

# HERMES-D Series

Industrial micro SATA II Flash (MSF) Module  
supports Write Protect Function



### Product features

- SLC - NAND type flash technology
- High speed item : 2GB-64GB(Quad CH. w/casing)
- Normal speed item: 128MB-16GB(Single CH. w/o casing)
- Standard 7 pins SATA female connector
- Form-factor supports vertical and horizontal types
- S.M.A.R.T.(Self-Monitoring, Analysis and Reporting Technology) Function and monitor software supported.
- Power request optional: Built-in power pin-7 (w/fuse) or 5V power input power cable (w/o fuse)
- Capacity from 128MB up to 64GB (Quad CH.)

### Product specifications

<b>Compatibility</b>	<ul style="list-style-type: none"> <li>SATA 1.0a and SATA 2.6 Specification compliance</li> </ul>	<b>Write protection</b>	<ul style="list-style-type: none"> <li>Mechanism design by switch</li> </ul>
<b>Flash technology</b>	<ul style="list-style-type: none"> <li>SLC-NAND type flash based</li> </ul>	<b>Power consumption</b>	<ul style="list-style-type: none"> <li>240.0 mA (Max.)</li> </ul>
<b>Form-factor</b>	<ul style="list-style-type: none"> <li>Vertical type: Standard</li> </ul>	<b>Power requirement</b>	<ul style="list-style-type: none"> <li>5V ±10% Build-in power pin-7(w/fuse)</li> <li>5V ±10% power input power cable(w/o fuse)</li> </ul>
<b>High speed</b>	<ul style="list-style-type: none"> <li>Vertical type: STD. / Low profile</li> </ul>	<b>Reading mode</b>	<ul style="list-style-type: none"> <li>270.0 mA (Max.)</li> </ul>
<b>Normal speed</b>	<ul style="list-style-type: none"> <li>Horizontal type: STD. / Low profile</li> <li>/ Low profile with mounting hole</li> </ul>	<b>Writing mode</b>	<ul style="list-style-type: none"> <li>150.0 mA (Max.)</li> </ul>
<b>Host Interface</b>	<ul style="list-style-type: none"> <li>Standard SATA-II 7-pin (data)</li> </ul>	<b>Reliability</b>	<ul style="list-style-type: none"> <li>Static wear-leveling algorithms</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>Serial ATA Gen-I and Gen-II</li> </ul>	<b>Wear-leveling</b>	<ul style="list-style-type: none"> <li>&gt; 3,000,000 hours</li> </ul>
<b>Data transfer rate</b>	<ul style="list-style-type: none"> <li>131.2 MB/sec (Quad CH. Max.)</li> <li>34.5 MB/sec (Single CH. Max.)</li> </ul>	<b>MTBF</b>	<ul style="list-style-type: none"> <li>&gt; 2,000,000 cycles</li> </ul>
<b>Sequential read</b>	<ul style="list-style-type: none"> <li>126.3 MB/sec (Quad CH. Max.)</li> <li>33.0 MB/sec (Single CH. Max.)</li> </ul>	<b>Endurance</b>	<ul style="list-style-type: none"> <li>8 bits or 15 bits per 512 bytes block</li> </ul>
<b>Sequential write</b>	<ul style="list-style-type: none"> <li>0.1ms (estimated)</li> </ul>	<b>ECC</b>	<ul style="list-style-type: none"> <li>10 Years</li> </ul>
<b>Random access time</b>	<ul style="list-style-type: none"> <li>0.1ms (estimated)</li> </ul>	<b>Data retention</b>	<ul style="list-style-type: none"> <li>10 Years</li> </ul>
<b>Environmental specification</b>	<ul style="list-style-type: none"> <li>Operating temp. : STD. 0° C ~70° C / IND. -40° C ~+85° C</li> <li>Non-operating temp. : STD. -20° C ~+80° C / IND. -50° C ~+95° C</li> <li>Humidity : 10% ~ 95% non-condensing</li> <li>Vibration : 15G compliance to MIL-STD-810F</li> <li>Shock : 1,500G compliance to MIL-STD-810F</li> <li>Altitude : 70,000 feet</li> </ul>	<b>Physical specification</b>	<ul style="list-style-type: none"> <li>Weight : 20 g (0.71 oz)</li> <li>Dimension(W x L x H)</li> <li>Vert. STD. (w/ casing) : 25.85 x 39.40 x 8.00 (mm)</li> <li>Vert. STD. (Bare) : 18.00 x 38.50 x 7.00 (mm)</li> <li>Verti. Low pro. (Bare) : 30.10 x 28.75 x 7.00 (mm)</li> <li>Hori. STD. (Bare) : 18.00 x 35.20 x 10.20 (mm)</li> <li>Hori. Low pro. (Bare) : 30.00 x 20.08 x 10.20 (mm)</li> <li>Hori. W/mounting hole : 30.00 x 28.80 x 10.20 (mm)</li> </ul>
<b>Conformal coating</b>	<ul style="list-style-type: none"> <li>Option for special request</li> </ul>	<b>Warranty</b>	<ul style="list-style-type: none"> <li>STD. grade: 3 years / IND. grade: 5 years</li> </ul>

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

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)
	64GB	SPMSF064G-JDCTC-VS(-F)	WPMSF064G-JDITI-VS(-F)

### Remarks:

-F: optional item power pin-7 with fuse

Operating temperature supports Standard grade 0° C ~ 70° C and Industrial grade -40° C ~ +85° C  
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)
	16GB	SBMSF016G-JDCTC-VS(-F)	WBMSF016G-JDITI-VS(-F)

### Remarks:

-F: optional item power pin-7 with fuse

Operating temperature supports Standard grade 0° C ~ 70° C and Industrial grade -40° C ~ +85° C  
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)
	16GB	SBMSF016G-JDCTC-VL(-F)	WBMSF016G-JDITI-VL(-F)

### Remarks:

-F: optional item power pin-7 with fuse

CFC Industrial CompactFlash Card

CFA Industrial CFast Card

AFC 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 PCI-e Flash Module

MSM Industrial mini SATA Flash Module

SSD Industrial Solid State Disk

UFD Industrial Rugged Metal USB Flash Disk

SDC/H Industrial SD & SDHC Memory Card

AD Industrial Adapter Card-Drive

CFC Industrial CompactFlash Card

CFA Industrial CFast Card

AFC 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 PCI-e Flash Module

MSM Industrial mini SATA Flash Module

SSD Industrial Solid State Disk

UFD Industrial Rugged Metal USB Flash Disk

SDC/H 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)
	16GB	SBMSF016G-JDCTC-HS(-F)	WBMSF016G-JDITI-HS(-F)

Remarks:

-F: optional item power pin-7 with fuse

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

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)
	16GB	SBMSF016G-JDCTC-HL(-F)	WBMSF016G-JDITI-HL(-F)

Remarks:

-F: optional item power pin-7 with fuse

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

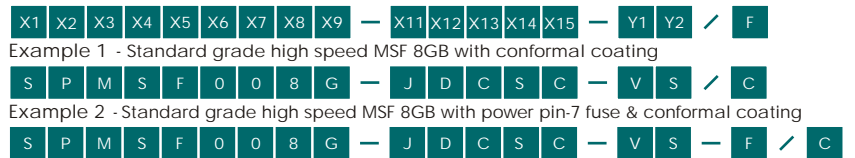
Part number list - Normal speed (bare) Horizontal type lowprofile form factor with mounting hole

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)
	16GB	SBMSF016G-JDCTC-HO(-F)	WBMSF016G-JDITI-HO(-F)

Remarks:

-F: optional item power pin-7 with fuse

Part number decoder



X1 Grade

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

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

X2 The material of casing

B : Bare (without casing)

P : Plastic casing

X3 X4 X5 Product category

MSF : micro SATA flash module

X6 X7 X8 X9 Capacity

128M : 128MB 004G : 4GB

256M : 256MB 008G : 8GB

512M : 512MB 016G : 16GB

001G : 1GB 032G : 32GB

002G : 2GB 064G : 64GB

X11 Controller

J : JMicron (HERMES Series)

X12 Controller version

A,B,C,....D

X13 Controller grade

C : Commercial grade

I : Industrial grade

X14 Flash IC

S : Samsung SLC-NAND flash IC

M : Micron SLC-NAND flash IC

T : Toshiba SLC-NAND flash IC

X15 Flash IC grade

C : Commercial grade

I : Industrial grade

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

F Reserved for specific requirement

F : Power pin-7 with fuse

C : Conformal-coating