



**Features**

- MLC-NAND flash technology
- Support SD mode and SPI mode
- Support UHS-1
- Support S.M.A.R.T. command set and utility
- Capacities from 8GB up to 64GB

**Specification**

- **Compatibility** SD3.0
- **microSDHC** 8GB to 32GB: FAT16 file system
- **microSDXC** 64GB : exFAT
- **Declaration** RoHS & REACH compliant
- **Flash technology** MLC-NAND flash technology
- **Form-factor** Standard microSD
- **Host interface** 8-pin exposed contact
- **Performance**
- **Data transfer rate** Class10
- **Sequential read** microSDHC: 93.9 MB/s (Max.)  
microSDXC: 94.3 MB/s (Max.)
- **Sequential write** microSDHC: 61.6 MB/s (Max.)  
microSDXC: 76.7 MB/s (Max.)
- **Environmental**
- **Operating temp.** Wide Temp. -40°C~+85°C
- **Non-operating temp.** Wide Temp. -50°C~+95°C
- **Humidity** 10% ~ 95% non-condensing

- **Vibration** 80 Hz to 2K Hz, 20G, 3axes
- **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.)
- **Idle (Standby) mode** 1000 uA (Max.)
- **Reliability**
- **Wear-leveling** Static and Dynamic wear-leveling algorithms
- **Erase counts** Up to 3,000 times
- **ECC** BCH ECC
- **Physical specification**
- **Weight (Max.)** 0.3g
- **Dimension (WxLxH)** 11.0 x 15.0 x 1.0 (mm)
- **Warranty** 2 years or within 3,000 erasing counts

**Part Number List**

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

**Part Number Decoder**

X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
W	P	M	S	D	0	6	4	G	-	P	F	I	T	M	B	-			

**Example**

**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 SD memory card

**X6 X7 X8 X9 Capacity**

008G : 8GB      032G : 32GB  
016G : 16GB    064G : 64GB

**X11 Controller**

P : PHANES Series

**X12 Controller version**

A, B, C, D....

**X13 Controller grade**

I : Industrial grade

**X14 Flash IC brand**

T : Toshiba NAND flash IC

**X15 Flash IC type**

M : MLC-NAND Flash

**X16 MLC Technology**

B : Toshiba 15nm MLC

**X18 X19 X20 Reserved for specific requirements**

SLC  
oSLC  
MLC  
3D-NAND  
DRAM Module  
Adapter  
Card-drive