

Samsung V-NAND SSD PM9A3

2022 Data Sheet

Revision 1.0



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TECHINCAL SPECIFICATIONS

Samsung SSD PM9A3					
Usage Application	Data Center, Server				
Interface	PCIe Express Gen4 x4, NVMe 1.4				
Hardware Information	Capacity ¹⁾	960GB	1.92TB	3.84TB	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	6,500 MB/s	6,800 MB/s	6,900 MB/s	6,700 MB/s
	Sequential Write ³⁾	1,500 MB/s	2,700 MB/s	4,100 MB/s	4,000 MB/s
	4KB Ran. Read (QD32)	580 KIOPS	850 KIOPS	1,000 KIOPS	1,100 KIOPS
	4KB Ran. Write (QD32)	70 KIOPS	130 KIOPS	180 KIOPS	200 KIOPS
Power Consumption ³⁾	Idle	DIPM off	3.5 W	3.5 W	3.5 W
	Active (Avg.)	Read/Write	9.5/8.0W	10.0/12.5W	11.0/13.5W
Reliability ⁴⁾	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	20~2,000Hz, 20G		
	MTBF		2.0 million hours		
Warranty	TBW ⁵⁾	1,752TB	3,504TB	7,008TB	14,016TB
	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, TCG/Opal V2.0, Encrypted Drive(IEEE1667)				

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 FIO 2.7 in Linux Gen4: CentOS7(Kernel 5.3.1) with 4KB (4,096 bytes) of data transfer size in Queue Depth=32 by 4 workers. Measurements were performed on a full Logical Block Address (LBA) span of the drive in sustained state. The actual performance may vary depending on use conditions and environment.

3) Active Read power is measured on 4 KB random read. Active Write power is measured on 4 KB random write.

4) All documented endurance test results are obtained in compliance with JESD218 Standards. Please visit www.jedec.org for detailed information on JESD218 Standards

5) TBW means Total Bytes Written.

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

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

PRODUCT LINEUP

Density	Model Name	Part Number
960GB*	MZ-QL296000	MZQL2960HCJR-00W07
1.92TB (1,920GB*)	MZ-QL21T900	MZQL21T9HCJR-00W07
3.84TB (3,840GB*)	MZ-QL23T800	MZQL23T8HCLS-00W07
7.68TB (7,680GB*)	MZ-QL27T600	MZQL27T6HBLA-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	August 2022