

CMP MEMORY™



**FUTURE-
FORWARD
THINKING**

PRODUCT SELECTION GUIDE

AUTOMOTIVE • COMMUNICATIONS • INDUSTRIAL IoT & AI • NETWORKING • SECURITY • HEALTHCARE

WHY CHOOSE CMP MEMORY™ ?

- Fixed BOM Management
- Industrial Design and Process, High Reliability & Endurance
- Guaranteed Quality, 100% Original Flash Memory
- Long-term availability
- All industrial-grade Flash products are tested in High Temperature Dynamic Chamber
- Customized Sticker / Package Design/ Logo Printing / Preload /Firmware Optimization
- Each product is manufactured in accordance with ISO 9001 / ISO 14001/ ISO 27001 / OHSAS 18001 approved processes & RoHS/ AEC-Q100 compliant and CE / FCC certification.

TARGET MARKET & APPLICATION



INDUSTRIAL AUTOMATION

- Process / motion control
- Industrial PC/ Embedded
- Industrial Measurement
- Building Technology
- Identification / Access System



INFOTAINMENT

- POS Terminals
- Information Terminals
- Ticket/ Vending Terminals
- Digital Signage & Advertising
- Casino/ Amusement Gaming
- Online Gaming/Slot Machines
- VLTs & Lottery Terminals



TRANSPORTATION

- Multifunctional Terminals
- Data Recorders
- Advanced Driver Assistance Systems
- Logistics Telematics
- Digital Tachograph
- Rear-view Monitor
- Data Logger



ENTERPRISE MOBILITY

- Mobility ERP
- Barcode Scanning and Data Collection
- Mobile Payment
- Field Handheld- Computing
- Mobile Healthcare



SECURITY

- Surveillance
- Audit trails
- License protection
- Secure update
- Secure voice communication
- Authentication and authorization
- Data encryption and protection



HEALTHCARE

- Diagnostics
- Data logging / Imaging
- Mobile Medical Device
- Fetal Monitoring
- Sonogram/ Ultra Sound
- Fluoroscopy / Radiation Oncology
- Patient Monitoring System
- Pain Management Devices



AUTOMOTIVE

- Navigation System
- Entertainment
- Head unit/ Dashboard
- Black Box / Crash Recorder
- Drive Recorder
- Fleet Surveillance
- In Vehicle Computer
- Train Control and Monitoring
- Instrument cluster
- Dash cam



NETWORKING & COMMUNICATION

- Base Station
- Radio Network Controller
- Video/IPTV transcoding/storage
- Signaling Gateway
- Enterprise Media Gateway
- Switches/Routers/Gateways/Servers
- Small Cell
- Firewall Appliances
- Optical Network
- WAN Optimization Appliances
- Tetra Base Station



AEROSPACE & DEFENCE

- In-Flight Entertainment & Communication
- Combat Management
- Battlefield Sensor System
- Unmanned system payloads

AI & Industrial IoT

- Industrial Robotics
- Educational Robot
- EtherCAT Motion
- Robot DMS
- Industry 4.0 Solution
- Industrial Network
- DMS 4.0



Product Features



Power Loss Protection (PLP)

- Extra power to protect ALL data during power loss at write
- Can be applied on SATA 2.5", mSATA, M.2 2242 & 2280 ; PCIe U.2 & M.2.



Power Loss Protection Lite (PLP Lite)

- Extra power to protect SSD from losing FW, Tables or Partition due to unstable low-power disturbance or spikes
- Can be applied on CF card, SATA 2.5" SSD, mSATA and CFast



Wear Leveling

- Sophisticated wear leveling and bad block management ensure that flash cells are sparingly and equally used to prolong the device's life



Write-Protect or Read only

- Read Only
- Hardware Switch or Software GPIO Control
- Can be applied on 2.5" SATA 、 SATA M.2 2280 、 CF CARD



AES (Advanced Encryption Standard)

- A standard method for data encryption/decryption used to secure customer data
- SATA & PCIe SSD can provide AES-256 hardware encryption support



Opal (Security Encryption)

- Protect the confidentiality of stored user data against unauthorized access once it leaves the owner's control.
- Hardware Encryptions are applied on SATA interface & PCIe interface SSD.



SMART (Self Monitoring and Analysis Reporting Technology)

- All CF, PATA, SATA, USB and SD have SMART function
- Setting criteria for wearing message



30µ Gold plating

- USB drive and 2.5" SATA SSD provide 30µ gold-plating connections



Automotive

- AEC-Q100 & TS16949 are qualified for high reliability in car application



High Performance

- Optimized for high sequential data rates and IOPS by use of SLC technology



TRIM Support

- Expired data can be released and deleted in the Flash which reduces garbage collection and increases the life time



Longevity

- These products offer the lowest TCO in demanding applications with high requalification cost



Drive Partition

- To Partition the drive into several zones with different attributes
- Such as USB drive and SD card to be separated into Read-only, OS or data zones



Conformal Coating

- A layer of plastic protection is applied on all PCBA products in order to protect from dirt, dust, moisture, corrosion, electrical conduction and thermal conduction



Quick Erase

- Hardware Push Button or Software GPIO Control
- Erase Data or Erase ALL
- Continuously Erase when Power Re-Plug in, if Power Removed during Erase.
- Can be applied on 2.5" SATA 、 SATA M.2 2280 、 CF CARD



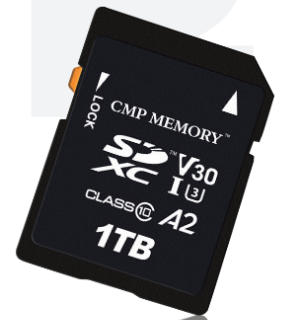
Industrial Temperature Support

- All the components are designed and tested under -40°C~85°C

NAND FLASH TECHNOLOGY COMPARISON

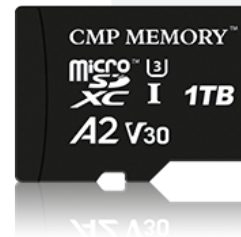
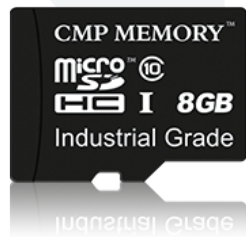
	SLC	pSLC	MLC	3D pSLC	3D TLC	3D QLC
Chip Capacity	●	●●	●●●	●●	●●●●	●●●●●
Cost per Bit	●●●●●	●●●●	●●●	●●●	●●	●
Reliability & Endurance	●●●●	●●●●	●●●	●●●●	●●●	●●
Industrial Temperature	●●●●	●●●	●●●	●●●	●●	●
Write Performance	●●●●	●●●●	●●●	●●●	●●	●
ECC Requirement	●	●●	●●	●●●●	●●●●	●●●●
Data Retention	●●●●	●●●	●●●	●●●	●●●	●
Longevity	●●●●	●●	●●	●●	●●	●

●●●●● maximum ●●●● highest ●●● high ●● medium ● low



SD/SDHC card	SDHC/ SDXC	SDXC
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Model No.	SDI-910	SDI-911	SDC-929
Interface & Speed Class	SD3.0-UHS-I	SD6.1- UHS-I, U3, A1, V30	SD6.1- UHS-I, U3, A2, V30
Flash Type	2D SLC/MLC/pSLC	3D TLC, 3D pSLC	3D TLC, 3D QLC
Capacity	SLC: 1GB - 32GB MLC: 4GB - 128GB pSLC: 4GB - 32GB	3D TLC: 16GB -512GB 3D pSLC: 8GB -64GB	3D TLC: 64GB -512GB 3D QLC: 128GB- 1TB
Sequential R/W (MB/sec.max)	SLC: Up to 65/55MB/s MLC: Up to 95/90MB/s pSLC: Up to 95/90MB/s	3D TLC: 100/96MB/s 3D pSLC: 95/85MB/s	3D TLC: Up to 100/94MB/s 3D QLC: Up to 100/90MB/s
Op. Temperature	Extended: -25°C~85°C Industrial: -40°C~85°C	Extended: -25°C~85°C Industrial: -40°C~85°C	Extended: -25°C ~85°C
Features	<ol style="list-style-type: none"> 1. SMART tool 2. DCS Power Loss Protection 3. Advanced wear-levelling 4. Auto-Read Refresh 5. AEC-Q100 	<ol style="list-style-type: none"> 1. SMART tool 2. DCS Power Loss Protection 3. Advanced wear-levelling 4. Auto-Read Refresh 5. End to end data path protection 6. Power on self test circuit 7. AEC-Q100 certification 	<ol style="list-style-type: none"> 1. SMART tool 2. DCS Power Loss Protection 3. Advanced wear-levelling 4. Auto-Read Refresh 5. End to end data path protection
Application	<ul style="list-style-type: none"> • Drive Recorder • Navigation System/GPS • Industrial PC/Server • Drones • Surveillance systems • Network cameras • Medical devices • Test and Measurement • In-vehicle infotainment (IVI) • Advanced Driver Assistance Systems (ADAS) 	<ul style="list-style-type: none"> • 4K or HD Video Recording • 3-D & 360-degree video recordings • Drones • Mobile/Handheld computers • Machine learning • Video streaming • Real-time analytics 	<ul style="list-style-type: none"> • Surveillance cameras • Drones • Industrial IoT gateways • Factory Automation • Professional Cameras • High-resolution Camcorders • Drive recorders • Artificial intelligence • Machine learning • Video streaming • Real-time analytics



microSD/ microSDXC	microSDHC / microSDXC	microSDHC / microSDXC
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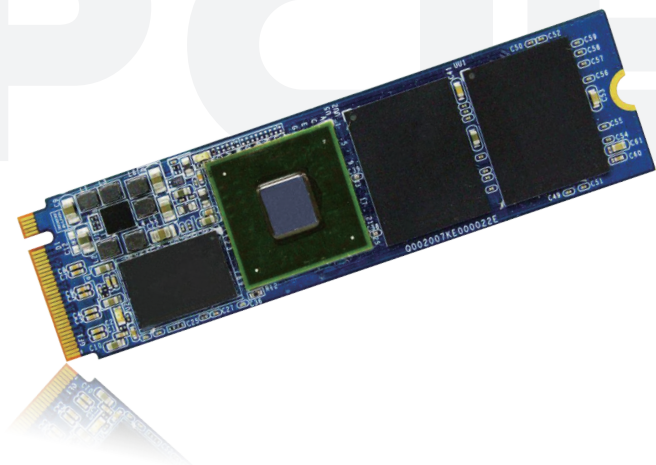
Model No.	TFI-810	TFI-811	TFC-829
Interface & Speed Class	SD3.0-UHS-I	SD6.1- UHS-I, U3, A1, V30	SD6.1- UHS-I, U3, A2, V30
Flash Type	2D SLC/MLC/pSLC	3D TLC / pSLC	3D TLC, 3D QLC
Capacity	SLC: 1GB - 4GB MLC: 4GB - 128GB pSLC: 4GB - 32GB	3D TLC: 16GB - 256GB 3D pSLC: 8GB - 64GB	3D TLC: 64GB -512GB 3D QLC: 128GB- 1TB
Max Channel	2 CH	1 CH	1 CH
Sequential R/W (MB/sec.max)	SLC: Up to 65/55MB/s MLC: Up to 95/90MB/s pSLC: Up to 95/90MB/s	3D TLC: 95/30MB/s 3D pSLC: 95/85MB/s	3D TLC: Up to 100/94MB/s 3D QLC: Up to 100/90MB/s
Op. Temperature	Extended: -25°C~85°C Industrial: -40°C~85°C	Extended: -25°C~85°C Industrial: -40°C~85°C	Extended: -25°C ~85°C
MTBF	3,000,000hrs	3,000,000hrs	1,500,000 hrs
Features	1.SMART tool 2.DCS Power Loss Protection 3.Advanced wear-levelling 4.Auto-Read Refresh 5.AEC-Q100 certification	1.SMART tool 2.DCS Power Loss Protection 3.Advanced wear-levelling 4.Auto-Read Refresh 5.End to end data path protection 6.Power on self test circuit 7.AEC-Q100 certification	1.SMART tool 2.DCS Power Loss Protection 3.Advanced wear-levelling 4.Auto-Read Refresh 5.End to end data path protection
Application	<ul style="list-style-type: none"> • Drive Recorder • Navigation System & GPS • Video surveillance • Industrial PC/Server • Drones & Kiosks • Internet of Things (IoT) 	<ul style="list-style-type: none"> • 4K Cameras • Smartphones • Video surveillance • Drones • Internet of Things (IoT) • Infotainment systems 	<ul style="list-style-type: none"> • Surveillance cameras • Drones • Industrial IoT gateways • Factory Automation • Professional Cameras • High-resolution Camcorders • Drive recorders • Artificial intelligence • Machine learning • Video streaming • Real-time analytics



	CompactFlash card	CompactFlash Card 800X	CompactFlash Card 866X
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Model No.	CFI-509	CFC-509	CFC-5010
Interface	PCMCIA/IDE		
Form Factor	CF card		
Flash Type	2D MLC/ pSLC/SLC	2D MLC	3D TLC NAND
Capacity	SLC: 1GB - 64GB MLC: 4GB - 128GB pSLC-2GB - 32GB	8GB - 128GB	16GB - 256GB
Max Channel	2 CH	2 CH	4 CH
Data Transfer Mode	PIO Mode 0~6/Multi-Word DMA Mode 0~4/Ultra DMA Mode 0~7	PIO Mode 6/Multi-Word DMA Mode 4/Ultra DMA Mode 7	PIO Mode 6/Multi Word DMA Mode 4/ PCMCIA Ultra DMA Mode 5/ Ultra DMA Mode 7
Sequential R/W (MB/sec.max)	SLC: Up to 88/85MB/s MLC: Up to 100/80MB/s pSLC: Up to 70 / 60MB/s	Up to 110/80MB/s	Up to 160/145MB/s
Random Read/Write	TBD	TBD	8/25MB
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C	Commercial: 0°C~70°C	Commercial: 0°C~70°C Industrial: -40°C ~85°C
MTBF	2,000,000hrs		
Features	<ol style="list-style-type: none"> Compliant with CFA 6.0/3.0 specifications Error Correction Code (ECC) Static/Dynamic Wear leveling Bad Block Management Secure Erase Power Management Write Protect 		<ol style="list-style-type: none"> VPG 20 and VPG 65 Compliant TRIM Bad Block Management Firmware Update Smart Refresh™ Security erase Write Protect Intelligent ECC Capacity (LDPC or SECC) Global Wear Levelling
Application	<ul style="list-style-type: none"> OS Storage GPS / POS Drive recorder Camera Server Industrial PC/machines Medical devices Automatic Ticket Vending Machines Automatic Ticket Gates Pass-Vending Machines KIOSKS 	<ul style="list-style-type: none"> OS Storage GPS / POS Drive recorder Camcorder Server Industrial PC Medical devices Automatic Ticket Vending Machines Automatic Ticket Gates Pass-Vending Machines KIOSKS 	<ul style="list-style-type: none"> 4K Video recording Camcorders Digital single-lens reflex & mirrorless cameras

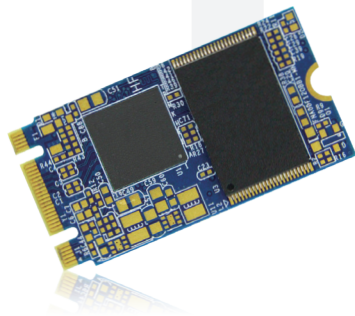
M.2 PCIe



M.2 2280 PCIe SSD

Model No.	P80-E8	P80-E8T	P80-E12	P80-E12C	P80-E13T	P80-E16
Capacity	128GB - 1TB	32GB - 1TB	256GB - 8TB	128GB - 512GB	128GB - 2TB	512GB - 2TB
Interface	PCIe Gen3x2 NVMe		PCIe Gen3x4 NVMe		PCIe Gen4x4 NVMe	
Form Factor	M.2					
Flash Type	3D TLC					
Max Channel	4	4	8	4	4	8
Extended DRAM	DDR3/DDR3L	DRAM-Less	DDR3L/DDR4	DDR3L/DDR4	DRAM-Less	DDR4
Security	AES	AES	AES/ TCG Opal	AES/ TCG Opal	AES/ TCG Opal	AES/ TCG Opal
Sequential Read/Write (up to)	1600/1100MB/s	1600/1100MB/s	3450/3150MB/s	2100/1700 MB/s	2500/2100MB/s	5000/4400MB/s
Random Read/Write(up to)	240K/180K IOPS	230K/180K IOPS	600K/600K IOPS	420K/420K IOPS	350K/ 450K IOPS	420K/420K IOPS
Dimension (LxWxH/mm)	80 x 22 x 1.5					
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C					
Features	<ol style="list-style-type: none"> LDPC Power loss Data Protection End-to-End Data Protection Encryption Thermal Monitoring TCG OPAL & Pyrite support Best in class speed & reliability 					
Application	PC/ Laptop					

M2 PCIe



M.2 2242 PCIe SSD

U.2 2.5 inch PCIe SSD

	M.2 2242 PCIe SSD			U.2 2.5 inch PCIe SSD
Model No.	P42-E8	P42-E8T	P42-E13T	P25-E12
Capacity	128GB - 1TB	64GB - 512GB	128GB - 2TB	240GB/ 480GB/ 960GB/ 1.92TB/ 3.84TB/ 7.68TB
Interface	PCIe Gen3x2 NVMe	PCIe Gen3x2 NVMe	PCIe Gen3x4 NVMe	PCIe Gen3x4 NVMe
Form Factor	M.2	M.2	M.2	U.2 2.5 inch
Flash Type	3D TLC	3D TLC	3D TLC	3D TLC
Max Channel	4	4	4	8
External DRAM	DDR3/DDR3L	DRAM-Less	DRAM-Less	DDR3L/DDR4
Sequential Read/Write (up to)	1600/1100MB/s		2500/2100MB/s	3,200MBs/1,000MBs
Random Read/Write	240K/180K IOPS		350K/450K IOPS	400K/30K IOPS
Security	AES		AES/ TCG Opal	AES/ TCG Opal
Dimension (LxWxH/mm)	42 x 22 x 1.5			100 x 69.85 x 7
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C		Commercial: 0°C~70°C	Commercial: 0°C~70°C Industrial: -40°C ~85°C
Features	1. StrongECC + RAID 2. Power loss Data Protection 3. End-to-End Data Protection 4. Encryption 5. Thermal Monitoring 6. TCG OPAL & Pyrite support 7. Best in class speed & reliability			1. End to end data path protection 2. Thermal throttling 3. SmartECC™ 4. SmartRefresh™ 5. Drive log 6. Support of AES/TCG OPAL 7. Hardware Power Loss Protection Support 8. Supports Windows TRIM command 9. SMART data integrity protection 10. Supports Scalable Over-Provision
Application	PC/ Laptop			Enterprise Servers, Cloud and Hyperscale Computing, Big Data Analytics, Deep Learning

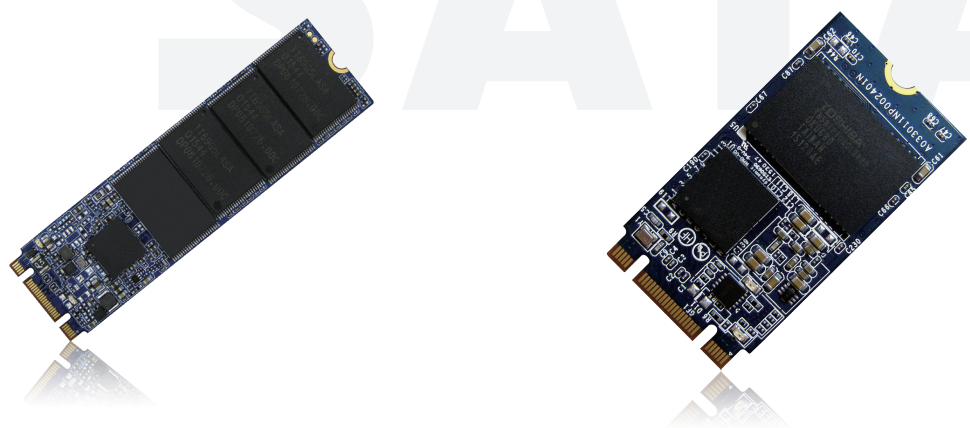
CFX PCIe



CFexpress PCIe SSD

Model No.	C21-E8T	C21-E13T
Capacity	64GB - 512GB	128GB - 2048GB
Interface	PCIe Gen3x2 NVMe	
Form Factor	CFX Type B	
Flash Type	3D TLC	
Connector	21 pins	
External DRAM	DRAM-Less	
Channel	4	
Sequential Read/Write (up to)	1550/950 MB/s	2500/2100MB/s
ECC Engine	SECC + RAID ECC	LDPC + RAID ECC
Operating Voltage	3.3V±5%	3.3V±5%
Security	AES/ TCG Opal/Pyrite	AES/ TCG Opal/Pyrite
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C	Commercial: 0°C~70°C Industrial: -40°C ~85°C
Dimension (LxWxH/mm)	29.6 x 38.5 x 3.8	
Features	<ol style="list-style-type: none"> 1. End to end data path protection 2. Thermal throttling 3. SmartECC 4. SmartRefresh 5. Drive log 6. Support HMB(Host Memory Buffer) 7. High IOPS with lower power; good for HD image catching or high-level Camcorder recording 	<ol style="list-style-type: none"> 1. End to end data path protection 2. Thermal throttling 3. SmartECC 4. SmartRefresh 5. Drive log 6. Support HMB(Host Memory Buffer)
Application	<ul style="list-style-type: none"> • Digital imaging (High-end DSLRs and mirrorless still cameras, Broadcast CamCorder) • Cloud Computing • Transportation • Embedded & IPC • Gaming 	

M.2 SATA



M.2 2280 SATA SSD

M.2 2242 SATA SSD

Model No.	S80-11T	S80-12	S80-13T	S42-11T	S42-12
Capacity	SLC: 8GB - 128GB MLC: 4GB - 512GB pSLC: 2GB - 256GB 3D TLC: 32GB - 1TB	pSLC: 2GB - 256GB 3D TLC: 32GB - 512GB	3D TLC: 128GB - 2TB	SLC: 8GB - 64GB MLC: 4GB - 512GB pSLC: 2GB - 256GB 3D TLC: 32GB - 512GB	128GB - 512GB
Interface	SATA III			SATA III	
Form Factor	M.2			M.2	
Flash Type	SLC/MLC/pSLC/3D TLC	pSLC/3D TLC	3D TLC	SLC/MLC/pSLC/3D TLC	3D TLC
Max Channel	2	8	4	4	4
Extended DRAM	DRAM-Less	DDR3L/DDR4	DRAM-Less	DRAM-Less	DDR4X1
Security	AES	AES/ TCG Opal	AES/ TCG Opal	N/A	AES/ TCG Opal
Sequential Read/Write (up to)	SLC: 540/420MB/s MLC: 550/490MB/s pSLC: 550/490MB/s 3D TLC: 550/500MB/s	pSLC: 550/530MB/s 3D TLC: 550/540MB/s	550/520MB/s	SLC: 540/310MB/s MLC: 550/490MB/s pSLC: 550/490MB/s 3D TLC: 550/490MB/s	550/530MB/s
Random Read/Write(up to)	85K/80K IOPS	98K /90K IOPS	95K/90K IOPS	85K/80K IOPS	98K/90K IOPS
PLP	Support Firmware PLP	Support Hardware PLP	N/A	N/A	Support HW PLP
Dimension (LxWxH/mm)	80 x 22 x 3.8			42 x 22 x 3.75	
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C			Commercial: 0°C~70°C Industrial: -40°C ~85°C	
Features	1. Power Loss 2. Data Protection 3. Write Protection 4. Quick Erase 5. Thermal Monitoring 6. LDPC + RAID	1. Power Loss Data Protection 2. Write Protection 3. Quick Erase 4. Thermal Monitoring 5. TCG Opal	1. Write Protection 2. Quick Erase 3. Thermal Monitoring 4. TCG Opal	1. Write Protection 2. Quick Erase 3. Thermal Monitoring	1. Power Loss 2. Data Protection 3. Write Protection 4. Quick Erase 5. Thermal Monitoring 6. LDPC + RAID
Application	PC/ Laptop			PC/ Laptop	

SATA SSD



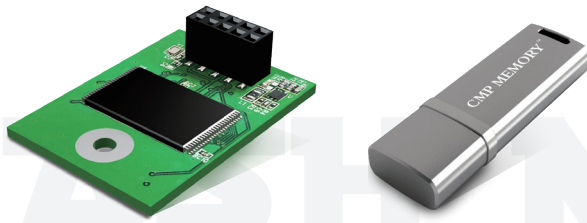
2.5 inch SATA SSD

1.8 inch SATA SSD

Model No.	S25-10	S25-11T	S25-12	S25-13T	S18-11T
Capacity	SLC: 8GB - 128GB MLC: 4GB - 512GB pSLC: 2GB - 256GB 3D TLC: 32GB - 1TB	pSLC: 2GB - 256GB 3D TLC: 32GB - 512GB	256GB - 8TB	128GB - 2TB	SLC: 8GB - 128GB MLC: 32GB - 512GB pSLC: 16GB - 256GB
Interface	SATA III				SATA III
Form Factor	2.5 inch				1.8 inch
Flash Type	SLC/MLC/pSLC/3D TLC		3D TLC		SLC/MLC/pSLC/3D TLC
Max Channel	8	2	8	4	2
Extended DRAM	DDR3/DDR3L	DRAM-Less	DDR3L/DDR4	DRAM-Less	DRAM-Less
Security	AES/ TCG Opal	N/A	AES/ TCG Opal	AES/ TCG Opal	N/A
Sequential Read/Write (up to)	SLC: 540/420MB/s MLC: 550/470MB/s pSLC: 550/470MB/s 3D TLC: 550/530MB/s		550/530MB/s	550/520MB/s	SLC: 540/420MB/s MLC: 550/470MB/s pSLC: 550/470MB/s 3D TLC: 550/500MB/s
Random Read/Write(up to)	100K/90K IOPS	95K/85K IOPS	98K/90K IOPS	95K/ 90K IOPS	95K/85K IOPS
MTBF	MLC/3D TLC: 2,000,000 hrs pSLC: 2,500,000 hrs. SLC: 3,000,000 hrs.		>3 million hours		MLC: 2,000,000 hrs pSLC: 2,500,000 hrs SLC: 3,000,000 hrs
Dimension (LxWxH/mm)	100.1 x 69.85 x 7				78.5 x 54 x 5
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C				Commercial: 0°C~70°C Industrial: -40°C ~85°C
Features	<ol style="list-style-type: none"> 1. End to end data protection 2. Power Loss Data Protection 3. Write Protection 4. Quick Erase 5. TRIM command 6. Thermal Monitoring 				<ol style="list-style-type: none"> 1. End to end data protection 2. Power Loss Data Protection 3. Write Protection 4. Quick Erase 5. TRIM command 6. Thermal Monitoring
Application	<ul style="list-style-type: none"> • Rugged Computers • Combat • Unmanned Vehicle Systems 		<ul style="list-style-type: none"> • Communication Systems • Management Systems • Automotive (Engine Control Unit, Instrument Cluster, Real-view Camera) 		<ul style="list-style-type: none"> • Server • Retail • Automation • Casio Gaming • Industrial / Embedded

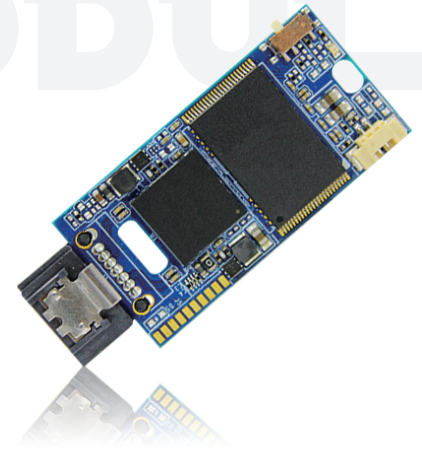


	mSATA (MO-300)		mSATA Mini (MO-300B)	Half Slim (MO-297)	
Model No.	MOA-11T	MOA-10C	MOB-11T	MOH-10C	MOH-11T
Capacity	SLC: 8GB - 128GB MLC: 4GB - 1TB pSLC: 2GB - 256GB 3D TLC: 32GB - 1TB	SLC: 32GB - 128GB MLC: 64GB - 1TB	MLC: 4GB - 32GB pSLC: 2GB - 16GB 3D TLC: 32GB - 256GB	SLC: 8GB - 64GB MLC: 4GB - 512GB pSLC: 2GB - 256GB 3D TLC: 32GB - 512GB	SLC: 8GB - 128GB MLC: 4GB - 1TB pSLC: 2GB - 256GB 3D TLC: 32GB - 1TB
Interface	SATA III 6Gbps (backward compatible to SATA I/II)				
Form Factor	mSATA MO-300A		mSATA mini MO-300B	Half Slim MO-297	
Flash Type	SLC/MLC/pSLC/3D TLC	SLC/MLC	MLC/pSLC/3D TLC	SLC/MLC/pSLC/3D TLC	SLC/MLC/pSLC/3D TLC
Max Channel	2	8	2	2	-
Extended DRAM	DRAM-Less	DDR3/DDR3L	DRAM-Less	DRAM-Less	DDR4X1
Security	N/A	AES/ TCG Opal	N/A	N/A	AES/ TCG Opal
Sequential Read/Write (up to)	SLC: 540/420MB/s MLC: 550/490MB/s pSLC: 550/490MB/s 3D TLC: 550/500MB/s	SLC: 530/490MB/s MLC: 540/520 MB/s	MLC: 550/160MB/s pSLC: 550/160MB/s 3D TLC: 550/500MB/s	SLC: 540/310MB/s MLC: 550/490MB/s pSLC: 550/490MB/s 3D TLC: 550/490MB/s	550/530MB/s
Random Read/Write(up to)	82K/86K IOPS	90K/80K IOPS	95K/85K IOPS	85K/80K IOPS	98K/90K IOPS
PLP	N/A	Support PLP Circuit	N/A	-	N/A
MTBF	MLC/3D TLC: 2,000K hrs pSLC: 2,500K hrs SLC: 3,000K hrs	MLC: 2,000K hrs SLC: 3,000K hrs	MLC/3D Bics3: 2,000K hrs pSLC: 2,500K hrs	MLC/3D TLC: 2,000K hrs pSLC: 2,500K hrs	MLC/3D TLC: 2,000K hrs pSLC: 2,500K hrs SLC: 3,000K hrs
Dimension (LxWxH/mm)	50.8 x 29.85 x 4		26.8 x 29.85 x 4	54 x 39 x 4	
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C				
Features	<ol style="list-style-type: none"> TRIM command Write Protection Quick Erase Thermal Monitoring Data Loss Protection End to End Data Protection 		<ol style="list-style-type: none"> Static and Dynamic Wear Leveling Bad Block Management TRIM SMART Over-Provision 	<ol style="list-style-type: none"> TRIM command Write Protection Quick Erase Thermal Monitoring Data Loss Protection End to End Data Protection 	
Application	<ul style="list-style-type: none"> Rugged tablet PC Set-top box Internet-enabled TV Industrial PC / Single-board computer Digital signage Industrial automation & control Test & measurement instrumentation Blade server Gateway / Switch Network firewall Video surveillance Black box data recorder GPS and telematics In-vehicle infotainment Multi-function printer 		<ul style="list-style-type: none"> POS Set-top Box Multi Function Printer Notebook Rugged tablet PC Industrial PC 	<ul style="list-style-type: none"> Rugged tablet PC Set-top box Internet-enabled TV Industrial PC Single-board computer Digital signage Industrial automation & control Test & measurement instrumentation Blade server Gateway / Switch Network firewall Video surveillance Black box data recorder GPS and telematics In-vehicle infotainment Multi-function printer 	



USB Flash Module	USB 3.0 Flash Drive (Robust)
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Model No.	U2M-03	U3D-03
Capacity	SLC: 1GB - 32GB MLC: 4GB - 64GB pSLC: 2GB - 32GB	2D SLC: 128MB - 32GB 2D MLC: 4GB - 128GB 2D pSLC: 2GB - 256GB
Interface	USB2.0	USB3.0 Gen 1
Form Factor	Horizontal	Standard
Connector	10 pin	Type-A
Flash Type	SLC/MLC/pSLC	SLC/MLC/pSLC
Channel	2	2
Sequential Read/Write (up to)	up to 34/25MB/sec	2D SLC: 170/120MB/s 2D MLC: 190/140MB/s 2D pSLC: 190/125MB/s
Shocks	1500G@0.5ms	1500G@0.5ms
Vibration	20G@80Hz~2000Hz	20G@80Hz~2000Hz
Data Retention	10 years	10 years
MTBF	SLC: 3,000,000 hrs MLC: 2,000,000 hrs pSLC: 2,500,000 hrs	2D SLC: 3,000,000 hrs 2D MLC: 2,000,000 hrs 2D pSLC: 2,500,000 hrs
Endurance	~2,000,000 erase / write	~2,000,000 erase / write
Dimension (LxWxH/mm)	37.90 x 26.65 x 7.40	55.80 x 18.00 x 9.00
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C	Commercial: 0°C~70°C Industrial: -40°C ~85°C
Features	<ol style="list-style-type: none"> Compliant with High Speed USB 2.0 (backward compatible with USB 1.1 ports) Advanced wear leveling algorithms and ECC Fixed disk and removable configuration options Controlled BOM & FW 	<ol style="list-style-type: none"> USB 3.1 flash drive with backwards compatibility (USB 3.0, USB 2.0) Advanced Flash Management: ECC, Static & Dynamic Wear Leveling, Bad Block Management Metal housing for robust usage 30μ golden finger for highly reliable data transfer quality Commercial and industrial temperature grade Controlled BOM & FW
Application	<ul style="list-style-type: none"> Industrial Embedded Systems Medical Solutions Point-of-Sales Gaming Industry Automation Solutions 	<ul style="list-style-type: none"> Embedded Computing Networking Equipment Industrial PCs Automation Test and measurement Surveillance & Navigation Mobile computers IoT Casino gaming



SATA 7-pin Flash Module

Model No.	S7V-11T /S7R-11T /S7L-11T
Capacity	SLC: 1GB up to 64GB MLC: 4GB up to 256GB pSLC: 2GB up to 128GB
Interface	SATA 3.0 (6Gb/s)
Form Factor	SATA Disk Module Vertical / Horizontal left & Right
Connector	SATA 7-Pin
Flash Type	SLC/MLC/pSLC
Sequential Read/Write (up to)	SLC: 500/150MB/s MLC: 500/180MB/s pSLC: 500/180MB/s
Random Read/Write(up to)	85K/80KIOPS
Channel	4
Dimension (LxWxH/mm)	44.70 x 22.20 x 1.0
Op. Temperature	Commercial: 0°C~70°C Industrial: -40°C ~85°C
MTBF	>3 million hours
Features	<ol style="list-style-type: none"> Power Loss Data Protection Write Protection Quick Erase Thermal Monitoring
Application	PC/ Laptop

Note: *Speed may vary due to host hardware, software, usage, and storage capacity

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To fit your
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