



- ### Features
- Enhanced MLC-NAND flash by sophisticated aSLC firmware
  - Support SD mode and SPI mode
  - Support UHS-1
  - Support S.M.A.R.T. command set and utility
  - Capacities from 4GB up to 32GB

- ### Specification
- **Compatibility** SD3.0
  - **microSD** 1GB to 2GB: FAT file system
  - **microSDHC** 4GB: FAT16 file system
  - **Declaration** RoHS & REACH compliant
  - **Flash technology** MLC-NAND flash technology
  - **Form-factor** Standard microSD
  - **Host interface** 8-pin exposed contact
  - **Performance**
  - **Data transfer rate** Class-10
  - **Sequential read** microSDHC: 95.3 MB/sec (Max.)
  - **Sequential write** microSDHC: 83.6 MB/sec (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 20,000 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 20,000 erasing counts

### Part Number List

Capacity	-40°C~+85°C
4GB	WPMSD004G-PFITMBAS
8GB	WPMSD008G-PFITMBAS
16GB	WPMSD016G-PFITMBAS
32GB	WPMSD032G-PFITMBAS

### Part Number Decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12 X13 X14 X15 X16 X17 X18 X19 X20

Example: W P M S D 0 3 2 G - P F I T M B A S

- **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**  
004G : 4GB      016G : 16GB  
008G : 8GB      032G : 32GB
- **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 IC
- **X16 MLC Technology**  
B : Toshiba 15nm MLC
- **X17 X18 aSLC Technology**  
AS : aSLC Technology extends MLC products' lifespan
- **X19 X20 Reserved for specific requirements**