

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

Models MSM064



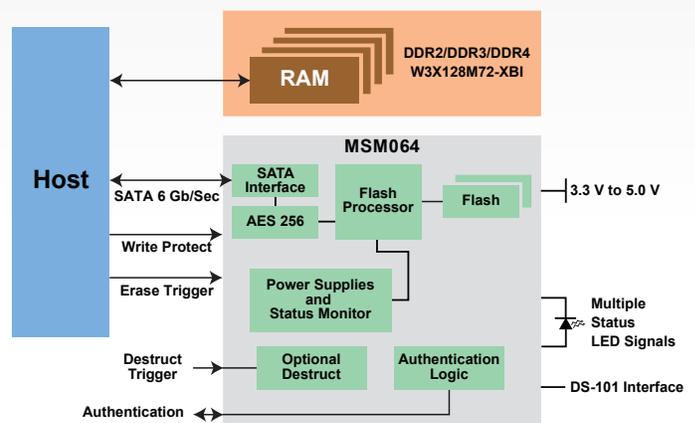
The Mercury MSM064 are complete SATA storage system packaged as a single 32 mm x 28 mm, 524 pin PBGA. Perfect for embedded defense applications where a full sized 2.5" storage device is too large, the Mercury SATA BGA SSD combines the Mercury Armor® III SATA flash controller with the latest in small 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 mm<sup>2</sup> to execute a similar design on the PCB. The 32 x 28 mm BGA SSD takes only 900 mm<sup>2</sup>.

## Features

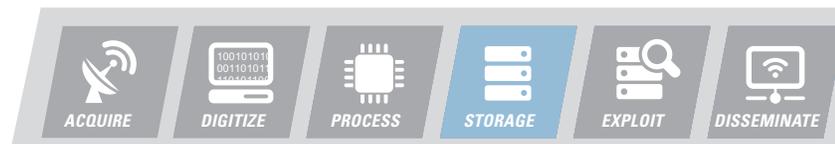
- NIST certified encryption
- Mercury Armor III flash processor
- Host accessible capacity:  
48GB – MSM064 <sup>(1) (2)</sup>
- Host interface – 1.5 Gb/s and 3 Gb/s (6.0 Gb/s compatible)
- DS-101 interface
- Support for all standard military sanitization protocols
- SMART attributes
- Minimal external 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.



Example: systems application using MSM064.

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.



## Mechanicals

- MSM064 – 32 mm x 28 mm
- Thickness: 6.0 mm (typical)
- Density enhancement: 900 mm<sup>2</sup> vs 2300 mm<sup>2</sup>; results in a 60% space reduction over conventional PCB designs
- 524 plastic ball grid array
- External tin/lead solder balls

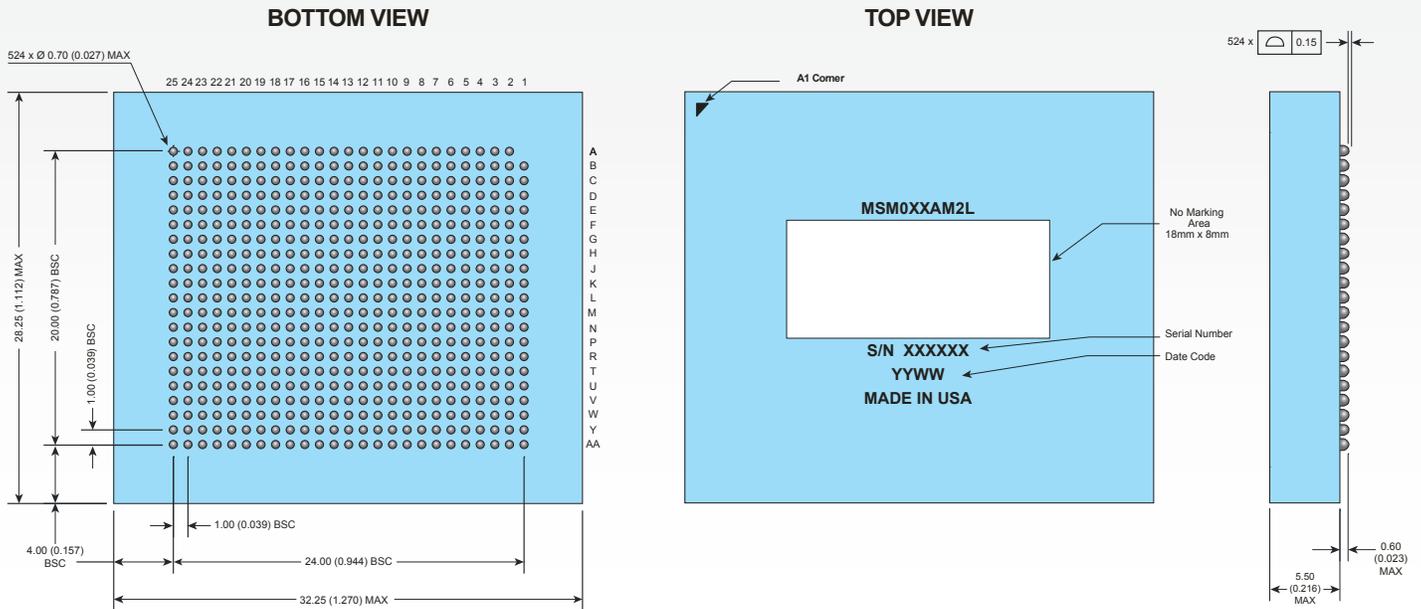
## On Chip Power Supply

- Single input voltage: 3.3 to 5.0V
- Abrupt power interruption protection

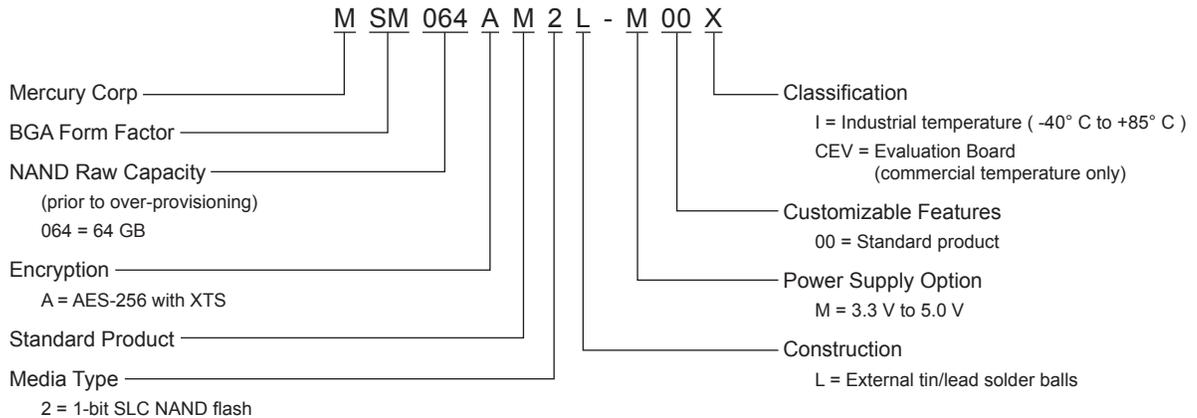
## Applications

- 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.

TRRUST-Stor, ASURRE-Stor, and Armor are registered trademarks and Innovation That Matters, and Mercury Systems are trademarks of Mercury Systems, Inc. Other product and company names mentioned may be trademarks and/or registered trademarks of their respective holders. Mercury Systems, Inc. believes this information is accurate as of its publication date and is not responsible for any inadvertent errors. The information contained herein is subject to change without notice.

Copyright © 2018 Mercury Systems, Inc.

3202.05E-0418-ds-SSD-MSM064



**CORPORATE HEADQUARTERS**  
50 Minuteman Road  
Andover, MA 01810-1008 USA  
+1 (978) 967-1401  
+1 (866) 627-6951  
Fax +1 (978) 256-3599

**MICROELECTRONIC SECURE SOLUTIONS**  
3601 East University Drive  
Phoenix, AZ 85034-7217 USA  
+1 (602) 437-1520  
Fax +1 (602) 437-1731

