

# Secure Solid State Drives (SSD)

## ASURRE-Stor® SATA SLC SSD

Models ASD256/512 and AS7256/512\* are engineered to CSfC, FIPS 140-2, and Common Criteria (CC) requirements



- Data at rest protection when implemented as a component in a customer's two-layer CSfC solution for the protection of classified, secret, and top secret data.
- ARMOR® processor seamlessly integrates certified cryptographic algorithms in highly ruggedized 2.5" form factor
- 256 and 512 GB capacity options
- Standard 9.5mm and low profile (LP) 7mm options

Mercury's ASURRE-Stor SSD marries high-endurance NAND flash with a military-hardened 2.5" form factor for the mission-critical storage of classified, secret, and top secret data in accordance with the [Commercial Solutions for Classified \(CSfC\)](#) program's hardware full disk encryption (HWFDE) standards. The ASURRE-Stor SSD is listed on the NSA's CSfC components list, available to be integrated into a customer's CSfC two-layer security solution.

Building on the commercial success of Mercury's TRRUST-Stor® family of solid state drives, the ASURRE-Stor SSD is compliant to SATA revision 2.6 with interface speeds up to 3.0 GB/s, though it is also compatible with 6 Gb/s interfaces. Currently available in either 256 or 512 GB capacity options, Mercury maintains 100% authority over the design and programming of its ARMOR controller to integrate certified cryptographic algorithms for data at rest protection with predictable and sustainable performance in thermally and mechanically stressful operating environments.

### Performance

- Sustained sequential read and write up to 200MB/s
- Reset-to ready time 1.5s
- Mean time between failures: >2,500,000 hours

\* NOTE: 7mm form factor is planned. Contact factory for further information.

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.

### Certifications:

- AES-256 XTS FIPS 197 Certificate #2802
- Contact Mercury for details on other cryptographic algorithm certifications
- FIPS 140-2 certification #2884
- CC Certificate #CCEVS-VR-VID10783-2017
- CSfC component listed

### Security

- Self-encrypting SSD using AES-256 XTS
- Mercury ARMOR controller
- Hardware authentication
- Write protect for read-only applications
- User configurable sanitization protocols, including TRRUST-Purge® encryption key destruction in <30ms, Fast Clear erase in 8s, and compliance to other common sanitization protocols.
- Multiple key management modes, including external key fill via DS-101 isolated fill port or RS-232 fill port.

### Data Management and Protection

- Superior ECC and read/write wear leveling algorithms optimized for military applications
- Uncorrectable bit error rate (UBER): <1 sector per 10-18 bits read
- Self-monitoring, analysis, and reporting technologies (SMART)
- Write endurance: 4.5 petabytes for 256 GB capacity, 9 petabytes for 512 GB capacity
- Unique power management circuitry, free of temperature-sensitive batteries and supercapacitors, for data integrity preservation
- Self-monitoring, analysis, and reporting technologies (SMART)
- Continuous built-in self-test monitoring



ACQUIRE



DIGITIZE



PROCESS



STORAGE



EXPLOIT



DISSEMINATE

## Environmental and Mechanical

- Operating temperature: -40° C to +85° C
- Storage temperature: -55° C to +125° C
- Humidity: 5% - 95%, non-condensing
- Weight: ~158 grams
- Altitude: 80,000 feet
- Operating Shock:
  - 3,000G, 0.5ms, 1/2 sine, 6 shocks per axis
  - 100G, 11ms, 1/2 sine, 6 shocks per axis
- Vibration:
  - 30 Grms, MIL-STD-810G, method 514.5C-8, 15-2000 Hz, 3 axes (1 hr each axis)
- Component staking and underfill for enhanced mechanical construction

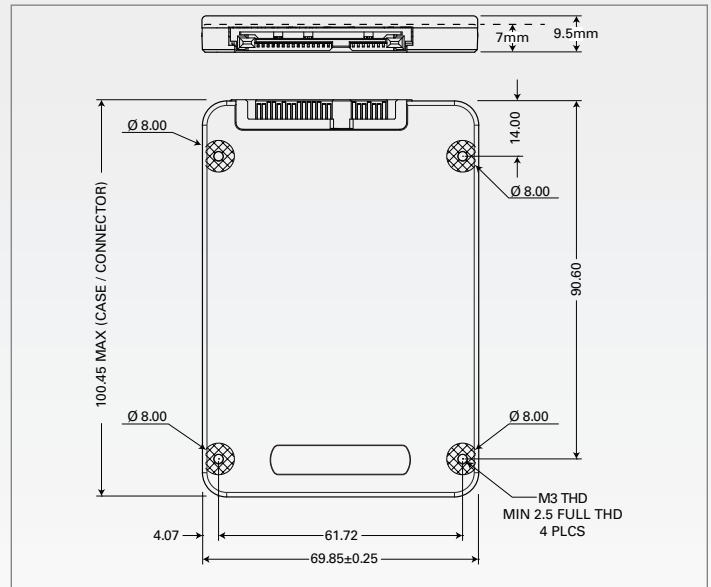
## Additional Options Available

- Leaded BGA assembly
- Extended temperature and burn-in screening
- Ruggedized interface connectors
- Capacity de-stroking
- Larger storage capacities

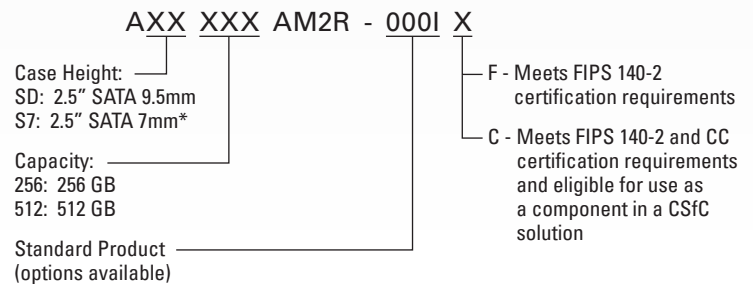
## Need More Help?

Contact Mercury's Secure SSD application engineering team at [secure.ssd@mercy.com](mailto:secure.ssd@mercy.com)

## Package Dimensions



## Part Numbering



Example part Number: ASD512AM2R-000IF

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Download our Secure SSD Tech Brief



Download our Safeguarding Mission Critical Data Whitepaper



Download our Demystifying Hardware Full Disk Encryption Technology for Military Data Storage Whitepaper



Download our Microelectronics Quick Reference Guide

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