

PHANES-F Series

MLC MicroSD Memory Card 3.0



Product Feature

- MLC - NAND type flash technology
- Supports SD mode and SPI mode
- Supports UHS-1
- Fully compatible to the SDA Specifications Ver 3.0
- Supports CPRM
- RoHS & REACH compliant
- micro SD card capacities from 4GB to 64GB
- Supports wide temp. grade operating temp -40° C~+85° C

Product Specification

Compatibility

- SD Memory Card Specifications, Part 1 Physical Layer Specification, version 3.1 Final
- SD Memory Card Specifications, Part 3, Security Specification, Version 3.0 Final

Flash technology

- MLC-NAND type flash based

Form-factor

- Standard MicroSD card form-factor

Host Interface

- 8-pin connector

Performance

- Class-10

Sequential read

- 99.8 MB/sec

Sequential write

- 92.9 MB/sec

Random access time

- 1ms (estimated)

Environmental specification

Operating temp.

- IND. -40° C~+85° C

Non-operating temp.

- IND. -50° C~+95° C

Humidity

- 10% ~ 95% non-condensing

Vibration

- 20 Hz to 2K Hz, 20G, 3 axes

Shock

- 0.5ms, 1,500G, 3 axes

Altitude

- 70,000 feet

Power consumption

Power requirement

- +3.3V ± 10%

Reading mode

- 400 mA (Max.)

Writing mode

- 400 mA (Max.)

Standby mode

- 1000 uA (Max.)

Reliability

Durability

- 10,000 inserting cycles

Torque

- 0.1N ± 2.5 deg.

Wear-leveling

- Static and Dynamic wear-leveling algorithms

ECC

- BCH ECC

Physical specification

Weight

- 0.3 g / 0.01 oz. (Max.)

Dimension(W x L x H)


- 11.0 x 15.0 x 1.0 (mm)

Warranty

- MLC(standard/wide temp.) ➤ 2 years / Within 3k Erasing counts

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

Part number list - MLC MicroSD Memory Card

Product Picture	Capacity	- 40°C ~ + 85°C
	4GB	WPMSD004G-PFITMB
	8GB	WPMSD008G-PFITMB
	16GB	WPMSD016G-PFITMB
	32GB	WPMSD032G-PFITMB
	64GB	WPMSD064G-PFITMB

Part Number Decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 X16

Example

W P M S D 0 6 4 G — P F I T M B

X1 Grade

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

X2 The material of casing

P : Plastic casing

X3 X4 X5 Product category

MSD : Micro Secure Digital (SD) memory card

X6 X7 X8 X9 Capacity

004G : 4GB **032G** : 32GB

008G : 8GB **064G** : 64GB

016G : 16GB

X11 Controller

P : PHANES Series

X12 Controller version

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

X13 Controller grade

I : Industrial grade

X14 Flash IC

T : Toshiba flash IC

X15 Flash IC grade

M : MLC-NAND flash IC

X16 Generation

B : 15 nm