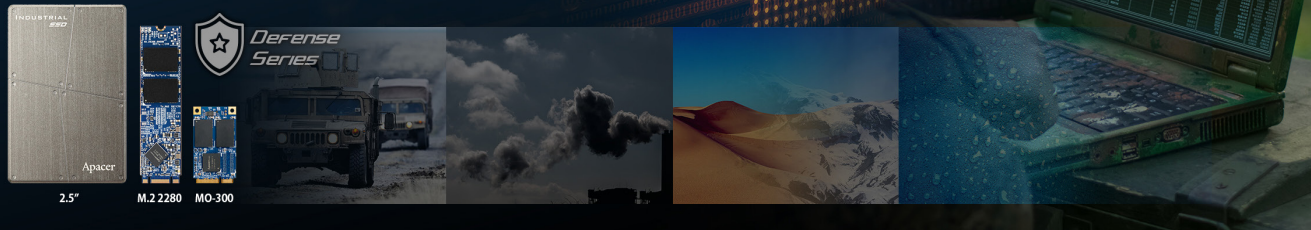


## Industrial Rugged SSDs SH24D Defense Series

A complete Solution for Secure Data Protection and Extreme Environments.



### SH24D Series

#### Product Features

- SLC-liteX Technology
- AES 256-bit Hardware Encryption
- Low-Density Parity-Check (LDPC) Code
- Global Wear Leveling
- DataRAID™
- DataDefender™
- SMART Read Refresh™

#### Security Features (optional)

- TCG Opal 2.0<sup>1</sup>/Self Encrypting Drives (SEDs)
- Instant Keychange
- MIL Erase<sup>2</sup>
- Digital Destruction
- Write Protect

#### Implementation Methods (optional)

- Software command
- Hardware
  - Connector pin
  - Pin headers
  - Slide switch

### MIL-STD Environmental Test

Item	Test Methods
Shock	MIL-STD-202G, Condition A
	MIL-STD-883K, Condition B
Vibration	MIL-STD-810G, Method 514.6, Procedure I, Category 24
	MIL-STD-810G, Method 514.6, Procedure I, Category 7
Humidity	MIL-STD-810G, Method 507.5, Procedure II
High Temp.	MIL-STD-810G, Method 501.5, Procedure II
Low Temp.	MIL-STD-810G, Method 502.5, Method 501.5, Procedure II
Thermal Shock	MIL-STD-810G, Method 503.5, Procedure I-C
Altitude	MIL-STD-810G, Method 500.5, Procedure I
Salt Fog	MIL-STD-810G, Method 509.5, Procedure I
Radiation Test	MIL-STD-810G, Method 505.5, procedure II

### SPECIFICATIONS

- Serial ATA Revision 3.2
- SATA 6 Gb/s interface
- ATA command set-4 (ACS-4)
- Backward compatible with SATA 1.5/3 Gb/s

	2.5"	M.2 2280	MO300
<b>Configuration</b>			
Capacity	Double-sided: 160, 320, 640GB		
NAND Flash Type	3D TLC (BiCS3)		
<b>Performance</b>			
Sequential Read/Write (Max.)	560/490 MB/s		
4K Random Read/Write (Max.)	96,000/85,000 IOPS		
<b>Reliability</b>			
Endurance (Drive Writes Per Day: DWPD <sup>3</sup> )(Max.)	Up to 11.24 DWPD at 640GB		
MTBF	>5,000,000 hours		
P/E Cycle	100,000		
Features (optional)	<ul style="list-style-type: none"> <li>• Thermal Throttling</li> <li>• Conformal Coating</li> <li>• Nano Coating</li> <li>• Sidefill</li> <li>• 30μ Gold Finger</li> <li>• Wide Temperature</li> </ul>		
<b>Environment</b>			
Operating Temperature	<ul style="list-style-type: none"> <li>• Standard: 0°C to 70°C</li> <li>• Wide: -40°C to 85°C</li> </ul>		
Storage Temperature	-55°C to 100°C		
<b>Power Requirement</b>			
Supply Voltage	5.0 V ± 10%	3.3 V ± 5%	3.3 V ± 5%
<b>Power Consumption<sup>4</sup> (mA)</b>			
Read	420 (rms)	600 (rms)	600 (rms)
Write	370 (rms)	735 (rms)	735 (rms)
Idle	70 (rms)	90 (rms)	90 (rms)
Peak	135 (rms)	290 (rms)	290 (rms)
<b>Physical Characteristics</b>			
Form Factor	2.5"	M.2 2280-D5-B-M	JEDEC MO-300
Dimensions (mm)	100.00 x 69.84 x 9.30	80.00 x 22.00 x 3.88	50.80 x 29.85 x 4.85

1. TCG Opal 2.0 can only be triggered via software commands and cannot be implemented together with any of the other Security features.

2. Includes NSA9-12, DoD 5220.22-M, NSA Manual 130-2, USA-AF AFSSI 5020, USA-Army 380-19, USA Navy NAVSO P-5239-26, NISPOMSUP Chap 8, Sect. 8-501 and IREC (IRIG) 106.

3. DWPD (Drive Write Per Day) is calculated based on the number of times that user overwrites the entire capacity of an SSD per day of its lifetime during the warranty period.

4. The RMS value is measured with IOMeter 1GB Seq. Read/Write QD32/T1.