DATASHEET

128GB TRRUST-Stor® SATA SLC Self Encrypting Solid State Drive (SSD)

Model MDS128

The Mercury MSD128 is a secure self encrypting SSD. It provides the reliability, performance, and security required by defense applications where data protection is critical. The MSD128 incorporates 100K PE cycle 1-bit large geometry SLC NAND flash devices and the Mercury designed Armor® flash processor in a ruggedized 2.5" SSD form-factor with a user accessible capacity of 100 GB.

Features

- Host accessible capacity: 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: Industrial temperature
- Designed, built and tested in the USA

Security

- Multiple key management modes
- Hardware authentication
- AES encryption with a 256-bit key with XTS CBM
- TRRUST-Purge® destroys key in less than 30 ms
- Hardware based Fast Clear in 4 seconds
- Compliant sanitization protocols

Performance

- Host interface: SATA at 1.5 Gb/s or 3 Gb/s
- Sustained sequential reads and writes: 120-160 MB/s (Sequential performance measured at 128kB block size)
- Reset-to-ready time: <2s

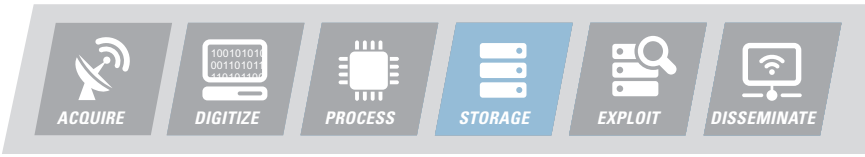
Data Management and Protection

- Superior ECC, (17, 9-bit symbols/sector) (153-bits)
- UBER uncorrectable bit error rate: better than 1 sector per 10-30 bits read
- Protection from silent data corruption (32-bit per sector CRC)
- 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 @25° C
- Write endurance: 3 petabytes
- 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)
- Built-in self-test capability (BIST)

Certifications

- NIST AES 256-XTS encryption certified (NIST # 2137)

Mercury Systems is a leading commercial provider of secure sensor and safety-critical processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



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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: 158 grams
- Operating shock: 3,000 G, 0.5 ms, 1/2 sine, 6 shocks per axis and 100 G, 11 ms, 1/2 sine, 6 shocks 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

- Extended burn-in
- OEM customization (Key management and AT)
- Leaded BGA assembly
- Extended temperature
- Ruggedized connector (100,000 insertions)
- Configuration control

Description

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

Mercury'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 XTS encryption, sanitization protocols, and Mercury'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 critical applications. By having control and ownership of the Armor management processor, Mercury 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.

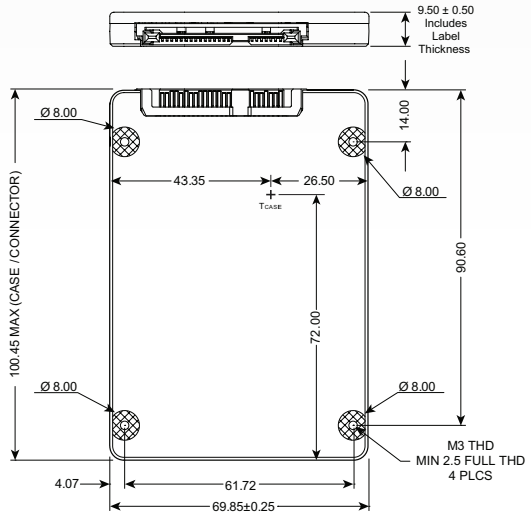
By developing a robust power interruption solution that does not depend on super caps or batteries, problems of data loss or corruption during power loss events are avoided.

The Mercury TRRUST-Stor is ideal for critical applications, including:

- High end industrial applications
- Surveillance
- Mission data recorders
- Field computers
- Digital map storage
- Avionics
- GPS and communications systems

All design and manufacturing for the TRRUST-Stor is performed in the U.S. in our DoD trusted facility. Mercury has a long history as an industry-leading manufacturer of innovative, high-reliability memory solutions.

Package Dimensions



Part Numbering

MSD128 X S0R-00 X I

Connector
- 0 = Standard product
- 2 = Ruggedized SATA Connector

Encryption:
- A = ASE-256 Encryption with XTS, Armor processor
- N = No Encryption version, Armor processor

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