: 3 petabytes for 100 GB drive and 1.5 petabytes for the 50 GB drive
- Power loss protection
  - Operational stability during power interruptions
  - No super caps or batteries that degrade over time and temperature.
- Read and write wear leveling
- SMART attributes (self-monitoring, analysis, and reporting technology)
- Industry-leading built-in self-test utilities; tests 98% of all SSD functions

Security

- AES encryption with a 256-bit key with XTS CBM
- 32bit CRC
- **TRRUST-Purge™** destroys key in less than 50 ms
- Hardware based erase in less than 4 seconds
- Compliant sanitization protocols
- US-made with full BOM and assembly control

Environmental and Mechanical

- Operating temperature: -40° C to +85° C
- Storage temperature: -55° C to +105° C
- Humidity: 5%–95%, non-condensing
- Altitude: 80,000 feet
- Weight: est. 158 g
- Operating shock: 1700 G, 0.5 ms, 1/2 sine, 1 shock per axis and 70 G, 11 ms, 1/2 sine, 1 shock per axis
- Vibration: 30 Grms, Mil-STD-810F, method 514.5C–8, 15–2000 Hz, 3 axes (1 hr each)
- Enhanced mechanical construction; component staking and underfill
- 100% dynamic factory burn-in

Additional Options

- Conformal coat
- Extended burn-in
- OEM customization
- Leaded BGAs
- Extended temperature screening
- Shock tolerant interface connectors

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