



**Features**

- Enhanced MLC-NAND flash by sophisticated aSLC firmware
- Support Trim command set
- Support Native Command Queuing (NCQ)
- Support LDPC (Low Density Parity Check) ECC algorithm
- Support S.M.A.R.T. command set and utility
- Support Power Loss Protection
- Capacities from 8GB up to 256GB

**Specification**

- **Compatibility** SATA Revision 3.2  
ATA-8 ACS4 command set
- **Declarations** RoHS & REACH compliant
- **Flash technology** MLC-NAND flash technology
- **Form-factor** Standard mSATA form factor
- **Host Interface** Compliant with JEDEC MO-300A  
mini PCI-e connector with 52 pins  
SATA pin out
- **Performance**
  - **Data transfer rate** SATA 1.5Gb/s, 3.0Gb/s, 6.0Gb/s
  - **Sequential read** 550 MB/sec (Max.)
  - **Sequential write** 490 MB/sec (Max.)
- **Environmental**
  - **Operating temp.** STD. 0°C~+70°C/W.T. -40°C~+85°C
  - **Non-operating temp** STD. -20°C~+80°C/W.T. -50°C~+95°C
  - **Humidity** 10% ~ 95% non-condensing
  - **Vibration** 80 Hz to 2K Hz, 20G, 3axes
  - **Shock** 0.5ms, 1500G, 3 axes
  - **Altitude** 70,000 feet

- **Power consumption**
  - **Power requirement** +3.3 V ± 5%
  - **Reading mode** 1,615mW (Max.)
  - **Writing mode** 1,960mW (Max.)
  - **Idle mode** 275mW (Max.)
- **Reliability**
  - **Wear-leveling** Static and Dynamic wear-leveling algorithms  
Up to 1,510 TBW at 256GB Capacity.  
(Client workload by JESD-219A)
  - **TBW** Up to 20,000 times
  - **Erase counts** LDPC (Low Density Parity Check)
- **Physical specification**
  - **Weight (Max.)** 8g
  - **Dimension (WxL)** 29.85 x 50.80 (mm)
- **Conformal coating** Optional
- **Warranty** 2 years or within 20,000 erasing counts

**Part Number List**

Capacity	0°C~+70°C	Capacity	-40°C~+85°C
8GB	SBMSM008G-PKCTMAS-(W/T/WT)	8GB	WBMSM008G-PKCTMAS-(W/T/WT)C
16GB	SBMSM016G-PKCTMAS-(W/T/WT)	16GB	WBMSM016G-PKCTMAS-(W/T/WT)C
32GB	SBMSM032G-PKCTMAS-(W/T/WT)	32GB	WBMSM032G-PKCTMAS-(W/T/WT)C
64GB	SBMSM064G-PKCTMAS-(W/T/WT)	64GB	WBMSM064G-PKCTMAS-(W/T/WT)C
128GB	SBMSM128G-PKCTMAS-(W/T/WT)	128GB	WBMSM128G-PKCTMAS-(W/T/WT)C
256GB	SBMSM256G-PKCTMAS-(W/T/WT)	256GB	WBMSM256G-PKCTMAS-(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 X10 X11 X12 X13 X14 X15 X16 X17 X18 X19 X20

**Example**

W B M S M 2 5 6 G - P K C T M A S - T 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 : Mini SATA Module (mSATA)
- X6 X7 X8 X9 Capacity**  
008G : 8GB      064G : 64GB  
016G : 16GB     128G : 128GB  
032G : 32GB     256G : 256GB
- 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
- X16 X17 aSLC Technology**  
AS : aSLC Technology extends MLC products' lifespan
- X19 X20 Reserved for specific requirements**  
Blank : Standard product w/o thermal sensor and conformal-coating  
W : Write Protection Switch (optional)  
T : Thermal Sensor (optional)  
WT : Write Protection Switch + Thermal Sensor (optional)  
C : Conformal coating (optional)

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