

PM5-V (KPM51VUG/KPM5XVUG/ KPM5VVUG/KPM5WVUG) SERIES ENTERPRISE MIXED USE SSD

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 DDPD (Drive Writes Per Day) with capacities up to 7.68 TB.

SSD



Product image may differ from the actual model.

KEY FEATURES

- 12.0 Gbit/s SAS interface with single/dual port and MultiLink SAS™ support
- Capacities from 400 GB to 7.68 TB
- T10 Multi-Stream Write support
- Up to 385 K random read IOPS (4 KiB) in dual port mode
- 2.5-type form factor, 15 mm Z-Height
- 3 DDPD 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
- Self-Encrypting (SED) option
- Self-Encrypting (SED), FIPS certified option
- 5-year limited warranty

APPLICATIONS

- Media streaming
- Data warehousing
- Web servers

MAIN SPECIFICATIONS

Model Number		KPM51VUG6T40	KPM51VUG3T20	KPM51VUG1T60	KPM51VUG800G	KPM51VUG800G
SIE Model Number		KPM5XVUG6T40	KPM5XVUG3T20	KPM5XVUG1T60	KPM5XVUG800G	KPM5XVUG800G
SED Model Number		KPM5VVUG6T40	KPM5VVUG3T20	KPM5VVUG1T60	KPM5VVUG800G	KPM5VVUG800G
SED FIPS Model Number		KPM5WVUG6T40	KPM5WVUG3T20	KPM5WVUG1T60	KPM5WVUG800G	KPM5WVUG800G
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.				

Model Number	KPM51VUG7T68	KPM51VUG3T84	KPM51VUG1T92	KPM51VUG960G	KPM51VUG480G	
SIE Model Number	KPM5XVUG7T68	KPM5XVUG3T84	KPM5XVUG1T92	KPM5XVUG960G	KPM5XVUG480G	
SED Model Number	KPM5VVUG7T68	KPM5VVUG3T84	KPM5VVUG1T92	KPM5VVUG960G	KPM5VVUG480G	
SED FIPS Model Number	KPM5WVUG7T68	KPM5WVUG3T84	KPM5WVUG1T92	KPM5WVUG960G	KPM5WVUG480G	
Interface	SAS-3.0					
Formatted Capacity	7,680 GB	3,840 GB	1,920 GB	960 GB	480 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	1,940 MB/s		1,835 MB/s	1,520 MB/s	
	Sustained 128 KiB Sequential Write	2,100 MB/s		1,260 MB/s	680 MB/s	
	Sustained 4 KiB Random Read	380,000 IOPS	370,000 IOPS	350,000 IOPS	290,000 IOPS	190,000 IOPS
	Sustained 4 KiB Random Write	90,000 IOPS				60,000 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)

Product image may represent a design model.

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 = 2³⁰ = 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 2¹⁰, or 1,024 bytes, a mebibyte (MiB) means 2²⁰, or 1,048,576 bytes, and a gibibyte (GiB) means 2³⁰, or 1,073,741,824 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)

There are some models of Toshiba Memory Corporation SSD Products which deliver various security functions as optional feature. For more information of security options, please contact your Toshiba Memory Corporation sales representative.