TOSHIBA

CM5-V SERIES

(KCM51VUG/KCM5XVUG/KCM5DVUG/KCM5FVUG)
ENTERPRISE NVMe™ MIXED USE SSD

SSD

Product image may differ from the actual model.

The CM5-V series is a mixed-use SSD that is optimized to support a broad range of enterprise applications and associated workloads that include High Performance Computing, Online Transaction Processing, IoT and Edge Computing, Media Streaming, etc. This NVMe™ series of CM5 SSDs deliver excellent performance up to 770K random read IOPS and 165K random write IOPS, with maximum power consumption of 16W.

Featuring Toshiba Memory Corporation's 64-layer BiCS FLASH™ 3D TLC memory, the CM5-V Series of enterprise NVMe™ SSDs delivers 3 DWPD (Drive Writes Per Day) of endurance and supports storage capacities up to 6.4TB, making them ideally suited for read and write mixed-use enterprise applications.

KEY FEATURES

- PCIe® Gen3 x4 lane interface single/dual port support
- NVMe™ Rev. 1.3a compliant
- Capacities from 800GB to 6.4TB
- Up to 770K random read IOPS in single port (1x4) mode
- Low power consumption, with 16W maximum
- 2.5 inch small form factor, 15mm Z-Height
- 3 DWPD with 100% random write workload
- Power loss protection and end-to-end data protection, including T10 DIF
- Sanitize Instant Erase (SIE) option *Note 1,4
- Self-encrypting drive (SED) option *Note 2,4
- Self-encrypting drive (SED), FIPS 140-2 option *Note 2,3,4
- 5-year limited warranty

APPLICATIONS

- High performance computing (HPC) (financial trading, healthcare, and oil/gas exploration)
- Online transaction processing (OLTP) (transactional and relational databases)
- High-frequency trading (HFT)
- IoT, IIoT and Edge computing (automotive, autonomous vehicles, transportation, smart cities and smart factories)
- Media streaming (media and entertainment, and video surveillance)

MAIN SPECIFICATIONS

Model Number SIE Model Number SED Model Number SED FIPS Model Number		KCM51VUG6T40 KCM5XVUG6T40 KCM5DVUG6T40 KCM5FVUG6T40	KCM51VUG3T20 KCM5XVUG3T20 KCM5DVUG3T20 KCM5FVUG3T20	KCM51VUG1T60 KCM5XVUG1T60 KCM5DVUG1T60 KCM5FVUG1T60	KCM51VUG800G KCM5XVUG800G KCM5DVUG800G KCM5FVUG800G
Interface		PCIe® Rev. 3.1a Gen3 x 4 lane; NVMe™ Rev. 1.3a			
Formatted Capacity		6,400 GB	3,200 GB	1,600 GB	800 GB
Performance in single port (1x4) mode (Up to)	Interface Speed	32 GT/s (Gen3 x 4 lane)			
	Memory Type	BiCS FLASH™ TLC			
	Sustained 128KiB Sequential Read	3,350 MB/s		3,250 MB/s	
	Sustained 128KiB Sequential Write	3,040 MB/s		2,460 MB/s	1,250 MB/s
	Sustained 4KiB Random Read	770,000 IOPS	750,000 IOPS	650,000 IOPS	370,000 IOPS
	Sustained 4KiB Random Write	165,000 IOPS	160,000 IOPS	145,000 IOPS	95,000 IOPS
Supply Voltage	Allowable Voltage	12 V ± 10 % 3.3 Vaux ± 15 %			
Power Consumption (Ready)		6.0 W Typ.			

Model Number	KCM51VUGxxxx KCM5XVUGxxxx KCM5DVUGxxxx KCM5FVUGxxxx
MTTF	2,500,000 hours
DWPD	3
Warranty	5 years

MECHANICAL SPECIFICATIONS

Model Number	KCM51VUGxxxx KCM5XVUGxxxx KCM5DVUGxxxx KCM5FVUGxxxx
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

Model Number		KCM51VUGxxxx KCM5XVUGxxxx KCM5DVUGxxxx KCM5FVUGxxxx
Temperature	Operating	0 °C to 60 °C
Humidity	Operating	5 % to 95 % R.H.
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.

GT/s: Giga Transfers per second.

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 full 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, based on the sustained state of SSD, 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 NVM Express Inc.
*Note 2: SED (Self-Encrypting Drive) supports TCG Opal SSC. Unsupported features are included in these series. For more details, please make inquiries through "Contact us" in each region's website, https://business.toshiba-memory.com/
*Note 3: FIPS drives are designed to comply with FIPS 140-2 Level 2, which defines security requirements for cryptographic module by NIST (National Institute of Standards and Technology). For the latest validation status of each model, please contact us above.
*Note 4: Optional security feature compliant drives are not available in all countries due to export and local regulations.