

HERMES-D Series

Industrial micro SATA II Flash (MSF) Module




Product features

- ❖ SLC - NAND type flash technology
- ❖ High speed item (plastic casing) : 2GB ~ 32GB (Quad CH.)
- ❖ Normal speed item (w/o casing) : 128MB ~ 8GB (Single CH.)
- ❖ Standard 7 pins SATA female connector
- ❖ Form-factor supports vertical and horizontal types
- ❖ High speed item supports write protect function
- ❖ Power request optional: Built-in power pin-7 (w/fuse) or 5V power input power cable (w/o fuse)

Product specifications


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| <p>Compatibility</p> <ul style="list-style-type: none"> ❖ SATA 1.0a and SATA 2.6 specification compliance <p>Flash technology</p> <ul style="list-style-type: none"> ❖ SLC-NAND type flash based <p>Form-factor</p> <p>High speed</p> <ul style="list-style-type: none"> ❖ Vertical type : Standard <p>Normal speed</p> <ul style="list-style-type: none"> ❖ Vertical type : Standard / Low profile ❖ Horizontal type : Standard / Low profile / Low profile with mounting hole <p>Host Interface</p> <ul style="list-style-type: none"> ❖ Standard 7 pins SATA female connector <p>Performance</p> <p>Data transfer rate</p> <ul style="list-style-type: none"> ❖ Serial ATA standard Gen-I (1.5Gbps) and Gen-II (3.0Gbits) <p>Sequential read</p> <ul style="list-style-type: none"> ❖ 131.2 MB/sec (Quad CH. Max.) ❖ 34.5 MB/sec (Single CH. Max.) <p>Sequential write</p> <ul style="list-style-type: none"> ❖ 126.3 MB/sec (Quad CH. Max.) ❖ 33.01 MB/sec (Single CH. Max.) <p>Random access time</p> <ul style="list-style-type: none"> ❖ 0.1 ms <p>Environmental specification</p> <p>Operating temp.</p> <ul style="list-style-type: none"> ❖ STD. 0°C ~ 70°C / IND. -40°C ~ +85°C <p>Non-operating temp.</p> <ul style="list-style-type: none"> ❖ STD. -20°C ~ +80°C / IND. -50°C ~ +95°C <p>Humidity</p> <ul style="list-style-type: none"> ❖ 10% ~ 95% non-condensing <p>Vibration</p> <ul style="list-style-type: none"> ❖ 15G compliance to MIL-STD-810F <p>Shock</p> <ul style="list-style-type: none"> ❖ 1,500G compliance to MIL-STD-810F <p>Altitude</p> <ul style="list-style-type: none"> ❖ 70,000 feet | <p>Write protect function</p> <p>Mechanism design</p> <ul style="list-style-type: none"> ❖ By switch (High speed item only) <p>Power consumption</p> <p>Power requirement</p> <ul style="list-style-type: none"> ❖ 5V±10% Built-in power pin-7(w/fuse) ❖ 5V power input power cable(w/o fuse) <p>Reading mode</p> <ul style="list-style-type: none"> ❖ 240.0 mA (Max.) <p>Writing mode</p> <ul style="list-style-type: none"> ❖ 270.0 mA (Max.) <p>Idle mode</p> <ul style="list-style-type: none"> ❖ 150.0 mA (Max.) <p>Reliability</p> <p>Wear-leveling</p> <ul style="list-style-type: none"> ❖ Static wear-leveling algorithms <p>MTBF</p> <ul style="list-style-type: none"> ❖ > 4,000,000 hours <p>ECC</p> <ul style="list-style-type: none"> ❖ 16 bits per 512 bytes block <p>Endurance</p> <ul style="list-style-type: none"> ❖ > 2,000,000 cycles <p>Physical specification</p> <p>Weight (max.)</p> <ul style="list-style-type: none"> ❖ 20 g (0.71 oz) <p>Dimension(W x L x H)</p> <p>Vert. STD. (w/ casing)</p> <ul style="list-style-type: none"> ❖ 25.85 x 39.40 x 8.00 (mm) <p>Vert. STD. (bare)</p> <ul style="list-style-type: none"> ❖ 18.00 x 38.50 x 7.00 (mm) <p>Vert. Low pro. (bare)</p> <ul style="list-style-type: none"> ❖ 30.10 x 28.75 x 7.00 (mm) <p>Hori. STD. (bare)</p> <ul style="list-style-type: none"> ❖ 18.00 x 35.20 x 10.20 (mm) <p>Hori. Low pro. (bare)</p> <ul style="list-style-type: none"> ❖ 30.00 x 20.08 x 10.20 (mm) <p>Low pro. with mounting hole</p> <ul style="list-style-type: none"> ❖ 30.00 x 28.80 x 10.20 (mm) <p>Warranty</p> <p>Standard grade</p> <ul style="list-style-type: none"> ❖ 3 years <p>Industrial grade</p> <ul style="list-style-type: none"> ❖ 5 years |
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Operating temperature supports Standard grade 0°C ~ 70°C and Industrial grade -40°C ~ +85°C
 Part number list - High speed Vertical type standard form factor supports write protection

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	2GB	SPMSF002G-JDCSC-VS(-F)	WPMSF002G-JDISI-VS(-F)
	4GB	SPMSF004G-JDCSC-VS(-F)	WPMSF004G-JDISI-VS(-F)
	8GB	SPMSF008G-JDCSC-VS(-F)	WPMSF008G-JDISI-VS(-F)
	16GB	SPMSF016G-JDCMC-VS(-F)	WPMSF016G-JDIMI-VS(-F)
	32GB	SPMSF032G-JDCMC-VS(-F)	WPMSF032G-JDIMI-VS(-F)


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

Part number list - Normal speed (bare) Vertical type standard form factor

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMSF128M-JDCSC-VS(-F)	WBMSF128M-JDISI-VS(-F)
	256MB	SBMSF256M-JDCSC-VS(-F)	WBMSF256M-JDISI-VS(-F)
	512MB	SBMSF512M-JDCSC-VS(-F)	WBMSF512M-JDISI-VS(-F)
	1GB	SBMSF001G-JDCSC-VS(-F)	WBMSF001G-JDISI-VS(-F)
	2GB	SBMSF002G-JDCSC-VS(-F)	WBMSF002G-JDISI-VS(-F)
	4GB	SBMSF004G-JDCMC-VS(-F)	WBMSF004G-JDIMI-VS(-F)
	8GB	SBMSF008G-JDCMC-VS(-F)	WBMSF008G-JDIMI-VS(-F)

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

Part number list - Normal speed (bare) Vertical type low profile form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMSF128M-JDCSC-VL(-F)	WBMSF128M-JDISI-VL(-F)
	256MB	SBMSF256M-JDCSC-VL(-F)	WBMSF256M-JDISI-VL(-F)
	512MB	SBMSF512M-JDCSC-VL(-F)	WBMSF512M-JDISI-VL(-F)
	1GB	SBMSF001G-JDCSC-VL(-F)	WBMSF001G-JDISI-VL(-F)
	2GB	SBMSF002G-JDCSC-VL(-F)	WBMSF002G-JDISI-VL(-F)
	4GB	SBMSF004G-JDCMC-VL(-F)	WBMSF004G-JDIMI-VL(-F)
	8GB	SBMSF008G-JDCMC-VL(-F)	WBMSF008G-JDIMI-VL(-F)

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

CF
Industrial
CompactFlash
Card

CFast
Industrial
CFast
Card

ATA
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk

UED
Industrial
Rugged Metal
USB Flash Disk

SD
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive

CF
Industrial
CompactFlash
Card

CFast
Industrial
CFast
Card

ATA
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk


UED
Industrial
Rugged Metal
USB Flash Disk

SD
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive

Operating temperature supports Standard grade 0°C ~ 70°C and Industrial grade -40°C ~ +85°C


Part number list - Normal speed (bare) Horizontal type standard form factor

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMSF128M-JDCSC-HS(-F)	WBMSF128M-JDISI-HS(-F)
	256MB	SBMSF256M-JDCSC-HS(-F)	WBMSF256M-JDISI-HS(-F)
	512MB	SBMSF512M-JDCSC-HS(-F)	WBMSF512M-JDISI-HS(-F)
	1GB	SBMSF001G-JDCSC-HS(-F)	WBMSF001G-JDISI-HS(-F)
	2GB	SBMSF002G-JDCSC-HS(-F)	WBMSF002G-JDISI-HS(-F)
	4GB	SBMSF004G-JDCMC-HS(-F)	WBMSF004G-JDIMI-HS(-F)
	8GB	SBMSF008G-JDCMC-HS(-F)	WBMSF008G-JDIMI-HS(-F)

Remark:

-F: optional item power pin-7 with fuse


Part number list - Normal speed (bare) Horizontal type low profile form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMSF128M-JDCSC-HL(-F)	WBMSF128M-JDISI-HL(-F)
	256MB	SBMSF256M-JDCSC-HL(-F)	WBMSF256M-JDISI-HL(-F)
	512MB	SBMSF512M-JDCSC-HL(-F)	WBMSF512M-JDISI-HL(-F)
	1GB	SBMSF001G-JDCSC-HL(-F)	WBMSF001G-JDISI-HL(-F)
	2GB	SBMSF002G-JDCSC-HL(-F)	WBMSF002G-JDISI-HL(-F)
	4GB	SBMSF004G-JDCMC-HL(-F)	WBMSF004G-JDIMI-HL(-F)
	8GB	SBMSF008G-JDCMC-HL(-F)	WBMSF008G-JDIMI-HL(-F)

Remark:

-F: optional item power pin-7 with fuse

Part number list - Normal speed (bare) Horizontal type lowprofile form factor with mounting hole

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMSF128M-JDCSC-HO(-F)	WBMSF128M-JDISI-HO(-F)
	256MB	SBMSF256M-JDCSC-HO(-F)	WBMSF256M-JDISI-HO(-F)
	512MB	SBMSF512M-JDCSC-HO(-F)	WBMSF512M-JDISI-HO(-F)
	1GB	SBMSF001G-JDCSC-HO(-F)	WBMSF001G-JDISI-HO(-F)
	2GB	SBMSF002G-JDCSC-HO(-F)	WBMSF002G-JDISI-HO(-F)
	4GB	SBMSF004G-JDCMC-HO(-F)	WBMSF004G-JDIMI-HO(-F)
	8GB	SBMSF008G-JDCMC-HO(-F)	WBMSF008G-JDIMI-HO(-F)

Remark:

-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 — Y1 Y2 C

Example 1 - Standard grade high speed MSF 8GB with conformal coating

S P M S F 0 0 8 G — J D C S C — V S C

Example 2 - Standard grade high speed MSF 8GB with power pin-7 fuse & conformal coating

S P M S F 0 0 8 G — J D C S C — V S F C

X1 ➤ Grade

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

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

X14 ➤ Flash IC

S : Samsung SLC-NAND flash IC

M : Micron SLC-NAND flash IC

X2 ➤ The material of casing

B : Bare (without casing)

P : Plastic casing

X15 ➤ Flash IC grade

C : Commercial grade

I : Industrial grade

X3 X4 X5 ➤ Product category

MSF : micro SATA flash module

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

X6 X7 X8 X9 ➤ Capacity

128M : 128MB 004G : 4GB

256M : 256MB 008G : 8GB

512M : 512MB 016G : 16GB

001G : 1GB 032G : 32GB

002G : 2GB

C ➤ Reserved for specific requirement

F : Power pin-7 with fuse

C : Conformal-coating

X11 ➤ Controller

J : JMicron (HERMES Series)

X12 ➤ Controller version

A,B,C.....D

X13 ➤ Controller grade

C : Commercial grade

I : Industrial grade