

Enterprise SSD

Toshiba Memory Enterprise SSDs which are equipped with 3D flash memory “BiCS FLASH™” and a controller developed by Toshiba Memory are suitable for high-end servers and storage systems requiring high performance and high reliability. These SSDs strengthen data protection with power-loss-protection (PLP) and encryption technology to increase safety and security.

PM5 Series
SAS SSD



CM5 Series
PCIe® / NVMe™ SSD



▶ Enterprise Write Intensive SSD

High performance Enterprise SSDs providing high responsiveness, data transfer speed and reliability for a wide range of write intensive applications, from Big Data Analytics, HPC (High Performance Computing) to mainstream server and storage systems.

Model Number	User Capacity ^{*1}	DWPD ^{*2}	Flash Memory	Interface	Performance				Power Consumption (Typ.) ^{*7}	PLP ^{*8}	Environmental Temperature (Operating)	Dimensions Height/Width/Length	Weight	Power Supply Voltage
					128 KiB ^{*3 *4 *5}		4 KiB ^{*3 *4 *5 *6}							
					Sequential Read	Sequential Write	Random Read	Random Write						
PM5-M KPM51MUG**** Series (SAS, 2.5 inch, 15 mmH)														
KPM51MUG3T20	3,200 GB	10	BiCS FLASH™ TLC	SAS-3.0, single/dual port and MultiLink SAS™ support	2,100 MB/s	2,100 MB/s	385 KIOPS	230 KIOPS	9 W / 12 W / 14 W	Supported	0 to 60 °C	15.0 mm / 69.85 mm / 100.45 mm	130 g Max.	5 V / 12 V
KPM51MUG1T60	1,600 GB						370 KIOPS							
KPM51MUG800G	800 GB						340 KIOPS							
KPM51MUG400G	400 GB						1,260 MB/s							

* Regarding optional security featured lineups, please refer to *9 note.

▶ Enterprise Mixed Use SSD

High performance Enterprise SSDs developed with a balance of cost, performance and endurance for write and read mixed applications, such as media streaming, data warehousing and web servers.

Model Number	User Capacity ^{*1}	DWPD ^{*2}	Flash Memory	Interface	Performance				Power Consumption (Typ.) ^{*7}	PLP ^{*8}	Environmental Temperature (Operating)	Dimensions Height/Width/Length	Weight	Power Supply Voltage		
					128 KiB ^{*3 *4 *5}		4 KiB ^{*3 *4 *5 *6}									
					Sequential Read	Sequential Write	Random Read	Random Write								
CM5-V KCM51VUG**** Series (PCIe, 2.5 inch, 15 mmH)																
KCM51VUG6T40	6,400 GB	3	BiCS FLASH™ TLC	PCIe® Rev. 3.0 Gen3 x4, single/dual port support	3,350 MB/s	3,040 MB/s	770 KIOPS	165 KIOPS	16 W	Supported	0 to 60 °C	15.0 mm / 69.85 mm / 100.45 mm	130 g Max.	12 V / 3.3 Vaux		
KCM51VUG3T20	3,200 GB						750 KIOPS	160 KIOPS	15 W							
KCM51VUG1T60	1,600 GB						650 KIOPS	145 KIOPS	13 W							
KCM51VUG800G	800 GB						3,250 MB/s	1,250 MB/s	370 KIOPS						95 KIOPS	11 W
CM5-V KCM51V4C**** Series (PCIe, Add-in Card)																
KCM51V4C6T40	6,400 GB	3	BiCS FLASH™ TLC	PCIe® Rev. 3.0 Gen3 x4	3,350 MB/s	3,040 MB/s	770 KIOPS	165 KIOPS	16 W	Supported	0 to 60 °C	68.77 mm / 18.73 mm / 167.52 mm	220 g Max.	12 V / 3.3 Vaux		
KCM51V4C3T20	3,200 GB						750 KIOPS	160 KIOPS	15 W							
KCM51V4C1T60	1,600 GB						650 KIOPS	145 KIOPS	13 W							
KCM51V4C800G	800 GB						3,250 MB/s	1,250 MB/s	370 KIOPS						95 KIOPS	11 W
PM5-V KPM51VUG**** Series (SAS, 2.5 inch, 15 mmH)																
KPM51VUG6T40	6,400 GB	3	BiCS FLASH™ TLC	SAS-3.0, single/dual port and MultiLink SAS™ support	2,100 MB/s	2,100 MB/s	385 KIOPS	120 KIOPS	9 W / 12 W / 14 W	Supported	0 to 60 °C	15.0 mm / 69.85 mm / 100.45 mm	130 g Max.	5 V / 12 V		
KPM51VUG3T20	3,200 GB						370 KIOPS									
KPM51VUG1T60	1,600 GB						340 KIOPS									
KPM51VUG800G	800 GB						1,260 MB/s								270 KIOPS	80 KIOPS
KPM51VUG400G	400 GB						1,470 MB/s								680 MB/s	180 KIOPS

* Regarding optional security featured lineups, please refer to *9 note.

► Enterprise Read Intensive SSD

High performance Enterprise SSDs suitable for cost sensitive and read-intensive applications characterized by infrequent write operations or predominantly large block & sequential data pattern workloads.

Model Number	User Capacity ^{*1}	DWPD ^{*2}	Flash Memory	Interface	Performance				Power Consumption (Typ.) ^{*7}	PLP ^{*8}	Environmental Temperature (Operating)	Dimensions Height/Width/Length	Weight	Power Supply Voltage
					128 KiB ^{*3 *4 *5}		4 KiB ^{*3 *4 *5 *6}							
					Sequential Read	Sequential Write	Random Read	Random Write						
CM5-R KCM51RUG**** Series (PCIe, 2.5 inch, 15 mmH)														
KCM51RUG15T3	15,360 GB	1	BiCS FLASH™ TLC	PCIe® Rev. 3.0 Gen3 x4, single/dual port support	3,350 MB/s	3,040 MB/s	590 KIOPS	35 KIOPS	18 W	Supported	0 to 60 °C	15.0 mm / 69.85 mm / 100.45 mm	130 g Max.	12 V / 3.3 Vaux
KCM51RUG7T68	7,680 GB						770 KIOPS	80 KIOPS	16 W					
KCM51RUG3T84	3,840 GB						750 KIOPS	70 KIOPS	15 W					
KCM51RUG1T92	1,920 GB				3,250 MB/s	650 KIOPS	65 KIOPS	13 W						
KCM51RUG960G	960 GB					1,250 MB/s	370 KIOPS	50 KIOPS	11 W					
CM5-R KCM51R4C**** Series (PCIe, Add-in Card)														
KCM51R4C15T3	15,360 GB	1	BiCS FLASH™ TLC	PCIe® Rev. 3.0 Gen3 x4	3,350 MB/s	3,040 MB/s	590 KIOPS	35 KIOPS	18 W	Supported	0 to 60 °C	68.77 mm / 18.73 mm / 167.52 mm	220 g Max.	12 V / 3.3 Vaux
KCM51R4C7T68	7,680 GB						770 KIOPS	80 KIOPS	16 W					
KCM51R4C3T84	3,840 GB						750 KIOPS	70 KIOPS	15 W					
KCM51R4C1T92	1,920 GB				3,250 MB/s	650 KIOPS	65 KIOPS	13 W						
KCM51R4C960G	960 GB					1,250 MB/s	370 KIOPS	50 KIOPS	11 W					
PM5-R KPM51RUG**** Series (SAS, 2.5 inch, 15 mmH)														
KPM51RUG15T3	15,360 GB	1	BiCS FLASH™ TLC	SAS-3.0, single/dual port and MultiLink SAS™ support	2,100 MB/s	2,100 MB/s	300 KIOPS	35 KIOPS	9 W / 12 W / 14 W	Supported	0 to 60 °C	15.0 mm / 69.85 mm / 100.45 mm	130 g Max.	5 V / 12 V
KPM51RUG7T68	7,680 GB						385 KIOPS	55 KIOPS						
KPM51RUG3T84	3,840 GB						370 KIOPS							
KPM51RUG1T92	1,920 GB				340 KIOPS	45 KIOPS								
KPM51RUG960G	960 GB				1,260 MB/s		270 KIOPS							
KPM51RUG480G	480 GB				1,470 MB/s		680 MB/s	180 KIOPS						

* Regarding optional security featured lineups, please refer to *9 note.

*1 : Definition of capacity: 1 terabyte (1 TB) = 1,000 gigabytes (GB), 1 GB = 1,000,000,000 (10⁹) bytes

*2 : 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.

*3 : A kibibyte (KiB) means 2¹⁰, or 1,024 bytes.

*4 : The performance of the PM5 series is the value in dual-port mode with 14W power mode. The performance of the CM5 series is the value in single-port mode (1x4).

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

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

*7 : Regarding PM5 series power consumption, customers can select power mode from 9W/12W/14W/18W (for MultiLink). As for the CM5 series, customers can select power mode from 9W/11W/14W/16W/18W as well.

*8 : PLP(Power Loss Protection): PLP supports to record data in buffer memory to flash memory, utilizing back up power of a capacitor in case of sudden supply shut down.

*9 : Regarding security features

- PM5 and 2.5inch of CM5 series have lineups of security options, Sanitize Instant Erase (SIE), Self-Encrypting Drive (SED), and Self-Encrypting Drive (SED) with FIPS 140-2 validated or compliant. Add-in Card of CM5 has SIE and SED option.
- The model numbers which have optional security feature are different.
- The Sanitize Instant Erase (SIE) option supports Crypto Erase, which is a standardized feature defined by the technical committees (T10) of INCITS (the Inter National Committee for Information Technology Standards) or by NVM Express Inc..
- SED (Self-Encrypting Drive) supports TCG Enterprise SSC or TCG Opal SSC (Unsupported features are included in CM5 / SED optional model).
- FIPS drives are designed to comply with FIPS 140-2 Level 2, which defines "Security Requirements for Cryptographic Modules" by NIST (the National Institute of Standards and Technology). PM5 series is validated, others are planning to make FIPS 140-2 validated drives available.
- For more details and the latest validation status of each drive, please send an inquiry through "Contact us" in each region's website, <https://business.toshiba-memory.com/>
- Optional security feature compliant drives are not available in all countries due to export and local regulations.

● Customers must refer to and comply with the latest versions of all relevant Toshiba Memory information, including without limitation, this document, the specifications, the data sheets and application notes for Product and the precautions and conditions set forth in the Toshiba Memory Corporation Reliability Handbook and the instructions for the application with which the Product will be used with or for.

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BiCS FLASH™

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