

Target

SAMSUNG SSD PM991a

Specification (PCIe® NVMe™ M.2 22x30)

Datasheet *For General*

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Revision History

<u>Revision No.</u>	<u>History</u>	<u>Draft Date</u>	<u>Remark</u>	<u>Edited by</u>	<u>Reviewed by</u>
0.1	1. Initial issue	Nov. 17. 2022	Target	S.M.Lee	Yongsunk Yun

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Target Rev. 0.1

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PART NUMBER	CAPACITY ¹⁾	LBA COUNT ²⁾	
MZ9LQ128HCHQ-00B00	128GB	250,069,680	
MZ9LQ256HBJD-00B00	256GB	500,118,192	
MZ9LQ512HBLU-00B00	512GB	1,000,215,216	
MZ9LQ1T0HBLB-00B00	1024GB	2,000,409,264	
FEATURES	ENVIRONMENTAL SPECIFICATIONS		
<ul style="list-style-type: none"> · PCIe® Gen.3 8Gb/s Interface, up to 4 Lanes · Compliant with PCI Express® Base Specification Rev. 3.0 · Compliant with PCI Express® M.2 Specification Rev 1.1 · Compliant with NVM Express™ specification Rev. 1.4 · Power Saving Modes: <ul style="list-style-type: none"> - Supporting APST - Supporting L1.2 Mode · Support Admin & NVM Command Set · RoHS Compliant 	<ul style="list-style-type: none"> · Temperature <ul style="list-style-type: none"> - Operating⁴⁾ - Non-operating · Humidity (non-condensing) <ul style="list-style-type: none"> - Non-operating · Linear Shock (0.5ms duration with 1/2 sine wave) <ul style="list-style-type: none"> - Non-operating · Vibration <ul style="list-style-type: none"> - Non-operating (20~2000Hz) 	0 °C to 70 °C -40 °C to 85 °C 5 ~ 95 % 1,500 Gpeak 20 Gpeak	
DRIVE CONFIGURATION	POWER SPECIFICATIONS		
<ul style="list-style-type: none"> · Capacity · Form Factor · Interface · Bytes per Sector 	<ul style="list-style-type: none"> 128/256/512/1024 GB M.2 22x30 PCI Express Gen.3 x4 512 Bytes 	<ul style="list-style-type: none"> · Supply Voltage · Voltage Ripple/Noise (max.) · Active⁵⁾ (Typ, RMS) - Read - Write · Idle⁶⁾ (Typ.) · Sleep⁶⁾ (Typ) 	3.3 V ± 5% 100 mV p-p 3.4 W 3.0 W 45 mW 5 mW
PERFORMANCE SPECIFICATIONS ³⁾	PHYSICAL DIMENSION		
<ul style="list-style-type: none"> · Data Transfer Rate (128KB) <ul style="list-style-type: none"> - Sequential Read - Sequential Write · Data I/O Speed (4KB) <ul style="list-style-type: none"> - Random Read - Random Write 	<ul style="list-style-type: none"> (128GB) Up to 2000 MB/s (256GB) Up to 2050 MB/s (512GB) Up to 2200 MB/s (1024GB) Up to 2300 MB/s (128/256GB) Up to 1100 MB/s (512GB) Up to 1200 MB/s (1024GB) Up to 1250 MB/s 	<ul style="list-style-type: none"> · Width · Length · Height · Weight 	22.00 ± 0.15 mm 30.00 ± 0.15 mm Max. 2.38 mm Max. 4.0 g
RELIABILITY SPECIFICATIONS	<p><i>Specifications are subject to change without notice.</i></p> <p>1) 1MB = 1,000,000 Bytes, 1GB = 1,000,000,000 Bytes, Unformatted Capacity. User accessible capacity may vary depending on operating environment and formatting. 2) 1 Sector = 512 Bytes, Max. LBA count represents the total user addressable sectors in LBA count mode and calculated by IDEMA rule. 3) Actual performance may vary depending on use conditions and environment. Performance measurements based on TurboWrite technology. 4) Measured by SMART Temperature. Proper airflow recommended. 5) Active power is measured on sequential write and read. 6) Idle Power is measured on PS3 (L1.2 Enable) and Sleep Power is measured on PS4 (L1.2 Enable). Actual measurements result may vary depending on use conditions and environment.</p>		
<ul style="list-style-type: none"> · Uncorrectable Bit Error Rate · MTBF 	<ul style="list-style-type: none"> < 1 sector per 10^{15} bits read 1.5 Million Hours 		

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