ASINE

M.2 & 2.5" SATA 3D eNAND Flash Disk

2280 2242 2.5" 7 mm Rugged

16GB to 2TB

Photon series SATA

Product Overview

The *Photon series* M.2 & 2.5" SSD device TLC SATA3 interface at small package Flash Disk. Asine flash drive delivers performance and proven reliability. Added benefits of flexibility are built into Asine's storage systems and expandable storage capacity as flash disk capacities increase. The drives support also other specific features such as AES-256 bit hardware encryption, TCG OPAL, fast sanitize erase, high grade industrial certified metal & workmanship.

Photos for ref. only

Applications

- Industrial & Commercial PC/Tablet Systems
- Gaming,
- Navigation, Infotainment,
- Smart Terminals
- Airborne Systems
- Rugged Computer
- Security, HLS-Home Land Security
- High-Speed Data Recording
- Video Surveillance, JPEG2000 Capture
- JBOD, NAS, SAN, RAID

Features

- Highest quality 3D eNAND Flash technology
- 240GB to 1920GB @ 2.5"; 16GB to 1TB @ M.2-2242; 120GB to 1920GB M.2-2280; M.2 type D5-BM
- I/F SATA1/2/3, Protocol SATA 3.2
- Security: Secure Erase support; ATA8 security feature set; User selectable ATA password support; AES256, Optional OPAL at M.2-2280 and 2.5"
- Operating temperature – Commercial 0°C to 70°C, Industrial -40°C to +85°C
- Storage temperature -40°C to +85°C
- Humidity 5% to 95% relative, non-condensing
- High data transfer rate: Sustained Read up to 560MB/Sec, Write up to 515MB/Sec. (capacity & file system dependent)
- Random 4KB block size –
  - 2.5" - Read: Up to 100K IOPS. Write: Up to 91K IOPS
  - M.2-2280 Read: Up to 80K IOPS; Write: Up to 81K IOPS; M.2-2242 upto 75K
- Reliability - MTBF - 1,500,000 hours
  - Embedded EDC/ECC LDPC, 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
  - PLP – Power lost Protection - SPOR for 2.5" and M.2-2280
- Power: 0.09W on Idle. Operation max. 2.1W 2.5"/M.2-2280; M.2-2242 0.41W
- TBW by JESD218 standard with 4KB random write workload:
  - 2.5"/M.2-2280 2TB: up to TBW 1360 DWPD 5.1
  - M.2-2242 1TB: up to TBW 700 DWPD 1.2/3 yr.
  - Enterprise (option V): 12000 @ 1TB at 128K sustain write
  - M.2-2242 Enterprise: (option V) 2100 for 480GB at 128K sustain write
- No special drivers - uses existing Windows, Linux, VxWorks®, and SATA drivers
- Heat dissipation balancing for demanding applications
- SSD unit sustain environmental
  - Shock (operating and non-operating) 1,500 G/0.5ms
  - Vibration - Operating: 2-500Hz, 3.1G
  - Non-operating: >3.1 Grms (2-800Hz)

The Asine `M.2 and 2.5"` 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 component is designed to withstand extreme shocks, vibrations and harsh environmental conditions, while operating without compromising on data integrity.

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Physical properties:

2280: 80 L X 22 W X 3.6 H mm max

2242: 42 L X 22 W X 3.6 H mm max

2.5":   100.2 L X 70 W X 7 mm H max

Weight-max: 2.5" @ 78 gr. | M.2 8 gr.

M.2 2242 Ordering Information:
P/N Structure: AS[C/Z]S[**x**]M24-[cccc]NNET2[-ooo]

P/N	Description
ASZS8M24-0016NNET2	M.2-2242-D5-BM TLC 16GB SATA3 Industrial temp.
ASZS8M24-0032NNET2	M.2-2242-D5-BM TLC 32GB SATA3 Industrial temp.
ASZS8M24-0064NNET2	M.2-2242-D5-BM TLC 64GB SATA3 Industrial temp.
ASZS8M24-0120NNET2	M.2-2242-D5-BM TLC 120GB SATA3 Industrial temp.
ASZS8M24-0240NNET2	M.2-2242-D5-BM TLC 240GB SATA3 Industrial temp.
ASZS8M24-0480NNET2	M.2-2242-D5-BM TLC 480GB SATA3 Industrial temp.
ASZS8M24-0960NNET2	M.2-2242-D5-BM TLC 960GB SATA3 Industrial temp.

Options* for M.2-2242: Operating Industrial temperature (Z>C), Conformal coated(-00F), Enterprise(T>V)(up to 480GB); **For x** (9;7) option See 2.5" Table

M.2 2280 Ordering Information: P/N Structure: AS[C/Z]S9M28-[cccc]NAET2

ASCS9M28-0120NAET2	M.2-2280-D5-BM TLC 120GB SATA3 Commercial temp.
ASCS9M28-0240NAET2	M.2-2280-D5-BM TLC 240GB SATA3 Commercial temp.
ASCS9M28-0480NAET2	M.2-2280-D5-BM TLC 480GB SATA3 Commercial temp.
ASCS9M28-0960NAET2	M.2-2280-D5-BM TLC 960GB SATA3 Commercial temp.
ASCS9M28-1920NAET2	M.2-2280-D5-BM TLC 1920GB SATA3 Commercial temp.

Options* for M.2-2280: Operating Industrial temperature (C>Z), OPAL(A>O), conformal coated (-00F), Enterprise(T>V)(up to 960GB);
For x (9;7) option See 2.5" Table   ***Bound to certain combinations**

2.5" Ordering Information:
P/N Structure: ASCS[**x**]025-[cccc]NAET2[-ooo]
All: 2.5" TLC SATA3 Commercial temp.

P/N	Description		
ASCS**9**025-0240NAET2	240GB	ASCS**9**025-0480NAET2	480GB
ASCS**9**025-0960NAET2	960GB	ASCS**9**025-1920NAET2	1920GB
ASCS**8**025-0240NNET2	240GB	ASCS**8**025-0480NNET2	480GB
ASCS**8**025-0960NNET2	960GB	ASCS**8**025-1920NNET2	1920GB

Options* for 2.5":

For x=9 big cache & AES256: Operating Industrial temperature (C>Z), OPAL(A>O), PLP(N>L) (Power Lost Protection), conformal coated (-00F), conduction cool (-0D0), Coated & conduction cool (-0DF), Enterprise(T>V)(up to 960GB)

For x=8 Std: PLP(N>L)(Power Lost Protection), conformal coated (-00F), conduction cool (-0D0), Coated & conduction cool (-0DF)

For x=7 Enhanced: Operating Industrial temperature (C>Z), OPAL(A>O), PLP(N>L) (Power Lost Protection), conformal coated (-00F), conduction cool (-0D0), Coated & conduction cool (-0DF), Enterprise(T>V)(up to 960GB)

*Bound to certain combinations