KIOXIA CD6-V Series (2.5-inch)

(KCD61VUL/KCD6XVUL/KCD6DVUL/KCD6FVUL)

Data Center NVMe™ Mixed Use SSD

KIOXIA CD6-V Series is a mixed use data center NVMe™ SSD that is optimized to support a broad range of scale-out and cloud applications, including big data/IoT, online transaction processing and virtualization. Built with a PCIe® Gen4 x4 interface, the CD6-V Series SSDs deliver consistent performance up to 1M IOPS (random read) and 250K IOPS (random write), with active power consumption of 13-19 W.

Featuring KIOXIA Corporation's 96-layer BiCS FLASHTM 3D TLC memory, the CD6-V SSDs deliver 3DWPD (Drive Writes Per Day) of endurance and storage capacities up to 12.8 TB in a 2.5-inch form factor, making them well-suited for hyperscale data center applications.

Product image may represent a design model.

Key Features

- PCIe® 4.0, NVMe™ 1.4 specification compliant
- Form factor: 2.5-inch, 15 mm thickness
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ 96-layer 3D TLC
- SFF-TA-1001 conformant (U.3)
- Single-port design, optimized for data center class workloads
- 6th generation, two-die failure recovery and double parity protection
- Consistent performance and reliability for demanding 24x7 environments
- Designed for high-density storage deployments
- Power loss protection (PLP) and end-to-end data protection
- Security options: SIE, SED, FIPS 140-2 [1, 2, 3, 4, 5]
- Six power mode settings

Key Applications

- Hyperscale
- IoT and big data analytics
- Online transaction processing (OLTP) (transactional and relational databases)
- Virtualized environments
- Streaming media and content delivery networks

Specifications

Base Model Number	KCD61VUL12T8	KCD61VUL6T40	KCD61VUL3T20	KCD61VUL1T60	KCD61VUL800G
SIE Model Number	KCD6XVUL12T8	KCD6XVUL6T40	KCD6XVUL3T20	KCD6XVUL1T60	KCD6XVUL800G
SED Model Number	KCD6DVUL12T8	KCD6DVUL6T40	KCD6DVUL3T20	KCD6DVUL1T60	KCD6DVUL800G
FIPS SED Model Number	KCD6FVUL12T8	KCD6FVUL6T40	KCD6FVUL3T20	KCD6FVUL1T60	KCD6FVUL800G
Capacity	12,800 GB	6,400 GB	3,200 GB	1,600 GB	800 GB
Basic Specifications					
Form Factor	2.5-inch, 15 mm thickness				
Interface	PCIe® 4.0, NVMe™ 1.4				
Maximum Interface Speed	64 GT/s (PCIe® Gen4 x4)				
Flash Memory Type	BiCS FLASH™ TLC				

Specifications (Continued)

Capacity	12,800 GB	6,400 GB	3,200 GB	1,600 GB	800 GB
Performance (Up to)					
Sustained 128 KiB Sequential Read	5,500 MB/s	6,200 MB/s		5,800 MB/s	
Sustained 128 KiB Sequential Write	4,000 MB/s		2,350 MB/s	1,150 MB/s	1,300 MB/s
Sustained 4 KiB Random Read	750K IOPS	1,000K IOPS		700K IOPS	
Sustained 4 KiB Random Write	110K IOPS	250K IOPS	160K IOPS	85K IOPS	90K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %				
Power Consumption (Active)	19 W typ.		15 W typ.	13 W typ.	
Power Consumption (Ready)	5 W typ.				
Reliability					
MTTF	2,500,000 hours				
Warranty	-				
DWPD	3				
Dimensions					
Thickness	15.0 mm +0 / -0.5 mm				
Width	69.85 mm ± 0.25 mm				
Length	100.45 mm Max				
Weight	130 g Max				
Environmental					
Temperature (Operating)	0 ℃ to 70 ℃				
Temperature (Non-operating)	-				
Humidity (Operating)	5 % to 95 % R.H.				
Vibration (Operating)	21.27 m/s² { 2.17 Grms } (5 Hz to 800 Hz)				
Shock (Operating)	9.8 km/s² { 1,000 G } (0.5 ms)				

Definition of capacity: KIOXIA 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 1 GB = 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, 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 Writes 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 the specified lifetime. Actual results may vary due to system configuration, usage and other factors.

Read and write speed may vary depending on various factors such as host devices, software (drivers, OS etc.), and read/write conditions.

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

[1] Sanitize Instant Erase (SIE), Self-Encrypting Drive (SED) and FIPS (Federal Information Processing Standards) SED security optional models are available.

[2] SIE optional model supports Crypto Erase, which is a standardized feature defined by the technical committees (T10) of INCITS (the InterNational Committee for Information Technology Standards).

[3] SED optional model supports TCG Opal and Ruby SSCs. It has a few unsupported features of TCG Opal SSC. For more details, please make inquiries through "Contact us" in each region's website, https://www.kioxia.com/.

[4] FIPS SED optional model utilizes a security module designed to comply with FIPS 140-2 and FIPS 140-3, which define security requirements for cryptographic module by NIST (National Institute of Standards and Technology). For the latest validation status, please make inquiries through "Contact us" in each region's website, https://www.kioxia.com/.

[5] Security optional models are not available in all countries due to export and local regulations.

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