

HERMIT Series

Industrial micro IDE Flash (MIF) Module



Product features

- SLC - NAND type flash technology
- Standard 40/44 pins female IDE connector
- Compact form-factor in vertical type and horizontal type
- Master / Slave selectable
- Compatible with ATA/ATAPI-6 standard
- Data transfer mode supports PIO 0-4 and UDMA 0-4
- Performance up to 40 MB/sec
- Capacity from 128MB up to 16GB

Product specifications

- Compatibility**
 - ATAPI-6 and True IDE mode
- Flash technology**
 - SLC-NAND type flash based
- Form-factor**
 - Vertical type or Horizontal R / L types
- Host Interface**
 - Female 40 or 44 pins
- Master/Slave setting**
 - By switch
- Write Protection**
 - N/A
- LED Indicators**
 - N/A
- Performance**
 - Sequential read: 40 MB/sec (Max. /with dual flash)
 - Sequential write: 20 MB/sec (Max. /with dual flash)
 - Average access time: 0.2 ms (estimated)
- Environmental specification**
 - Operating temp.: STD. 0°C ~ 70°C / IND. -40°C ~ +85°C
 - Non-operating temp.: STD. -20°C ~ +80°C / IND. -50°C ~ +95°C
 - Humidity: 10% ~ 95% non-condensing
 - Vibration: 15G compliance to MIL-STD-810F
 - Shock: 1,500G compliance to MIL-STD-810F
 - Altitude: 70,000 feet

- Power consumption**
 - Power requirement: +5V ± 10%
 - Reading mode: 128 mA (Max.)
 - Writing mode: 118 mA (Max.)
 - Sleeping mode: 1.8 mA (Max.)
- Reliability**
 - Wear-leveling: Static wear-leveling algorithms
 - MTBF: > 3,000,000 hours
 - ECC: 4 bits per 512 bytes block
 - Endurance: > 2,000,000 cycles
- Physical specification**
 - Weight (max.):
 - Vertical type: 20g(0.7oz)
 - Horizontal type: 15g(0.53oz)
 - Dimension(W x L x H)
 - 40-pin V. type: 60.20 x 27.79 x 6.40
 - 40-pin H. type: 55.00 x 32.40 x 7.40
 - 44-pin V. type: 50.25 x 27.27 x 5.80
 - 44-pin H. type: 48.00 x 32.60 x 4.50

- Warranty**
 - Standard grade: 3 years
 - Industrial grade: 5 years

Operating temperature supports Standard grade 0°C ~ 70°C

Part number list - IDE 40-pin

40-pin micro IDE flash module Form-factor		
40-pin Vertical type	40-pin Horizontal-rightward	40-pin Horizontal-Leftward

Operating temperature supports 0°C ~ 70°C			
Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
128MB	Vertical	SPMIF128M-HACSC-0V-P	SPMIF128M-HACSC-0V-U
	Right	SBMIF128M-HACSC-0R-P	SBMIF128M-HACSC-0R-U
	Left	SBMIF128M-HACSC-0L-P	SBMIF128M-HACSC-0L-U
256MB	Vertical	SPMIF256M-HACSC-0V-P	SPMIF256M-HACSC-0V-U
	Right	SBMIF256M-HACSC-0R-P	SBMIF256M-HACSC-0R-U
	Left	SBMIF256M-HACSC-0L-P	SBMIF256M-HACSC-0L-U
512MB	Vertical	SPMIF512M-HACSC-0V-P	SPMIF512M-HACSC-0V-U
	Right	SBMIF512M-HACSC-0R-P	SBMIF512M-HACSC-0R-U
	Left	SBMIF512M-HACSC-0L-P	SBMIF512M-HACSC-0L-U
1GB	Vertical	SPMIF001G-HACSC-0V-P	SPMIF001G-HACSC-0V-U
	Right	SBMIF001G-HACSC-0R-P	SBMIF001G-HACSC-0R-U
	Left	SBMIF001G-HACSC-0L-P	SBMIF001G-HACSC-0L-U
2GB	Vertical	SPMIF002G-HACSC-0V-P	SPMIF002G-HACSC-0V-U
	Right	SBMIF002G-HACSC-0R-P	SBMIF002G-HACSC-0R-U
	Left	SBMIF002G-HACSC-0L-P	SBMIF002G-HACSC-0L-U
4GB	Vertical	SPMIF004G-HACSC-0V-P	SPMIF004G-HACSC-0V-U
	Right	SBMIF004G-HACSC-0R-P	SBMIF004G-HACSC-0R-U
	Left	SBMIF004G-HACSC-0L-P	SBMIF004G-HACSC-0L-U
8GB	Vertical	SPMIF008G-HACSC-0V-P	SPMIF008G-HACSC-0V-U
	Right	SBMIF008G-HACSC-0R-P	SBMIF008G-HACSC-0R-U
	Left	SBMIF008G-HACSC-0L-P	SBMIF008G-HACSC-0L-U
16GB	Vertical	N/A	N/A
	Right	SBMIF016G-HACSC-0R-P	SBMIF016G-HACSC-0R-U
	Left	SBMIF016G-HACSC-0L-P	SBMIF016G-HACSC-0L-U

CF
Industrial CompactFlash Card

CFast
Industrial CFast Card

ATA
Industrial PCMCIA ATA Card

MIF
Industrial micro IDE Flash Module

MSE
Industrial micro SATA Flash Module

MUM
Industrial micro USB Module

MPM
Industrial mini PCI-e Module

SSD
Industrial Solid State Disk

UFD
Industrial Rugged Metal USB Flash Disk

SD
Industrial SD & SDHC Memory Card

AD
Industrial Adapter Card-Drive

Operating temperature supports Industrial grade -40 °C ~ +85 °C

Part number list - IDE 40-pin

40-pin micro IDE flash module Form-factor

40-pin Vertical type

40-pin Horizontal-rightward

40-pin Horizontal-Leftward



Operating temperature supports -40 °C ~ +85 °C

Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
128MB	Vertical	WPMIF128M-HAISI-0V-P	WPMIF128M-HAISI-0V-U
	Right	WBMIF128M-HAISI-0R-P	WBMIF128M-HAISI-0R-U
	Left	WBMIF128M-HAISI-0L-P	WBMIF128M-HAISI-0L-U
256MB	Vertical	WPMIF256M-HAISI-0V-P	WPMIF256M-HAISI-0V-U
	Right	WBMIF256M-HAISI-0R-P	WBMIF256M-HAISI-0R-U
	Left	WBMIF256M-HAISI-0L-P	WBMIF256M-HAISI-0L-U
512MB	Vertical	WPMIF512M-HAISI-0V-P	WPMIF512M-HAISI-0V-U
	Right	WBMIF512M-HAISI-0R-P	WBMIF512M-HAISI-0R-U
	Left	WBMIF512M-HAISI-0L-P	WBMIF512M-HAISI-0L-U
1GB	Vertical	WPMIF001G-HAISI-0V-P	WPMIF001G-HAISI-0V-U
	Right	WBMIF001G-HAISI-0R-P	WBMIF001G-HAISI-0R-U
	Left	WBMIF001G-HAISI-0L-P	WBMIF001G-HAISI-0L-U
2GB	Vertical	WPMIF002G-HAISI-0V-P	WPMIF002G-HAISI-0V-U
	Right	WBMIF002G-HAISI-0R-P	WBMIF002G-HAISI-0R-U
	Left	WBMIF002G-HAISI-0L-P	WBMIF002G-HAISI-0L-U
4GB	Vertical	WPMIF004G-HAISI-0V-P	WPMIF004G-HAISI-0V-U
	Right	WBMIF004G-HAISI-0R-P	WBMIF004G-HAISI-0R-U
	Left	WBMIF004G-HAISI-0L-P	WBMIF004G-HAISI-0L-U
8GB	Vertical	WPMIF008G-HAISI-0V-P	WPMIF008G-HAISI-0V-U
	Right	WBMIF008G-HAISI-0R-P	WBMIF008G-HAISI-0R-U
	Left	WBMIF008G-HAISI-0L-P	WBMIF008G-HAISI-0L-U
16GB	Vertical	N/A	N/A
	Right	WBMIF016G-HAISI-0R-P	WBMIF016G-HAISI-0R-U
	Left	WBMIF016G-HAISI-0L-P	WBMIF016G-HAISI-0L-U

Operating temperature supports Standard grade 0 °C ~ 70 °C

Part number list - IDE 44-pin

44-pin micro IDE flash module Form-factor

44-pin Vertical type

44-pin Horizontal-rightward

44-pin Horizontal-Leftward



Operating temperature supports 0 °C ~ 70 °C

Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
128MB	Vertical	SPMIF128M-HACSC-4V-P	SPMIF128M-HACSC-4V-U
	Right	SBMIF128M-HACSC-4R-P	SBMIF128M-HACSC-4R-U
	Left	SBMIF128M-HACSC-4L-P	SBMIF128M-HACSC-4L-U
256MB	Vertical	SPMIF256M-HACSC-4V-P	SPMIF256M-HACSC-4V-U
	Right	SBMIF256M-HACSC-4R-P	SBMIF256M-HACSC-4R-U
	Left	SBMIF256M-HACSC-4L-P	SBMIF256M-HACSC-4L-U
512MB	Vertical	SPMIF512M-HACSC-4V-P	SPMIF512M-HACSC-4V-U
	Right	SBMIF512M-HACSC-4R-P	SBMIF512M-HACSC-4R-U
	Left	SBMIF512M-HACSC-4L-P	SBMIF512M-HACSC-4L-U
1GB	Vertical	SPMIF001G-HACSC-4V-P	SPMIF001G-HACSC-4V-U
	Right	SBMIF001G-HACSC-4R-P	SBMIF001G-HACSC-4R-U
	Left	SBMIF001G-HACSC-4L-P	SBMIF001G-HACSC-4L-U
2GB	Vertical	SPMIF002G-HACSC-4V-P	SPMIF002G-HACSC-4V-U
	Right	SBMIF002G-HACSC-4R-P	SBMIF002G-HACSC-4R-U
	Left	SBMIF002G-HACSC-4L-P	SBMIF002G-HACSC-4L-U
4GB	Vertical	SPMIF004G-HACSC-4V-P	SPMIF004G-HACSC-4V-U
	Right	SBMIF004G-HACSC-4R-P	SBMIF004G-HACSC-4R-U
	Left	SBMIF004G-HACSC-4L-P	SBMIF004G-HACSC-4L-U
8GB	Vertical	SPMIF008G-HACSC-4V-P	SPMIF008G-HACSC-4V-U
	Right	SBMIF008G-HACSC-4R-P	SBMIF008G-HACSC-4R-U
	Left	SBMIF008G-HACSC-4L-P	SBMIF008G-HACSC-4L-U
16GB	Vertical	N/A	N/A
	Right	SBMIF016G-HACSC-4R-P	SBMIF016G-HACSC-4R-U
	Left	SBMIF016G-HACSC-4L-P	SBMIF016G-HACSC-4L-U

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256MB	Vertical	WPMIF256M-HAISI-4V-P	WPMIF256M-HAISI-4V-U
	Right	WBMIF256M-HAISI-4R-P	WBMIF256M-HAISI-4R-U
	Left	WBMIF256M-HAISI-4L-P	WBMIF256M-HAISI-4L-U
512MB	Vertical	WPMIF512M-HAISI-4V-P	WPMIF512M-HAISI-4V-U
	Right	WBMIF512M-HAISI-4R-P	WBMIF512M-HAISI-4R-U
	Left	WBMIF512M-HAISI-4L-P	WBMIF512M-HAISI-4L-U
1GB	Vertical	WPMIF001G-HAISI-4V-P	WPMIF001G-HAISI-4V-U
	Right	WBMIF001G-HAISI-4R-P	WBMIF001G-HAISI-4R-U
	Left	WBMIF001G-HAISI-4L-P	WBMIF001G-HAISI-4L-U
2GB	Vertical	WPMIF002G-HAISI-4V-P	WPMIF002G-HAISI-4V-U
	Right	WBMIF002G-HAISI-4R-P	WBMIF002G-HAISI-4R-U
	Left	WBMIF002G-HAISI-4L-P	WBMIF002G-HAISI-4L-U
4GB	Vertical	WPMIF004G-HAISI-4V-P	WPMIF004G-HAISI-4V-U
	Right	WBMIF004G-HAISI-4R-P	WBMIF004G-HAISI-4R-U
	Left	WBMIF004G-HAISI-4L-P	WBMIF004G-HAISI-4L-U
8GB	Vertical	WPMIF008G-HAISI-4V-P	WPMIF008G-HAISI-4V-U
	Right	WBMIF008G-HAISI-4R-P	WBMIF008G-HAISI-4R-U
	Left	WBMIF008G-HAISI-4L-P	WBMIF008G-HAISI-4L-U
16GB	Vertical	N/A	N/A
	Right	WBMIF016G-HAISI-4R-P	WBMIF016G-HAISI-4R-U
	Left	WBMIF016G-HAISI-4L-P	WBMIF016G-HAISI-4L-U

Part number decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 — Y1 Y2 Z1 C

Example

S P M I F 5 1 2 M — H A C S C — 0 V U 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

X15 ➤ Flash IC grade

C : Commercial grade

I : Industrial grade

X2 ➤ The material of casing

P : Plastic casing

B : Bare (Without casing)

Y1 Y2 ➤ MIF orient only

0V : 40-pin IDE Vertical MIF

0R : 40-pin IDE Right-oriented MIF

0L : 40-pin IDE Left-oriented MIF

4V : 44-pin IDE Vertical MIF

4R : 44-pin IDE Right-oriented MIF

4L : 44-pin IDE Left-oriented MIF

X3 X4 X5 ➤ Product category

MIF : micro IDE flash module

X6 X7 X8 X9 ➤ Capacity

128M : 128MB **002G** : 2GB

256M : 256MB **004G** : 4GB

512M : 512MB **008G** : 8GB

001G : 1GB **016G** : 16GB

X11 ➤ Controller

H : Hyperstone (HERMIT Series)

X12 ➤ Controller version

A,B,C,.....

X13 ➤ Controller grade

C : Commercial grade

I : Industrial grade

Z1 ➤ Data transfer rate and disk type

IDE interface is always Fixed Disk Mode

P : PIO-4 mode / fixed disk type

U : defaulted as UDMA-4 mode / fixed disk type

A : optional as UDMA & PIO mode auto-detection

C ➤ Reserved for specific requirement

C : Conformal-coating