KIOXIA

Preliminary

KIOXIA CD8P-V Series (2.5-inch)

(KCD81PUG/KCD8XPUG/KCD8DPUG)

Data Center NVMe™ Mixed Use SSD

KIOXIA CD8P-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® 5.0 (32 GT/s x4) interface, the CD8P-V Series SSDs deliver consistent performance up to 2,000K IOPS (random read) and 400K IOPS (random write), and realize 60 % to 80 % increase in sequential read performance when compared to previous generation PCIe® 4.0 SSDs (KIOXIA CD8-V Series).

Featuring KIOXIA BiCS FLASH™ generation 5 TLC flash memory, CD8P-V 2.5-inch form factor SSDs deliver 3 DWPD (Drive Writes Per Day) of endurance and storage capacities up to 12.8 TB, making them well-suited for hyperscale data center applications.

Product image may represent a design model.

Key Features

- PCIe® 5.0, NVMe™ 2.0 specification compliant
- Open Compute Project Datacenter NVMe™ SSD specification v2.0 support (not all requirements)
- Form factor: 2.5-inch, 15 mm thickness
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ generation 5 TLC flash memory
- Single-port design, optimized for data center class workloads
- Consistent performance and reliability for demanding 24x7 environments
- Designed for high-density storage deployments
- Power loss protection (PLP) and end-to-end data correction
- Security options: SIE, SED[1][2][3][4]

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	KCD81PUG12T8	KCD81PUG6T40	KCD81PUG3T20	KCD81PUG1T60
SIE Model Number	KCD8XPUG12T8	KCD8XPUG6T40	KCD8XPUG3T20	KCD8XPUG1T60
SED Model Number	KCD8DPUG12T8	KCD8DPUG6T40	KCD8DPUG3T20	KCD8DPUG1T60
Capacity	12,800 GB	6,400 GB	3,200 GB	1,600 GB
Basic Specifications				
Form Factor	2.5-inch, 15mm thickness			
Interface	PCIe® 5.0, NVMe™ 2.0			
Maximum Interface Speed	128 GT/s (PCIe® Gen5 x4)			
Flash Memory Type	BiCS FLASH™ TLC			

Specifications (Continued)

Capacity	12,800 GB	6,400 GB	3,200 GB	1,600 GB
Performance (Up to)				
Sustained 128 KiB Sequential Read	12,000 MB/s			
Sustained 128 KiB Sequential Write	5,500 MB/s			3,500 MB/s
Sustained 4 KiB Random Read	2,000K IOPS		1,900K IOPS	1,600K IOPS
Sustained 4 KiB Random Write	400K IOPS			300K IOPS
Power Requirements				
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %			
Power Consumption (Active)	23 W typ.	21 W typ.	19 W typ.	18 W typ.
Power Consumption (Ready)	5 W typ.			
Reliability				
MTTF	2,500,000 hours			
Warranty	5 years			
DWPD	3			
Dimensions				
Thickness	15 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 °C to 73 °C		0 °C to 76 °C	
Temperature (Non-operating)	-40 °C to 85 °C			
Humidity (Operating)	5 % to 95 % R.H.			
Vibration (Operating)	21.27 m/s² { 2.17 Grms } (5 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).

Temperature (operating): Specified by the composite temperature reported by SMART.

[1] Sanitize Instant Erase (SIE) and Self-Encrypting Drive (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] Security optional models are not available in all countries due to export and local regulations.

All information provided here is subject to change without prior notice.