



### ◆ Specification

■ <b>Compatibility</b>	SATA Revision 3.1
■ <b>Declarations</b>	RoHS & REACH compliant
■ <b>Flash technology</b>	SLC-NAND flash technology
■ <b>Form-factor</b>	Vertical: STD. (VS) / Low profile (VL) Horizontal: STD. (HS)/ Low profile (HL & HO)
■ <b>Host Interface</b>	Standard SATA-III 7-pin (data)
■ <b>Performance</b>	
➢ <b>Data transfer rate</b>	SATA 1.5Gb/s, 3.0Gb/s, 6.0Gb/s
➢ <b>Sequential read</b>	230.3 MB/sec (Max.)
➢ <b>Sequential write</b>	80.5 MB/sec (Max.)
■ <b>Environmental</b>	
➢ <b>Operating temp.</b>	STD. 0°C~+70°C/W.T. -40°C~+85°C
➢ <b>Non-operating temp.</b>	STD. -20°C~+80°C/W.T. -50°C~+95°C
➢ <b>Humidity</b>	10% ~ 95% non-condensing
➢ <b>Vibration</b>	70 Hz to 2K Hz, 20G, 3 axes
➢ <b>Shock</b>	0.5ms, 1500G, 3 axes
➢ <b>Altitude</b>	70,000 feet
■ <b>Power consumption</b>	
➢ <b>Power requirement</b>	5V ± 5%

### ◆ Features

- MLC-NAND flash technology
  - Form-factor supports vertical and horizontal types
  - Support Trim command set
  - Support Native Command Queuing (NCQ)
  - Power request optional: Built-in power pin-7 (w/fuse)
  - Power request optional: 5V power cable (w/o fuse)
  - Support S.M.A.R.T. command set and utility
  - Capacities from 4GB up to 128GB
- |                                     |   |
|-------------------------------------|---|
| ➢ <b>Reading mode</b>               | 110mA (Max.)  |
| ➢ <b>Writing mode</b>               | 125mA (Max.)  |
| ➢ <b>Idle mode</b>                  | 90mA (Max.)   |
| ■ <b>Reliability</b>                |   |
| ➢ <b>Wear-leveling</b>              | Static wear-leveling algorithms<br>(Client workload by JESD-219A)   |
| ➢ <b>TBW</b>                        | Up to 37.12 TBW at 128GB Capacity<br>(Client workload by JESD-219A) |
| ➢ <b>Erase counts</b>               | Up to 3,000 times   |
| ➢ <b>ECC</b>                        | 40 bits per 1024 bytes block  |
| ■ <b>Physical specification</b>     |   |
| ➢ <b>Weight (Max.)</b>              | 20g   |
| ➢ <b>Dimension (WxLxH)</b>          |   |
| ➢ <b>Vert. STD. (VS)</b>            | 18.00 x 38.50 (mm)  |
| ➢ <b>Vert. Low pro. (VL)</b>        | 30.10 x 28.75 (mm)  |
| ➢ <b>Hori. STD. (HS)</b>            | 18.00 x 30.30 (mm)  |
| ➢ <b>Hori. Low pro. (HL)</b>        | 30.00 x 20.08 (mm)  |
| ➢ <b>Hori. L/P with a hole (HO)</b> | 30.00 x 28.80 (mm)  |
| ■ <b>Conformal coating</b>          | Optional  |
| ■ <b>Warranty</b>                   | 2 years or within 3,000 erasing counts                              |

### ◆ Part Number List

MSF (SATA DOM) in vertical type standard (VS) form factor			
Capacity	0°C~+70°C	Capacity	-40°C~+85°C
4GB	SBMSF004G-JJCTMB-VS(T/F)	4GB	WBMSF004G-JJCTMB -VS(T/F)C
8GB	SBMSF008G-JJCTMB-VS(T/F)	8GB	WBMSF008G-JJCTMB -VS(T/F)C
16GB	SBMSF016G-JJCTMB-VS(T/F)	16GB	WBMSF016G-JJCTMB -VS(T/F)C
32GB	SBMSF032G-JJCTMB-VS(T/F)	32GB	WBMSF032G-JJCTMB -VS(T/F)C
64GB	SBMSF064G-JJCTMB-VS(T/F)	64GB	WBMSF064G-JJCTMB -VS(T/F)C
128GB	SBMSF128G-JJCTMB-VS(T/F)	128GB	WBMSF128G-JJCTMB -VS(T/F)C
MSF (SATA DOM) in vertical type low profile (VL) form factor			
Capacity	0°C~+70°C	Capacity	-40°C~+85°C
4GB	SBMSF004G-JJCTMB-VL(T/F)	4GB	WBMSF004G-JJCTMB-VL(T/F)C
8GB	SBMSF008G-JJCTMB-VL(T/F)	8GB	WBMSF008G-JJCTMB-VL(T/F)C
16GB	SBMSF016G-JJCTMB-VL(T/F)	16GB	WBMSF016G-JJCTMB-VL(T/F)C
32GB	SBMSF032G-JJCTMB-VL(T/F)	32GB	WBMSF032G-JJCTMB-VL(T/F)C
64GB	SBMSF064G-JJCTMB-VL(T/F)	64GB	WBMSF064G-JJCTMB-VL(T/F)C
128GB	SBMSF128G-JJCTMB-VL(T/F)	128GB	WBMSF128G-JJCTMB-VL(T/F)C
MSF (SATA DOM) in horizontal type standard (HS) form factor			
Capacity	0°C~+70°C	Capacity	-40°C~+85°C
4GB	SBMSF004G-JJCTMB-HS(T/F)	4GB	WBMSF004G-JJCTMB-HS(T/F)C
8GB	SBMSF008G-JJCTMB-HS(T/F)	8GB	WBMSF008G-JJCTMB-HS(T/F)C
16GB	SBMSF016G-JJCTMB-HS(T/F)	16GB	WBMSF016G-JJCTMB-HS(T/F)C
32GB	SBMSF032G-JJCTMB-HS(T/F)	32GB	WBMSF032G-JJCTMB-HS(T/F)C
64GB	SBMSF064G-JJCTMB-HS(T/F)	64GB	WBMSF064G-JJCTMB-HS(T/F)C
128GB	SBMSF128G-JJCTMB-HS(T/F)	128GB	WBMSF128G-JJCTMB-HS(T/F)C
MSF (SATA DOM) in horizontal type low profile (HL) form factor			
Capacity	0°C~+70°C	Capacity	-40°C~+85°C
4GB	SBMSF004G-JJCTMB-HL(T/F)	4GB	WBMSF004G-JJCTMB-HL(T/F)C
8GB	SBMSF008G-JJCTMB-HL(T/F)	8GB	WBMSF008G-JJCTMB-HL(T/F)C
16GB	SBMSF016G-JJCTMB-HL(T/F)	16GB	WBMSF016G-JJCTMB-HL(T/F)C
32GB	SBMSF032G-JJCTMB-HL(T/F)	32GB	WBMSF032G-JJCTMB-HL(T/F)C
64GB	SBMSF064G-JJCTMB-HL(T/F)	64GB	WBMSF064G-JJCTMB-HL(T/F)C
128GB	SBMSF128G-JJCTMB-HL(T/F)	128GB	WBMSF128G-JJCTMB-HL(T/F)C

Note : F: optional item power pin-7 with fuse

❖ Part Number List

MSF (SATA DOM) in horizontal type low profile form factor with mounting hole (HO)					
Capacity	0°C~+70°C		Capacity	-40°C~+85°C	
4GB	SBMSF004G-JJCTMB-HO(T/F)		4GB	WBMSF004G-JJCTMB-HO(T/F)C	
8GB	SBMSF008G-JJCTMB-HO(T/F)		8GB	WBMSF008G-JJCTMB-HO(T/F)C	
16GB	SBMSF016G-JJCTMB-HO(T/F)		16GB	WBMSF016G-JJCTMB-HO(T/F)C	
32GB	SBMSF032G-JJCTMB-HO(T/F)		32GB	WBMSF032G-JJCTMB-HO(T/F)C	
64GB	SBMSF064G-JJCTMB-HO(T/F)		64GB	WBMSF064G-JJCTMB-HO(T/F)C	
128GB	SBMSF128G-JJCTMB-HO(T/F)		128GB	WBMSF128G-JJCTMB-HO(T/F)C	

Note : F: optional item power pin-7 with fuse

❖ Part Number Decoder

X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
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Example 1

W	B	M	S	F	1	2	8	G	—	J	J	C	T	M	B	V	S	F	C
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Example 2

W	B	M	S	F	1	2	8	G	J	J	C	T	M	B	H	S	T	F	C
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**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

MSF : Micro SATA Flash Module (SATA DOM)

**X6** **X7** **X8** **X9** Capacity

004G : 4GB      032G : 32GB  
 008G : 8GB      064G : 64GB  
 016G : 16GB    128G : 128GB

**X11** Controller

J : HERMES 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** MLC Technology

B : Toshiba 15nm MLC

**X18** **X19** MSF form-factor only

VS : Vertical type standard form factor  
 VL : Vertical type low profile form factor  
 HS : Horizontal type standard form factor  
 HL : Horizontal type low profile form factor  
 HO : Horizontal type low profile form factor with mounting hole

**X20** Reserved for specific requirements

Blank : Standard product w/o thermal sensor and conformal-coating  
 T : Thermal Sensor (optional)  
 F : Power pin-7 with fuse (optional)  
 C : Conformal coating (optional)

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