

M.2 2242 2280 22110  
SATA pSLC & MLC Flash Disk

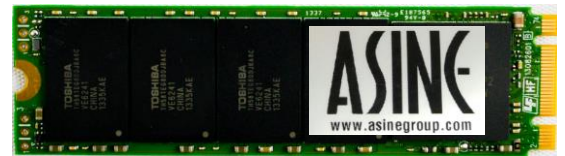
1000+GB  
4000 GB  
OEM

Photon series  
M.2 SATA

### Product Overview

The *Photon series* M.2 SSD device presents SATA interface small package **pSLC/MLC** Flash Disk. Asine M.2 flash drive delivers performance and proven reliability for data and mission critical systems. Added benefits of flexibility are built into Asine's M.2 storage systems, including easy field firmware upgrades and expandable storage capacity as flash disk capacities increase. The M.2 drives support OEM application specific features such as **AES-256 bit hardware encryption (MLC & pSLC)**, **fast sanitize erase**, **high grade industrial** certified metal & workmanship, optional conduction cooling (no air flow required), BOM configuration awareness, and more. Product is compliant to JGPSSI-JIG, REACH and RoHS.

M.2



Photos for ref. only

### Applications

- Industrial & Commercial PC/Tablet Systems
- ATM, Gaming, Lottery
- Automotive, Navigation, Infotainment, ECU
- Point Of Sale- POS / Kiosk, Smart Terminals
- Medical
- Industrial & Airborne Systems
- Rugged Computer
- Security, HLS-Home Land Security
- High-Speed Data Recording
- Video Surveillance, JPEG2000 Capture
- Factory Automation
- JBOD, NAS, SAN, RAID



## Features

- Highest quality pSLC & MLC Flash technology
- 2280: 120GB to 1000GB at MLC; 60GB to 500GB at pSLC; 2242: up to 500GB at MLC; 240GB pSLC of non-volatile Flash memory at M.2 type D5-BM
- I/F SATA1/2/3, Protocol SATA 3.1 AHCI, All modes & PIO, UDMA6, ATA8 STD.
- **Fast sanitize erase** for entire media (few seconds typical) capacity dependent
- Operating temperature – Commercial 0°C to 70°C, Industrial -40°C to +85°C
- Storage temperature -55°C to +95°C
- Humidity 5% to 95% relative, non-condensing
- Altitude (operating & non-operating) -1000 ft. to 100,000 ft.
- High data transfer rate: 2280: pSLC Sustained Read up to 520 MB/S, Write up to 520 MB/S. MLC Sustained Read up to 520 MB/S and Write 300 MB/S  
2242: Read / Write MLC 60/120/500GB 220/200 MB/S; 240GB 220/100; pSLC 30/60/240GB 250/200 MB/S; 120GB 250/150 MB/S (capacity, technology & file system dependent)
- IOPS up to 4KB to 50K 2280: pSLC; 70K MLC; 2242: up to 25K (min.10K)
- Reliability - MTBF - 1,500,000 hours
  - Embedded EDC/ECC, support up to 64-bit BCH Algorithm for Error
  - Built-in power-up self-test and automatic self-diagnostics
  - Wear-Leveling Algorithm: Dynamic & Static wear leveling
- Power: 2280: 0.7W on Idle. Operation max. 4.7W for MLC/pSLC, 2242: 0.9W on idle. Read 1.5W max, write 1.85W.
- TBW by JESD218 standard with 4KB random write workload –
  - 2280: MLC – 60TBW for 240GB SSD, 120TBW for 500GB SSD; pSLC – 320TBW for 120GB SSD, 640TBW (@128KB-4800TBW) for 240GB SSD
  - 2242: 600TBW for 240GB
- No special drivers - uses existing Windows, Linux, VxWorks®, and SATA drivers
- Heat dissipation balancing for demanding applications
- SSD unit sustain environmental
  - Shock - Half Sine, 1000G peak / 0.5ms (3 axes)
  - Vibration – Operating 2.17 GRMS (Random, 5-700Hz, 3 axes)
  - Non-operating: 3.13 GRMS (5-800Hz)

The Asine **M.2** is a top reliable high performance storage Solid-State Disk with no moving parts, ideal to meet the reliability requirements for defense, aerospace, video and audio applications, as well as bootloader or Firmware / BIOS and embedded high reliability storage. The Asine **M.2** component is designed to withstand extreme shocks, vibrations and harsh environmental conditions, while operating without compromising on data integrity.



Photos for ref. only

### Physical dimensions:

- 2242: 42 L X 22 W X 3.8 H max mm
- 2280: 80 L X 22 W X 3.6 H max mm
- 22110: 110 L X 22 W X 3.6 H max mm

**Ordering Information:** P/N Structure: ASM2SATA[ff]-[cap]-[t][f][h][m]

P/N Prefix [ff]	Capacity	t**	f	H*	m
ASM2SATA04 2242-D5-BM	0030 <b>1)</b> 30 GB	C 0°C to 70°C	F	W S/W Sanitize Erase	SP pSLC Flash
SATA-II I/F	0060 <b>1)3)</b> 60 GB	Z -40°C to 85°C	F Conformal coating	H H/W Sanitize Erase	M MLC Flash
ASM2SATA08 2280- D5-BM	0120 <b>1)2) 3)</b> 120 GB	** Optional OEM beyond industrial temperature			
SATA-III I/F	0240 <b>1)2) 3)</b> 240 GB				
ASM2SATA11 22110- D5-BM	0500 <b>2) 3)</b> 500 GB				
SATA-III I/F	1000 <b>2)</b> 1000 GB				
<b>Additional Options:</b>	<b>1)</b> 2242 pSLC				
<b>• 4TB 22110 OEM option</b>	<b>2)</b> 2280 MLC				
<b>• Customization available</b>	<b>3)</b> 2280 pSLC; 2242 MLC				
	Net formatted capacity is operating system depended				

### Ordering Example:

ASM2SATA08-0500-ZFSP is an M.2 2280 500GB pSLC SSD Conformal coated, SATA3, operating at -40°C to 85°C