TOSHIBA

End of Sales

HDD

MG06SCA SERIES
ENTERPRISE CAPACITY HDD

Product image may represent a design model.

The MG06SCA Enterprise Capacity HDD models provide capacities up to 10 TB[1] and 7,200 rpm performance, in a robust design engineered for nearline business-critical workloads.

The MG06SCA series utilizes industry-standard 3.5-inch[2] 26.1 mm height form factor and Advanced Format sector technologies for optimum capacity and data reliability. Toshiba Persistent Write Cache technology[3] helps enhance performance while also maintaining data integrity in the event of a sudden loss of power. Equipped with 12 Gbit/s SAS interface[4], the Enterprise Capacity MG06SCA models help save rack space and reduce the footprint and operational burden of business critical servers and storage systems.

512e or 4Kn Advanced Format sector technology models are available. 4Kn models (MG06SCAxxxA) offer optimum performance and compatibility with 4K-capable applications and operating environments. 512e models (MG06SCAxxxE) are broadly supported today and also help provide support for legacy applications and operating environments that require 512 B sector lengths.

KEY FEATURES

- Industry Standard 3.5-inch 26.1 mm Height Form Factor
- Large Capacity (10 / 8 / 6 TB Models)
- 7,200 rpm Performance
- Dual-Port 12 Gbit/s SAS Interface
- 550 total TB Transferred per Year Workload Rating[5]
- 512e or 4Kn Advanced Format Sector Technology
- Toshiba Persistent Write Cache Technology to help Maintain Data Integrity during Power-Loss Events

APPLICATIONS

- Engineered for Mid-line / Nearline Business Critical Workloads
- Tier 2 Business-Critical Servers and Storage Systems
- Servers Supporting Application Workloads that Benefit from High Capacity per Spindle
- Capacity-Optimized Data Center Storage Systems
- Object and File Storage Solutions

SPECIFICATIONS

Item		MG06SCA10TA MG06SCA10TE	MG06SCA800A MG06SCA800E	MG06SCA600A MG06SCA600E
Interface		SAS-3		
Formatted Capacity		10 TB	8 TB	6 TB
Performance	Interface Speed	12.0 Gbit/s, 6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s		
	Rotation Speed	7,200 rpm		
	Buffer Size	256 MiB [6]		
	Maximum Data Transfer Speed[7] (Sustained)	237 MiB/s Typ.	230 MiB/s Typ.	
Logical Data Block Length	MG06SCAxxxA (fixed length)	4096 B / 4160 B / 4224 B		
	MG06SCAxxxE (emulation) [8]	Host:512 B, Disk:4096 B Host:520 B, Disk:4160 B Host:528 B, Disk:4224 B		
Supply Voltage	Allowable Voltage	12 V [9] ± 10 % / 5 V [9] + 10% / -7% [10]		
Power Consumption	Random Read / Write 4KB Q1	10.78 W Typ.	9.87 W Typ.	9.18 W Typ.
	Active Idle (Idle-A)	7.49 W Typ.	6.62 W Typ.	5.94 W Typ.
Acoustics (Sound Power) [11]	Active Idle	34 dB Typ.		

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ENVIRONMENTAL LIMITS

Item		Specification
Ambient temperature	Operating	5 °C to 55 °C
	Non-Operating	- 40 °C to 70 °C
Relative Humidity	Operating	5 % to 90 % R.H. (No condensation)
	Non-Operating	5 % to 95 % R.H. (No condensation)
Altitude	Operating	- 305 m to 3,048 m
	Non-Operating	- 305 m to 12,192 m
Shock [12]	Operating	686 m/s^2 { 70 G } (2 ms duration)
	Non-Operating	2,450 m/s^2 { 250 G } (2 ms duration)
Vibration [12]	Operating [13]	7.35 m/s^2 { 0.75 G } (5 to 300 Hz) 2.45 m/s^2 { 0.25 G } (300 to 500 Hz)
	Non-Operating [14]	29.4 m/s^2 { 3.0 G } (5 to 500 Hz)

RELIABILITY

Item	Specification
MTTF [15]	2,500,000 hours
Non-recoverable Error Rate	10 error per 10^{16} bits read
Load / Unload	600,000 times
Availability	24 hours/day, 7 days/week
Rated Annual Workload (Total TB Transferred per Year, R/W)	550 TB per year

MECHANICAL SPECIFICATIONS

Item	Specification
Width	101.85 mm Max
Height	26.1 mm Max
Length	147.0 mm Max
Weight	770 g Max .

[1] Definition of capacity: Toshiba 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 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] "2.5-inch" and "3.5-inch" mean the form factor of HDDs or SSDs. They do not indicate drive's physical size.
[3] PWC (Persistent Write Cache) with PLP (Power Loss Protection) : PWC with PLP is a function to handle the write data that the drive reports "Normal completion" to the host but not being stored to hard disk media yet. The write data may be written to the commanded LBA on the hard disk media. The un-written data to hard disk media is stored to Flash memory using back up power by PLP when the power supply to the drive suddenly is shut down. And, after PLP operation, it may be required more time to start up the drive than in case of normal shutdown. 1) PLP does not secure data in the mode of all the power shutdowns. When power supplies other than recommended procedure are intercepted, data might be lost. 2) In the power shutdown before it reports on the Write completion, data not anticipated might be lost.
[4] Read and write speed may vary depending on the host device, read and write conditions, and file size.
[5] Workload is defined as the amount of data written, read or verified by commands from host system.
[6] A kibibyte (KiB) means 2^{10}, or 1,024 bytes, a mebibyte (MiB) means 2^{20}, or 1,048,576 bytes, and a gibibyte (GiB) means 2^{30}, or 1,073,741,824 bytes.
[7] The maximum sustained data rate and interface speed may be restricted to the response speed of host system and by transmission characteristics. 1 Gbit/s = 1,000,000,000 bits/s. 1 MiB/s = 1,048,576 bytes/s
[8] Read–modify-write is supported.
[9] Input voltages are specified at the HDD connector side, during HDD ready state.
[10] Make sure the value is not less than -0.3V DC (less than -0.6V, 0.1ms) when turning on or off the power.
[11] The measuring method is based on ISO 7779.
[12] Vibration applied to the HDD is measured at near the mounting screw hole on the frame as much as possible.
[13] At random seek write/read and default on retry setting with log sweep vibration.
[14] At power-off state after installation
[15] 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.

・Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant TOSHIBA information and the instructions for the application that Product will be used with or for.