Secure Encrypting SATA BGA SLC NAND Flash Solid State Drive (SSD)

Models MSM064

The Mercury MSM064 are complete SATA storage system packaged as a single 32 mm x 28 mm, 524 pin PBGA. Perfect for embedded defense applications where a full sized 2.5" storage device is too large, the Mercury SATA BGA SSD combines the Mercury Armor® III SATA flash controller with the latest in small geometry SLC NAND flash and security features including encryption, authentication, anti-tamper (AT), as well as self-destruct features into a single module. The MSM064 SATA BGA modules are available with the initial density of 64 GB, are compliant to SATA revision 2.6, and supports interface transfer speeds of 1.5 Gb/s and 3.0 Gb/s.

The MSM064 provides space saving of 60%. It would require 2300 mm² to execute a similar design on the PCB. The 32 x 28 mm BGA SSD takes only 900 mm².

Features

- NIST certified encryption
- Mercury Armor III flash processor
- Host accessible capacity: 48GB – MSM064 (1) (2)
- Host interface – 1.5 Gb/s and 3 Gb/s (6.0 Gb/s compatible)
- DS-101 interface
- Support for all standard military sanitization protocols
- SMART attributes
- Minimal external components
- Zero power standby mode (ZPM and DEVSLP)
- Hardware AES-256 encryption running XTS mode
- Hardware authentication

- Self-destruct capability
- AES key purge feature eliminates encryption key
- Whole module erase with "push-button" trigger option
- 1-bit, Single Level Cell (SLC) NAND flash
- 12 bit BCH ECC correction
- UBER (Uncorrectable Bit Error Rate): 10-18
- No batteries or super capacitors
- Write protect option for read-only applications.
**Mechanicals**
- MSM064 – 32 mm x 28 mm
- Thickness: 6.0 mm (typical)
- Density enhancement: 900 mm² vs 2300 mm²; results in a 60% space reduction over conventional PCB designs
- 524 plastic ball grid array
- External tin/lead solder balls

**On Chip Power Supply**
- Single input voltage: 3.3 to 5.0V
- Abrupt power interruption protection

**Applications**
- Defense and aerospace
- Ruggedized mobile systems
- Surveillance, avionics, navigation
- Ruggedized portable storage applications

**Package Dimensions**

**Part Numbering**

- Example part Number: MSM064AM2L-M00I
- MSM064AM2L-M00CEV

(1) Contact Factory for availability
(2) One Gigabyte (GB) = 1,000,000,000 bytes.