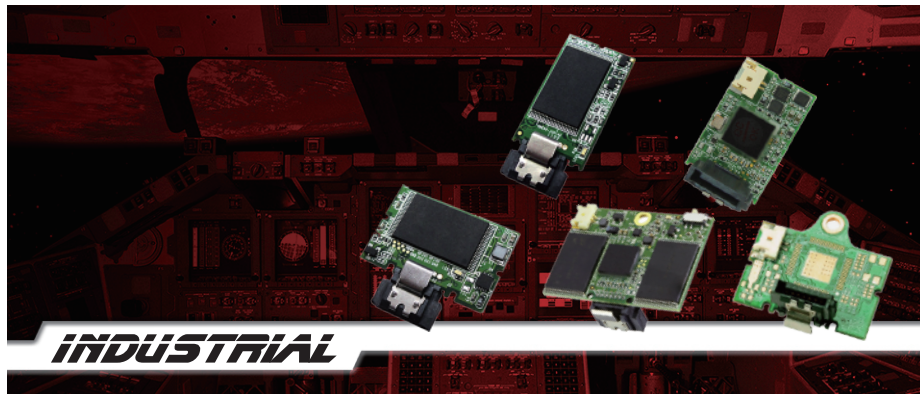


HERMES-J Series

MLC micro SATA III Flash (MSF) Module



Product Feature


- MLC - NAND type flash technology
- Standard 7 pins SATA female connector
- 5-Form-factor supports vertical and horizontal types
- Compliant with SATA 1.0a/ 2.6/ 3.0 specification
- Capacity from 4GB up to 128GB
- S.M.A.R.T.(Self-Monitoring, Analysis and Reporting Technology)
- Power request optional: Built-in power pin-7 (w/tuse)
- Power request optional: 5V power input power cable (w/o fuse)
- Maximum sequential read speed 210.0 MB/sec
- Maximum sequential read write 80.0 MB/sec

Product Specification

Compatibility	➤ SATA 1.0a, SATA 2.6 and SATA3.0 Specification compliance	Power consumption	
Flash technology	➤ MLC-NAND type flash based	Power requirement	➤ 5V ± 5%
Form-factor	➤ Vertical: STD. / Low profile ➤ Horizontal: STD. / Low profile	Reading mode	➤ 110mA (Max.)
Host Interface	➤ Standard SATA-II 7-pin (data)	Writing mode	➤ 125mA (Max.)
Performance		Idle mode	➤ 90mA (Max.)
Data transfer rate	➤ SATA 1.5Gb/s, 3.0Gb/s, 6.0Gb/s	Reliability	
Sequential read	➤ 210.0 MB/sec (Max.)	Wear-Leveling	➤ Static wear-leveling algorithms
Sequential write	➤ 80.0 MB/sec (Max.)	ECC	➤ 40 bits per 1024 bytes block
Random access time	➤ 0.1ms (estimated)	Data retention	➤ 10 Years
Environmental specification		Physical specification	
Operating temp.	➤ STD. 0°C~70°C/W.T.-40°C~+85°C	Weight	➤ 20 g (0.71 oz)
Non-operating temp.	➤ STD. -20°C~+80°C/W.T.-50°C~+95°C	Dimension(W x L x H)	
Humidity	➤ 10% ~ 95% non-condensing	Vert. STD. (Bare)	➤ 18.00 x 38.50 x 7.00 (mm)
Vibration	➤ 7 Hz to 2K Hz, 20G, 3 axes	Verti. Low pro. (Bare)	➤ 30.10 x 28.75 x 7.00 (mm)
Shock	➤ 0.5ms, 1500G, 3 axes	Hori. STD. (Bare)	➤ 18.00 x 30.30 x 12.50 (mm)
Altitude	➤ 70,000 feet	Hori. Low pro. (Bare)	➤ 40.00 x 30.00 x 12.30 (mm)
		Low pro. with mounting hole	➤ 30.00 x 27.50 x 12.05 (mm)
		Conformal coating	➤ Option for special request
		Warranty	
		MLC(standard/wide temp.)	➤ 2 years / Within 3k Erasing counts

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C

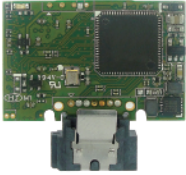
Part number list - Vertical type standard form factor

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	4GB	SBMSF004G-JJCTMB-VS(-F)	WBMSF004G-JJCTMB -VS(-F)/C
	8GB	SBMSF008G-JJCTMB-VS(-F)	WBMSF008G-JJCTMB -VS(-F)/C
	16GB	SBMSF016G-JJCTMB-VS(-F)	WBMSF016G-JJCTMB -VS(-F)/C
	32GB	SBMSF032G-JJCTMB-VS(-F)	WBMSF032G-JJCTMB -VS(-F)/C
	64GB	SBMSF064G-JJCTMB-VS(-F)	WBMSF064G-JJCTMB -VS(-F)/C
	128GB	SBMSF128G-JJCTMB-VS(-F)	WBMSF128G-JJCTMB -VS(-F)/C

Remarks : -F: optional item power pin-7 with fuse

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C


Part number list - Vertical type low profile form factor

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	4GB	SBMSF004G-JJCTMB-VL(-F)	WBMSF004G-JJCTMB-VL(-F)/C
	8GB	SBMSF008G-JJCTMB-VL(-F)	WBMSF008G-JJCTMB-VL(-F)/C
	16GB	SBMSF016G-JJCTMB-VL(-F)	WBMSF016G-JJCTMB-VL(-F)/C
	32GB	SBMSF032G-JJCTMB-VL(-F)	WBMSF032G-JJCTMB-VL(-F)/C
	64GB	SBMSF064G-JJCTMB-VL(-F)	WBMSF064G-JJCTMB-VL(-F)/C
	128GB	SBMSF128G-JJCTMB-VL(-F)	WBMSF128G-JJCTMB-VL(-F)/C

Remarks : -F: optional item power pin-7 with fuse

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C


Part number list - Horizontal type standard form factor

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	4GB	SBMSF004G-JJCTMB-HS(-F)	WBMSF004G-JJCTMB-HS(-F)/C
	8GB	SBMSF008G-JJCTMB-HS(-F)	WBMSF008G-JJCTMB-HS(-F)/C
	16GB	SBMSF016G-JJCTMB-HS(-F)	WBMSF016G-JJCTMB-HS(-F)/C
	32GB	SBMSF032G-JJCTMB-HS(-F)	WBMSF032G-JJCTMB-HS(-F)/C
	64GB	SBMSF064G-JJCTMB-HS(-F)	WBMSF064G-JJCTMB-HS(-F)/C
	128GB	SBMSF128G-JJCTMB-HS(-F)	WBMSF128G-JJCTMB-HS(-F)/C

Remarks : -F: optional item power pin-7 with fuse

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C


Part number list - Horizontal type low profile form factor

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	4GB	SBMSF004G-JJCTMB-HL(-F)	WBMSF004G-JJCTMB-HL(-F)/C
	8GB	SBMSF008G-JJCTMB-HL(-F)	WBMSF008G-JJCTMB-HL(-F)/C
	16GB	SBMSF016G-JJCTMB-HL(-F)	WBMSF016G-JJCTMB-HL(-F)/C
	32GB	SBMSF032G-JJCTMB-HL(-F)	WBMSF032G-JJCTMB-HL(-F)/C
	64GB	SBMSF064G-JJCTMB-HL(-F)	WBMSF064G-JJCTMB-HL(-F)/C
	128GB	SBMSF128G-JJCTMB-HL(-F)	WBMSF128G-JJCTMB-HL(-F)/C

Remarks: -F: optional item power pin-7 with fuse

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C

Part number list - Horizontal type low profile form factor with mounting hole

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	4GB	SBMSF004G-JJCTMB-HO(-F)	WBMSF004G-JJCTMB-HO(-F)/C
	8GB	SBMSF008G-JJCTMB-HO(-F)	WBMSF008G-JJCTMB-HO(-F)/C
	16GB	SBMSF016G-JJCTMB-HO(-F)	WBMSF016G-JJCTMB-HO(-F)/C
	32GB	SBMSF032G-JJCTMB-HO(-F)	WBMSF032G-JJCTMB-HO(-F)/C
	64GB	SBMSF064G-JJCTMB-HO(-F)	WBMSF064G-JJCTMB-HO(-F)/C
	128GB	SBMSF128G-JJCTMB-HO(-F)	WBMSF128G-JJCTMB-HO(-F)/C

Remarks : -F: optional item power pin-7 with fuse

Part Number Decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 X16 — Y1 Y2 / C C

Example 1 -Standard grade MSF 4GB with conformal coating

S B M S F 0 0 4 G — J J C T M B — V S / C

Example 2 -Standard grade MSF 32GB with power pin-7 fuse & conformal coating

S B M S F 0 3 2 G — J J C T M B — H S — F / C

X1 Grade

S : Standard grade operating temp. 0° C~70 ° C

W : Wide temp. grade operating temp. -40° C~+85 ° C

X2 The material of casing

B : Bare (without casing)

X3 X4 X5 Product category

MSF : micro SATA flash module

X6 X7 X8 X9 Capacity

004G : 4GB **032G** : 32GB

008G : 8GB **064G** : 64GB

016G : 16GB **128G** : 128GB

X11 Controller

J : HERMES Series

X12 Controller version

A, B, C, D.....

X13 Controller grade

C : Commercial grade

X14 Flash IC

T : Toshiba NAND flash IC

X15 Flash IC grade

M : MLC-NAND flash IC

X16 Generation

B : 15 nm

Y1 Y2 MSF orient only

VS : Vertical type standard form factor

VL : Vertical type low profile form factor

HS : Horizontal type standard form factor

HL : Horizontal type low profile form factor

HO : Horizontal type low profile form factor with mounting hole

C Reserved for specific requirement

F : Power pin-7 with fuse

C : Conformal-coating