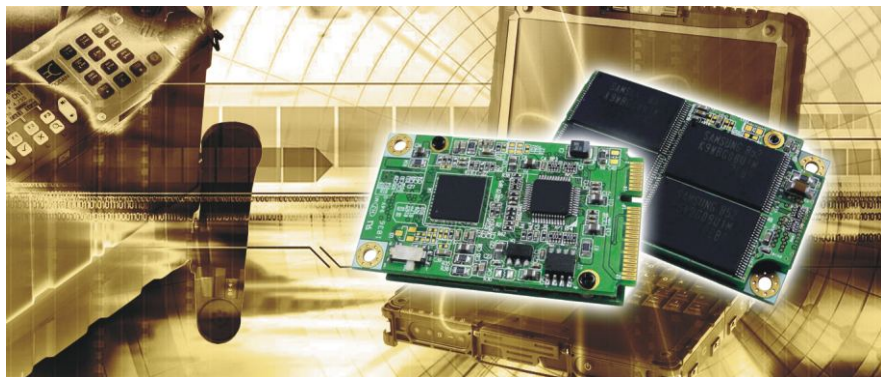


HERCULES Series

Industrial mini PCI-e Flash (MPM) Module supports Write Protect Function



Product features

- SLC - NAND type flash technology
- Compliant with NVMe 1.0, AHCI 1.0 and ACPI 2.0
- Compact form factor for highly integrated system
- Supports standard ATA command
- Supports high speed PCI Express host bus
- Bootable for system installation
- Supports write protect function by switch
- Performance up to 95.9 MB/sec
- Capacity from 16GB up to 64GB

Product specifications

Compatibility	➤ Compliant with NVMe 1.0, AHCI 1.0 and ACPI 2.0	Write protect function	Mechanism design ➤ By switch
Flash technology	➤ SLC-NAND type flash based	Power consumption	Power requirement ➤ +3.3 V ± 5%
Host Interface	➤ 52 pins mini PCI Express host slot	Reading mode	➤ 353 mA (Max.)
	➤ PCI Express x1 lane host bus	Writing mode	➤ 354 mA (Max.)
Performance		Sleeping mode	➤ 117 mA (Max.)
Data transfer mode	➤ PIO-4 mode, MWDMA-2 mode and UDMA-6 mode (def.)	Reliability	Wear-leveling ➤ Global wear-leveling algorithms
Sequential read	➤ 95.9 MB/sec (Max. /4-channel)	MTBF	➤ > 2,000,000 hours
Sequential write	➤ 93.0 MB/sec (Max. /4-channel)	ECC	➤ 8 bits or 15 bits per 512 bytes block
Average access time	➤ 0.3 ms	Endurance	➤ > 2,000,000 cycles
Environmental specification		Data retention	➤ 10 years
Operating temp.	➤ STD. 0°C ~ 70°C / IND. -40°C ~ +85°C	Physical specification	
Non-operating temp.	➤ STD. -20°C ~ +80°C / IND. -50°C ~ +95°C	Weight (max.)	➤ 19.0 g ± 2 g / 0.684 oz.
Humidity	➤ 10% ~ 95% non-condensing	Dimension(W x L x H)	➤ 16 - 32GB : 30.00 x 50.95 x 6.90 (mm)
Vibration	➤ 15G compliance to MIL-STD-810F		➤ 64GB : 30.00 x 50.95 x 8.13 (mm)
Shock	➤ 40g, 11ms operating on ground compliance to MIL-STD-810G	Conformal coating	➤ Option for special request
Altitude	➤ 70,000 feet	Warranty	
		Standard grade	➤ 3 years
		Industrial grade	➤ 5 years

Write-protect switch



Operating temperature supports standard grade 0°C ~ 70°C and industrial grade -40°C ~ +85°C

Part number list - Industrial mini PCI-e flash module supports write protection

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	16GB	SBMPM016G-MICSC	WBMPM016G-MIISI
	32GB	SBMPM032G-MICSC	WBMPM032G-MIISI
	64GB	SBMPM064G-MICSC	WBMPM064G-MIISI

Part number decoder

X1	X2	X3	X4	X5	X6	X7	X8	X9	—	X11	X12	X13	X14	X15	/	C			
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Example

S	B	M	P	M	0	6	4	G	—	M	I	C	S	C					
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X1 ➤ Grade

S : Standard grade operating temp. 0°C ~ 70°C
W : Industrial grade operating temp. -40°C ~ +85°C

X2 ➤ The material of frame kit

B : Bare (without casing)

X3 X4 X5 ➤ Product category

MPM : mini PCI-e Flash (MPM) Module supports write protect

X6 X7 X8 X9 ➤ Capacity

16G : 16GB
32G : 32GB
64G : 64GB

X11 ➤ Controller

M : SMI (HERCULES Series)

X12 ➤ Controller version

A,B,C.....I

X13 ➤ Controller grade

C : Commercial grade
I : Industrial grade

X14 ➤ Flash IC

S : Samsung SLC-NAND flash IC

X15 ➤ Flash IC grade

C : Commercial grade
I : Industrial grade

C ➤ Reserved for specific requirement

C : Conformal-coating