

# HERMIT-A Series

Industrial SLC 40/44-pin micro IDE Flash Module



## Product Feature

- SLC - NAND type flash technology
- 40-pin MIF with 5V power cable
- Master / Slave selectable
- Support True IDE mode
- S.M.A.R.T supported
- RoHS & REACH compliant
- Capacity from 16MB up to 8GB

## Product Specification

<b>Compatibility</b>	▶ ATAPI-6 and True IDE mode
<b>Flash technology</b>	▶ SLC-NAND type flash memory
<b>Form-factor</b>	▶ Vertical and Horizontal Types ▶ Rightward and Leftward Types
<b>Host Interface</b>	▶ Female 40 or 44 pins
<b>Master/Slave</b>	▶ By switch
<b>Performance</b>	
Sequential read	▶ 40 MB/sec (Max.)
Sequential write	▶ 27.8 MB/sec (Max.)
<b>Environmental specification</b>	
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 compliant with MIL-STD-810F
Shock	▶ 1,500G compliant with MIL-STD-810F
Altitude	▶ 70,000 feet

## Power consumption

Power requirement	▶ +5V ± 10% / +3.3V ± 5%
Reading mode	▶ 124 mA (Max.)
Writing mode	▶ 121 mA(Max.)
Idle mode	▶ 1.8 mA (Max.)

## Reliability

Wear-leveling	▶ Static wear-leveling algorithms
MTBF	▶ > 3,000,000 hours
Erase counts	▶ Up to 60,000 times
ECC	▶ 4 bits per 512 bytes block

## Physical specification

Weight (max.)	▶ Vertical type: 20 g (0.7oz) ▶ Horizontal type: 15 g (0.53oz)
Dimension(W x L x H)	▶ 40-pin V. type: 60.20 x 27.79 x 6.40 (mm) ▶ 40-pin H. type: 55.00 x 32.40 x 7.40 (mm) ▶ 44-pin V. type: 55.00 x 32.40 x 7.40 (mm) ▶ 44-pin H. type: 48.00 x 32.60 x 4.50 (mm)
<b>Conformal coating</b>	▶ Optional for horizontal type (w/o casing)

## Warranty

STD Grade SLC	▶ 3 years or within 60K Erasing counts
IND Grade SLC	▶ 5 years or within 60K Erasing counts

## Part Number List

## 40-pin MIF (IDE DOM) ▶

## Product Picture

40-pin Vertical type



40-pin Horizontal-Rightward



40-pin Horizontal-Leftward



Data transfer mode setting by PIO-4 (P), UDMA-4 (U) or Auto detection (A)

Capacity	Form-factor	STD. grade 0°C ~ 70°C	IND. Grade - 40°C ~ +85°C
16MB	Vertical	SPMIF016M-HACTC-0V(P)(U)(A)	WPMIF016M-HAIT-0V(P)(U)(A)
	Right	SBMIF016M-HACTC-0R(P)(U)(A)	WBMIF016M-HAIT-0R(P)(U)(A)
	Left	SBMIF016M-HACTC-0L(P)(U)(A)	WBMIF016M-HAIT-0L(P)(U)(A)
32MB	Vertical	SPMIF032M-HACTC-0V(P)(U)(A)	WPMIF032M-HAIT-0V(P)(U)(A)
	Right	SBMIF032M-HACTC-0R(P)(U)(A)	WBMIF032M-HAIT-0R(P)(U)(A)
	Left	SBMIF032M-HACTC-0L(P)(U)(A)	WBMIF032M-HAIT-0L(P)(U)(A)
64MB	Vertical	SPMIF064M-HACTC-0V(P)(U)(A)	WPMIF064M-HAIT-0V(P)(U)(A)
	Right	SBMIF064M-HACTC-0R(P)(U)(A)	WBMIF064M-HAIT-0R(P)(U)(A)
	Left	SBMIF064M-HACTC-0L(P)(U)(A)	WBMIF064M-HAIT-0L(P)(U)(A)
128MB	Vertical	SPMIF128M-HACTC-0V(P)(U)(A)	WPMIF128M-HAIT-0V(P)(U)(A)
	Right	SBMIF128M-HACTC-0R(P)(U)(A)	WBMIF128M-HAIT-0R(P)(U)(A)
	Left	SBMIF128M-HACTC-0L(P)(U)(A)	WBMIF128M-HAIT-0L(P)(U)(A)
256MB	Vertical	SPMIF256M-HACTC-0V(P)(U)(A)	WPMIF256M-HAIT-0V(P)(U)(A)
	Right	SBMIF256M-HACTC-0R(P)(U)(A)	WBMIF256M-HAIT-0R(P)(U)(A)
	Left	SBMIF256M-HACTC-0L(P)(U)(A)	WBMIF256M-HAIT-0L(P)(U)(A)
512MB	Vertical	SPMIF512M-HACTC-0V(P)(U)(A)	WPMIF512M-HAIT-0V(P)(U)(A)
	Right	SBMIF512M-HACTC-0R(P)(U)(A)	WBMIF512M-HAIT-0R(P)(U)(A)
	Left	SBMIF512M-HACTC-0L(P)(U)(A)	WBMIF512M-HAIT-0L(P)(U)(A)
1GB	Vertical	SPMIF001G-HACTC-0V(P)(U)(A)	WPMIF001G-HAIT-0V(P)(U)(A)
	Right	SBMIF001G-HACTC-0R(P)(U)(A)	WBMIF001G-HAIT-0R(P)(U)(A)
	Left	SBMIF001G-HACTC-0L(P)(U)(A)	WBMIF001G-HAIT-0L(P)(U)(A)
2GB	Vertical	SPMIF002G-HACTC-0V(P)(U)(A)	WPMIF002G-HAIT-0V(P)(U)(A)
	Right	SBMIF002G-HACTC-0R(P)(U)(A)	WBMIF002G-HAIT-0R(P)(U)(A)
	Left	SBMIF002G-HACTC-0L(P)(U)(A)	WBMIF002G-HAIT-0L(P)(U)(A)
4GB	Vertical	SPMIF004G-HACTC-0V(P)(U)(A)	WPMIF004G-HAIT-0V(P)(U)(A)
	Right	SBMIF004G-HACTC-0R(P)(U)(A)	WBMIF004G-HAIT-0R(P)(U)(A)
	Left	SBMIF004G-HACTC-0L(P)(U)(A)	WBMIF004G-HAIT-0L(P)(U)(A)
8GB	Vertical	N/A	N/A
	Right	SBMIF008G-HACTC-0R(P)(U)(A)	WBMIF008G-HAIT-0R(P)(U)(A)
	Left	SBMIF008G-HACTC-0L(P)(U)(A)	WBMIF008G-HAIT-0L(P)(U)(A)

Part Number List

44-pin MIF (IDE DOM) ▶

Product Picture



Data transfer mode setting by PIO-4 (P), UDMA-4 (U) or Auto detection (A)

Capacity	Form-factor	STD. grade 0°C ~ 70°C	IND. Grade - 40°C ~ +85°C
16MB	Vertical	SPMIF016M-HACTC-4V(P)(U)(A)	WPMIF016M-HAITI-4V(P)(U)(A)
	Right	SBMIF016M-HACTC-4R(P)(U)(A)	WBMIF016M-HAITI-4R(P)(U)(A)
	Left	SBMIF016M-HACTC-4L(P)(U)(A)	WBMIF016M-HAITI-4L(P)(U)(A)
32MB	Vertical	SPMIF032M-HACTC-4V(P)(U)(A)	WPMIF032M-HAITI-4V(P)(U)(A)
	Right	SBMIF032M-HACTC-4R(P)(U)(A)	WBMIF032M-HAITI-4R(P)(U)(A)
	Left	SBMIF032M-HACTC-4L(P)(U)(A)	WBMIF032M-HAITI-4L(P)(U)(A)
64MB	Vertical	SPMIF064M-HACTC-4V(P)(U)(A)	WPMIF064M-HAITI-4V(P)(U)(A)
	Right	SBMIF064M-HACTC-4R(P)(U)(A)	WBMIF064M-HAITI-4R(P)(U)(A)
	Left	SBMIF064M-HACTC-4L(P)(U)(A)	WBMIF064M-HAITI-4L(P)(U)(A)
128MB	Vertical	SPMIF128M-HACTC-4V(P)(U)(A)	WPMIF128M-HAITI-4V(P)(U)(A)
	Right	SBMIF128M-HACTC-4R(P)(U)(A)	WBMIF128M-HAITI-4R(P)(U)(A)
	Left	SBMIF128M-HACTC-4L(P)(U)(A)	WBMIF128M-HAITI-4L(P)(U)(A)
256MB	Vertical	SPMIF256M-HACTC-4V(P)(U)(A)	WPMIF256M-HAITI-4V(P)(U)(A)
	Right	SBMIF256M-HACTC-4R(P)(U)(A)	WBMIF256M-HAITI-4R(P)(U)(A)
	Left	SBMIF256M-HACTC-4L(P)(U)(A)	WBMIF256M-HAITI-4L(P)(U)(A)
512MB	Vertical	SPMIF512M-HACTC-4V(P)(U)(A)	WPMIF512M-HAITI-4V(P)(U)(A)
	Right	SBMIF512M-HACTC-4R(P)(U)(A)	WBMIF512M-HAITI-4R(P)(U)(A)
	Left	SBMIF512M-HACTC-4L(P)(U)(A)	WBMIF512M-HAITI-4L(P)(U)(A)
1GB	Vertical	SPMIF001G-HACTC-4V(P)(U)(A)	WPMIF001G-HAITI-4V(P)(U)(A)
	Right	SBMIF001G-HACTC-4R(P)(U)(A)	WBMIF001G-HAITI-4R(P)(U)(A)
	Left	SBMIF001G-HACTC-4L(P)(U)(A)	WBMIF001G-HAITI-4L(P)(U)(A)
2GB	Vertical	SPMIF002G-HACTC-4V(P)(U)(A)	WPMIF002G-HAITI-4V(P)(U)(A)
	Right	SBMIF002G-HACTC-4R(P)(U)(A)	WBMIF002G-HAITI-4R(P)(U)(A)
	Left	SBMIF002G-HACTC-4L(P)(U)(A)	WBMIF002G-HAITI-4L(P)(U)(A)
4GB	Vertical	SPMIF004G-HACTC-4V(P)(U)(A)	WPMIF004G-HAITI-4V(P)(U)(A)
	Right	SBMIF004G-HACTC-4R(P)(U)(A)	WBMIF004G-HAITI-4R(P)(U)(A)
	Left	SBMIF004G-HACTC-4L(P)(U)(A)	WBMIF004G-HAITI-4L(P)(U)(A)
8GB	Vertical	N/A	N/A
	Right	SBMIF008G-HACTC-4R(P)(U)(A)	WBMIF008G-HAITI-4R(P)(U)(A)
	Left	SBMIF008G-HACTC-4L(P)(U)(A)	WBMIF008G-HAITI-4L(P)(U)(A)

## Part Number Decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 — X17 X18 X19 X20

## Example ▶

W B M I F 0 0 8 G — H A I T I — 0 R U

**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) for horizontal type

**P** : Plastic casing for vertical type

**X3** **X4** **X5** Product category

**MIF** : micro IDE flash module (IDE DOM)

**X6** **X7** **X8** **X9** Capacity

**016M** : 16MB      **512M** : 512MB

**032M** : 32MB      **001G** : 1GB

**064M** : 64MB      **002G** : 2GB

**128M** : 128MB    **004G** : 4GB

**256M** : 256MB    **008G** : 8GB

**X11** Controller

**H** : HERMIT Series

**X12** Controller version

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

**X13** Controller grade

**C** : Commercial grade

**I** : Industrial grade

**X14** Flash IC brand

**T** : Toshiba SLC-NAND flash IC

**X15** Flash IC grade

**C** : Commercial grade

**I** : Industrial grade

**X17** **X18** MIF oriented only

**0V** : 40-pin IDE Vertical MIF

**0R** : 40-pin IDE Rightward-oriented MIF

**0L** : 40-pin IDE Leftward-oriented MIF

**4V** : 44-pin IDE Vertical MIF

**4R** : 44-pin IDE Rightward-oriented MIF

**4L** : 44-pin IDE Leftward-oriented MIF

**X19** Data transfer rate and disk type

**IDE interface is always Fixed Disk Mode**

**P** : PIO-6 mode / fixed disk type

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

**A** : optional as UDMA & PIO mode auto-detection

**X20** Reserved for specific requirement

**C** : Conformal coating optional for H-type MIF w/o casing

note : 40/44-pin MIF with casing do not support conformal coating