

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.



SSDs with Toshiba Memory's 64-layer 3D flash memory were awarded "Interop 2018 Best of Show Award" Special Prize

Model Number	User Capacity ^{*1}	DWPD ^{*2}	Flash Memory	Interface	Performance				Power Consumption (Ready)	PLP	Environmental Temperature (Operating)	Optional Security Feature	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-type form factor)																
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	5.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	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	270 KIOPS								150 KIOPS
PM5-B KPM51BUG**** Series (SAS, 2.5-type form factor)																
KPM51BUG3T20	3,200 GB	5	BiCS FLASH™ TLC	SAS-3.0, single/dual port and MultiLink SAS™ support	1,940 MB/s	2,100 MB/s	370 KIOPS	120 KIOPS	5.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	15.0 mm / 69.85 mm / 100.45 mm	130 g Max	5 V / 12 V	
KPM51BUG1T60	1,600 GB						350 KIOPS									
KPM51BUG800G	800 GB						1,835 MB/s									1,260 MB/s
KPM51BUG400G	400 GB						1,520 MB/s	680 MB/s								190 KIOPS

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 (Ready)	PLP	Environmental Temperature (Operating)	Optional Security Feature	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-type form factor)																	
KCM51VUG6T40	6,400 GB	3	BiCS FLASH™ TLC	PCIe® 3.0 Gen3 x4, single/dual port support	3,350 MB/s	3,040 MB/s	770 KIOPS	165 KIOPS	6.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	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									
KCM51VUG1T60	1,600 GB						650 KIOPS	145 KIOPS									
KCM51VUG800G	800 GB						3,250 MB/s	1,250 MB/s								370 KIOPS	95 KIOPS
CM5-V KCM51V4C**** Series (PCIe, Add-in Card type)																	
KCM51V4C6T40	6,400 GB	3	BiCS FLASH™ TLC	PCIe® 3.0 Gen3 x4	3,350 MB/s	3,040 MB/s	770 KIOPS	165 KIOPS	6.0 W Typ.	Supported	0 to 60 °C	SIE SED	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									
KCM51V4C1T60	1,600 GB						650 KIOPS	145 KIOPS									
KCM51V4C800G	800 GB						3,250 MB/s	1,250 MB/s								370 KIOPS	95 KIOPS
PM5-V KPM51VUG**** Series (SAS, 2.5-type form factor)																	
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	5.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	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	70 KIOPS
KPM51VUG7T68	7,680 GB						90 KIOPS										
KPM51VUG3T84	3,840 GB							380 KIOPS									
KPM51VUG1T92	1,920 GB							370 KIOPS									
KPM51VUG960G	960 GB						1,835 MB/s	1,260 MB/s								290 KIOPS	60 KIOPS
KPM51VUG480G	480 GB						1,520 MB/s	680 MB/s								190 KIOPS	

▶ 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 (Ready)	PLP ^{*7}	Environmental Temperature (Operating)	Optional Security Feature ^{*8}	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 KCM51RUC**** Series (PCIe, 2.5-type form factor)															
KCM51RUG15T3	15,360 GB	1	BiCS FLASH™ TLC	PCIe® 3.0 Gen3 x4, single/dual port support	3,350 MB/s	3,040 MB/s	590 KIOPS	35 KIOPS	6.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	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							
KCM51RUG3T84	3,840 GB						750 KIOPS	70 KIOPS							
KCM51RUG1T92	1,920 GB				3,250 MB/s	2,460 MB/s	650 KIOPS	65 KIOPS							
KCM51RUG960G	960 GB				1,250 MB/s	370 KIOPS	50 KIOPS								
CM5-R KCM51R4C**** Series (PCIe, Add-in Card type)															
KCM51R4C15T3	15,360 GB	1	BiCS FLASH™ TLC	PCIe® 3.0 Gen3 x4	3,350 MB/s	3,040 MB/s	590 KIOPS	35 KIOPS	6.0 W Typ.	Supported	0 to 60 °C	SIE SED	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							
KCM51R4C3T84	3,840 GB						750 KIOPS	70 KIOPS							
KCM51R4C1T92	1,920 GB				3,250 MB/s	2,460 MB/s	650 KIOPS	65 KIOPS							
KCM51R4C960G	960 GB				1,250 MB/s	370 KIOPS	50 KIOPS								
PM5-R KPM51RUG**** Series (SAS, 2.5-type form factor)															
KPM51RUG30T7	30,720 GB	1	BiCS FLASH™ TLC	SAS-3.0, single/dual port and MultiLink SAS™ support	TBD				5.0 W Typ.	Supported	0 to 60 °C	SIE SED FIPS	15.0 mm / 69.85 mm / 100.45 mm	130 g Max	5 V / 12 V
KPM51RUG15T3	15,360 GB				2,100 MB/s	2,100 MB/s	300 KIOPS	35 KIOPS							
KPM51RUG7T68	7,680 GB						385 KIOPS	55 KIOPS							
KPM51RUG3T84	3,840 GB						370 KIOPS								
KPM51RUG1T92	1,920 GB				1,260 MB/s	680 MB/s	340 KIOPS	45 KIOPS							
KPM51RUG960G	960 GB						270 KIOPS								
KPM51RUG480G	480 GB				1,470 MB/s	680 MB/s	180 KIOPS								

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

*4 : The performance of the PM5 series is the value in dual-port 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 : 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.

*8 : Regarding security features, please refer to below statement:

- The model numbers of our products with the security options are different.
- The Sanitize Instant Erase (SIE) option supports Crypto Erase, which is a standardized feature defined by NVM Express Inc. or by the technical committees (T10/T13) of INCITS (the InterNational Committee for Information Technology Standards).
- SED (Self-Encrypting Drive) supports TCG Enterprise SSC or TCG Opal SSC (Restrictions may apply depending on models).
- FIPS drives are validated as FIPS 140-2 Level 2 conformant which defines security requirements for cryptographic module by NIST (National Institute of Standards and Technology). Planning to make FIPS 140-2 validation available with each model.
- SIE, SED and FIPS 140-2 compliant drives are not available in all countries due to the 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 Semiconductor Reliability Handbook and the instructions for the application with which the Product will be used with or for.

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