KIOXIA

BG3 Series End of Sales

Client SSD

The BG3 series leverages 64-layer, 3-bit-per-cell (TLC) BiCS FLASH™ and features NVMe™ Revision 1.2.1. With Host Memory Buffer (HMB) technology, this SSD series retains high performance in a DRAM-less architecture, while enabling reduced power and a smaller footprint.

BG3 SSDs, as an innovative, next generation single-package ball grid array (BGA) SSD product line, harness the flexibility in system design that enables mobile computing and IoT embedded devices to be smaller, lighter, faster, and more power efficient. Also, these power-saving BG3 SSDs offer data center applications an alternative solution for server boot storage.

The BG3 series is available in 128 GB, 256 GB, and 512 GB capacities. All three models are available in a surface-mount single package M.2 1620 or a removable module M.2 2230 form factor. BG3 SED models are also available.

Key Features

- KIOXIA 64-Layer BiCS FLASH™
- PCIe® Gen3 x2 NVMe™
- Capacities up to 512 GB
- M.2 1620 single package and M.2 2230 single-sided form factor
- TCG OPAL 2.01 Optional for SED

Key Applications

- Ultra-mobile PCs
- 2-in-1 notebook PCs
- IoT/embedded devices
- Server and storage array boot drives

Specifications

Model Number	**KBG30ZPZ512G**	**KBG30ZPZ256G**	**KBG30ZPZ128G**	**KBG30ZMS512G**	**KBG30ZMS256G**	**KBG30ZMS128G**
SED Model Number	**KBG3AZPZ512G**	**KBG3AZPZ256G**	**KBG3AZPZ128G**	**KBG3AZMS512G**	**KBG3AZMS256G**	**KBG3AZMS128G**
Physical						
Capacity[1]	512 GB	256 GB	128 GB	512 GB	256 GB	128 GB
Form Factor	Single Package			Single-Sided		
	M.2 1620-S3	M.2 1620-S2		M.2 2230-S3	M.2 2230-S2	
Interface	PCIe® Base Specification Revision 3.1a (PCIe®)					
Interface Speed	16 GT/s (PCIe® Gen3 x2)					
Command	NVMe™ Revision 1.2.1 (NVMe™)					
Memory Type	BiCS FLASH™ TLC					
Connector Type	-			M.2 B-M		

Specifications (Continued)

Model Number		KBG30ZPZ512G	KBG30ZPZ256G	KBG30ZPZ128G	KBG30ZMS512G	KBG30ZMS256G	KBG30ZMS128G
SED Model Number		KBG3AZPZ512G	KBG3AZPZ256G	KBG3AZPZ128G	KBG3AZMS512G	KBG3AZMS256G	KBG3AZMS128G
Capacity[1]		512 GB	256 GB	128 GB	512 GB	256 GB	128 GB
Form Factor		Single Package			Single-Sided		
		M.2 1620-S3	M.2 1620-S2		M.2 2230-S3	M.2 2230-S2	
Performance[2] (Up to)							
Sequential Read	Non-SED	1,500 MB/s {1,430 MiB/s}	1,400 MB/s {1,330 MiB/s}	1,300 MB/s {1,240 MiB/s}	1,500 MB/s {1,430 MiB/s}	1,400 MB/s {1,330 MiB/s}	1,300 MB/s {1,240 MiB/s}
	SED	1,300 MB/s {1,240 MiB/s}	1,250 MB/s {1,190 MiB/s}	1,200 MB/s {1,140 MiB/s}	1,300 MB/s {1,240 MiB/s}	1,250 MB/s {1,190 MiB/s}	1,200 MB/s {1,140 MiB/s}
Sequential Write	Non-SED	1,000 MB/s {950 MiB/s}	800 MB/s {760 MiB/s}	600 MB/s {570 MiB/s}	1,000 MB/s {950 MiB/s}	800 MB/s {760 MiB/s}	600 MB/s {570 MiB/s}
	SED	950 MB/s {900 MiB/s}	750 MB/s {710 MiB/s}	550 MB/s {520 MiB/s}	950 MB/s {900 MiB/s}	750 MB/s {710 MiB/s}	550 MB/s {520 MiB/s}
Power Requirements							
Supply Voltage		3.3 V ± 5 % | 1.8 V ± 5 % | 1.2 V ± 5 %			3.3 V ± 5 %		
Power Consumption (Typ.)	Active	2.8 W typ.		2.7 W typ.	3.3 W typ.		3.2 W typ.
	L1.2 mode	5 mW typ.			5 mW typ.		
Reliability[3]							
MTTF		1,500,000 hours Product Life: Approximately 5 years					
Mechanical							
Dimension (LxWxH)		20.0 mm x 16.0 mm x 1.5 mm	20.0 mm x 16.0 mm x 1.3 mm		30.0 mm x 22.0 mm x 2.38 mm	30.0 mm x 22.0 mm x 2.18 mm	
Weight (Typ.)		1.00 g typ.	0.85 g typ.		2.60 g typ.	2.42 g typ.	
Environmental							
Temperature		Operating: 0 °C to 80 °C (Package Surface Temperature)			Operating: 0 °C to 80 °C (Components Temperature)		
		Non-Operating: -40 °C to 85 °C					
Vibration (Operating)		-			196 m/s² { 20 G } (Peak, 10 ~ 2,000 Hz)		
Shock (Operating)		-			14.7 km/s² { 1,500 G } (0.5 ms)		
Additional Features		• Device Self-test is supported. • Host Controlled Thermal Management (HCTM) is supported. • The feature of Host Memory Buffer (HMB) is supported. • Firmware security feature (only digitally signed firmware can be installed) is supported.					

[1] Definition of capacity: KIOXIA Corporation definesa 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.

[2] Read and write speed, tested on the state of "Host Memory Buffer (HMB) = On", may vary depending on the host device, read and write conditions, and file size.
1 MiB (mebibyte) = 2^20 bytes = 1,048,576 bytes, and 1 MB (megabyte) = 1,000,000 bytes.

[3] 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.

[4] The Safety/EMI Standard is supported for KBG3xZMSxxxx only.

Products and specifications discussed herein are subject to change without notice. All information discussed herein is provided on an "as is" basis, without warranties of any kind. Before creating and producing designs and using, customers must refer to and comply with the latest versions of the product specifications.

*PCIe® is a registered trademark of PCI-SIG.
*NVMe™ is a trademark of NVM Express, Inc.
*All other company names, product names, and service names mentioned herein may betrademarks of their respective companies.
*Availability of the SED model line-up may vary by region.