

Samsung V-NAND SSD

PM983a

2023 Data Sheet

Revision 1.1

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TECHINICAL SPECIFICATIONS

Samsung SSD PM983a			
Usage Application	Data Center, Server		
Interface	PCIe Express Gen3 x4, NVMe 1.3c		
Hardware Information	Capacity ¹⁾	7.68TB	
	Controller	Samsung in-house Controller	
	NAND Flash Memory	Samsung V-NAND TLC	
	Dimensions	100.20x 69.85x 7.0(mm)	
	Form Factor	2.5 inch U.2	
Performance (Up to.) ²⁾	Sequential Read	3,000 MB/s	
	Sequential Write	2,200 MB/s	
	4KB Ran. Read (QD32)	540 KIOPS	
	4KB Ran. Write (QD32)	92 KIOPS	
Power Consumption ³⁾	Idle	DIPM off	4 W
	Active (Avg.) ³⁾	Read/Write	8.7W/10.5W
Reliability	Temp.	Operating	0°C to 70°C
		Non-Operating	-40°C to 85°C
	Humidity		5% to 95% non-condensing
	Shock	Non-Operating	1,500G, duration: 0.5ms, 3 axis
	Vibration	Non-Operating	10~2,000Hz, 20G
MTBF		2.0 million hours	
Warranty	TBW ⁴⁾		10,932TB
	Period		5 year limited
Supporting Features	TRIM (Required OS support), Garbage Collection, S.M.A.R.T		
Data Security	AES 256-bit Full Disk Encryption		

1) GB: 1GB = 1,000,000,000 bytes. A certain portion of capacity may be used for system file and maintenance use, thus the actual available capacity may differ from the labeled total capacity.

2) Performance measurements are based on PCI Express Gen3 x4, Random performance measured using FIO 2.7 in Linux CentOS 6.6(Kernel 3.14.29) with 4KB (4,096 bytes) of data transfer size in queue depth 32 by 4 workers and Sequential performance with 128KB (131,072 bytes) of data transfer size in queue depth 32 by 1 worker. Actual performance may vary depending on use conditions and environment.

3) Active Read power is measured on 4 KB random read using IOMeter2006 on Windows Server 2012. Active Write power is measured on 4 KB random write using IOMeter2006 on Windows Server 2012.

4) TBW means Total Bytes Written.

5) Please refer to the detailed warranty statement here at <http://samsung.com/samsungssd>.

6) Warranty provides coverage for the stated time period or the TBW, whichever comes first.

PRODUCT LINEUP

Density	Model Name	Part Number
7.68TB (7,680GB*)	MZ-QLB7T6B0	MZQLB7T6HALA-00W07

* GB: 1GB = 1,000,000,000 bytes by IDEMA. The actual usable capacity may be less than the labeled capacity. For more information, including but not limited to the warranty provided for this product, please visit www.samsung.com/ssd and www.samsungssd.com.

Revision History

Revision Number	Description	Revision Date
1.0	Initial Release	July 2023
1.1	Warranty period and Model name changed	August 2023