

PHANES-K Series

MLC mini SATA III Module




Product Feature

- MLC - NAND type flash technology
- S.M.A.R.T. supported
- Bootable for O.S. Installation
- RoHS & REACH compliant
- Capacity from 16GB up to 1TB

Product Specification

Compatibility	<ul style="list-style-type: none"> ■ SATA 1.0a, SATA 2.6 and SATA 3.2 Specification compliance ■ Compliant with ATA/ATAPI-8 ACS2 	Power consumption	<ul style="list-style-type: none"> ■ +3.3 V ± 5%
Flash technology	<ul style="list-style-type: none"> ■ MLC-NAND type flash memory 	Power requirement	<ul style="list-style-type: none"> ■ 1,650mW (Max.)
Form-factor	<ul style="list-style-type: none"> ■ Standard mSATA form factor ■ Compliant with JEDEC MO-300A 	Reading mode	<ul style="list-style-type: none"> ■ 2,690mW (Max.)
Host Interface	<ul style="list-style-type: none"> ■ mini PCIe connector with 52 pins SATA pin out 	Writing mode	<ul style="list-style-type: none"> ■ 285mW (Max.)
Performance	<ul style="list-style-type: none"> ■ SATA 1.5Gb/s, 3.0Gb/s, 6.0Gb/s 	Idle mode	<ul style="list-style-type: none"> ■ 285mW (Max.)
Data transfer rate	<ul style="list-style-type: none"> ■ 550 MB/sec (Max.) 	Reliability	<ul style="list-style-type: none"> ■ Static and Dynamic wear-leveling algorithms
Sequential read	<ul style="list-style-type: none"> ■ 490 MB/sec (Max.) 	Wear-leveling	<ul style="list-style-type: none"> ■ Up to 1,080 TBW at 1TB Capacity (Client workload by JESD-219A)
Sequential write	<ul style="list-style-type: none"> ■ For wide temperature 	TBW	<ul style="list-style-type: none"> ■ Up to 3,000 times
Environmental specification	<ul style="list-style-type: none"> ■ STD. 0°C~70°C/W.T. -40°C~+85°C ■ STD. -20°C~+80°C/W.T. -50°C~+95°C 	Erase counts	<ul style="list-style-type: none"> ■ Hardware design LDPC (Low Density Parity Check)
Non-operating temp.	<ul style="list-style-type: none"> ■ For wide temperature 	ECC	<ul style="list-style-type: none"> ■ Hardware design LDPC (Low Density Parity Check)
Conformal coating	<ul style="list-style-type: none"> ■ 10% ~ 95% non-condensing 	Physical specification	<ul style="list-style-type: none"> ■ 8.0 g ± 1 g / 0.28 oz.
Humidity	<ul style="list-style-type: none"> ■ 80 Hz to 2K Hz, 20G, 3 axes 	Weight	<ul style="list-style-type: none"> ■ 50.80 x 29.85 x 3.70 (mm)
Vibration	<ul style="list-style-type: none"> ■ 0.5ms, 1500G, 3 axes 	Dimension(W x L x H)	<ul style="list-style-type: none"> ■ 70,000 feet
Shock	<ul style="list-style-type: none"> ■ 70,000 feet 	Warranty	<ul style="list-style-type: none"> ■ MLC(standard/wide temp.) 2 years or within 3K Erasing counts
Altitude	<ul style="list-style-type: none"> ■ 70,000 feet 	MLC(standard/wide temp.)	<ul style="list-style-type: none"> ■ 2 years or within 3K Erasing counts

Part Number List

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	16GB	SBMSM016G-PKCTM-(W/T/WT)	WBMSM016G-PKCTM-(W/T/WT)C
	32GB	SBMSM032G-PKCTM-(W/T/WT)	WBMSM032G-PKCTM-(W/T/WT)C
	64GB	SBMSM064G-PKCTM-(W/T/WT)	WBMSM064G-PKCTM-(W/T/WT)C
	128GB	SBMSM128G-PKCTM-(W/T/WT)	WBMSM128G-PKCTM-(W/T/WT)C
	256GB	SBMSM256G-PKCTM-(W/T/WT)	WBMSM256G-PKCTM-(W/T/WT)C
	512GB	SBMSM512G-PKCTM-(W/T/WT)	WBMSM512G-PKCTM-(W/T/WT)C
	1TB	SBMSM001T-PKCTM-(W/T/WT)	WBMSM001T-PKCTM-(W/T/WT)C

Notes :

C : Special conformal coating treated on whole PCBA which may support wide temp. grade operating temperature -40°C ~ +85°C

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 S M O O 1 T — P K C T M — 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

MSM : mSATA module

X6 X7 X8 X9 Capacity

016G : 16GB **128G** : 128GB **001T** : 1TB

032G : 32GB **256G** : 256GB

064G : 64GB **512G** : 512GB

X11 Controller

P : PHANES Series

X12 Controller version

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

X13 Controller grade

C : Commercial grade

X14 Flash IC brand

T : Toshiba NAND flash IC

X15 Flash IC type

M : MLC-NAND flash IC

X17 X18 X19 X20 Reserved for specific requirement

Blank : Standard product w/o thermal sensor and conformal-coating

W : Write Protection Switch

T : Thermal Sensor

WT : Write Protection Switch + Thermal Sensor

C : Conformal coating (optional)