TOSHIBA

PM5-V (KPM51VUG/KPM5XVUG/ KPM5VVUG/KPM5WVUG) SERIES

ENTERPRISE MIXED USE SSD

SSD

Product image may differ from the actual model.

PM5-V 12.0 Gbit/s enterprise SAS SSD is optimized for mixed use applications, including SQL server, media streaming, data warehousing and web services. The Series is designed to deliver balanced levels of performance, reliability, capacity and endurance for mixed use and read intensive environments.

Featuring Toshiba Memory Corporation's 64-layer BiCS FLASH™ 3D memory, this 5th generation enterprise SAS SSD PM5-V offers 3 DWPD (Drive Writes Per Day) with capacities up to 6.4 TB.

KEY FEATURES

- 12.0 Gbit/s SAS interface with single/dual port and MultiLink SAS™ support
- Capacities from 400 GB to 6.4 TB
- T10 Multi-Stream Write support
- Up to 385 K random read IOPS (4 KiB) in dual port mode
- 2.5 inch form factor, 15 mm Z-Height
- 3 DWPD with 100 % Random Write Workload
- Power-Loss-Protection and End-to-End Data Protection including T10 DIF
- Pin-3 Power Disable Support
- Sanitize Instant Erase (SIE) option *Note 1,4
- Self-Encrypting (SED) option *Note 2,4
- Self-Encrypting (SED), FIPS 140-2 validated option *Note 2,3,4
- 5-year limited warranty

APPLICATIONS

- Media streaming
- Data warehousing
- Web servers

MAIN SPECIFICATIONS

Model Number SIE Model Number SED Model Number SED FIPS Model Number		KPM51VUG6T40 KPM5XVUG6T40 KPM5VVUG6T40 KPM5WVUG6T40	KPM51VUG3T20 KPM5XVUG3T20 KPM5VVUG3T20 KPM5WVUG3T20	KPM51VUG1T60 KPM5XVUG1T60 KPM5VVUG1T60 KPM5WVUG1T60	KPM51VUG800G KPM5XVUG800G KPM5VVUG800G KPM5WVUG800G	KPM51VUG400G KPM5XVUG400G KPM5VVUG400G KPM5WVUG400G
Interface		SAS-3.0				
Formatted Capacity		6,400 GB	3,200 GB	1,600 GB	800 GB	400 GB
Performance (in dual port mode)	Interface Speed	12.0 Gbit/s , 6.0 Gbit/s , 3.0 Gbit/s , 1.5 Gbit/s				
	Memory Type	BiCS FLASH™ TLC				
	Sustained 128 KiB Sequential Read	2,100 MB/s				1,470 MB/s
	Sustained 128 KiB Sequential Write	2,100 MB/s			1,260 MB/s	680 MB/s
	Sustained 4 KiB Random Read	385,000 IOPS	370,000 IOPS	340,000 IOPS	270,000 IOPS	180,000 IOPS
	Sustained 4 KiB Random Write	120,000 IOPS			80,000 IOPS	70,000 IOPS
Supply Voltage	Allowable Voltage	5 V + 10% / - 7% 12 V ± 10 %				
Power Consumption		5.0 W Typ.				

RELIABILITY

Model Number	KPM51VUGxxxx KPM5XVUGxxxx KPM5VVUGxxxx KPM5WVUGxxxx
MTTF	2,500,000 hours
DWPD	3
Warranty	5 years

MECHANICAL SPECIFICATIONS

Model Number	KPM51VUGxxxx KPM5XVUGxxxx KPM5VVUGxxxx KPM5WVUGxxxx
Height	15.0 mm + 0, - 0.5 mm
Width	69.85 ± 0.25 mm
Length	100.45 mm Max.
Weight	130 g Max.

ENVIRONMENTAL LIMITS

Item		KPM51VUGxxxx KPM5XVUGxxxx KPM5VVUGxxxx KPM5WVUGxxxx
Temperature	Operating	0 °C to 60 °C
Humidity	Operating	5 % to 95 % R.H. (No condensation)
Vibration	Operating	21.27 m/s^2 { 2.17 Grms } (5 to 800 Hz)
Shock	Operating	9,800 m/s^2 { 1,000 G } (0.5 ms duration)

Definition of capacity: Toshiba Memory Corporation defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^{30} = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

A kibibyte (KiB) means 2^{10}, or 1,024 bytes.

MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.

DWPD: Drive Write Per Day. One drive write per day means the drive can be written and re-written to full capacity once a day every day for five years, the stated product warranty period. Actual results may vary due to system configuration, usage and other factors.

Read and write speed may vary depending on the host device, read and write conditions, and file size.

IOPS: Input Output Per Second (or the number of I/O operations per second)

* Note 1: The Sanitize Instant Erase (SIE) option supports Crypto Erase, which is a standardized feature defined by the technical committees (T10) of INCITS (the InterNational Committee for Information Technology Standards).
* Note 2: SED (Self-Encrypting Drive) supports TCG Enterprise SSC.
* Note 3: FIPS 140-2 validated (Level 2) defines security requirements for cryptographic module by NIST (National Institute of Standards and Technology).
* Note 4: Optional security feature compliant drives are not available in all countries due to export and local regulations.

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