

MQ04-V SERIES VIDEO HDD

Toshiba's MQ04ABD-V series of 5400 rpm 2.5-inch^[1] HDDs deliver up to 2 TB^[2] of storage capacity, using drive-managed SMR technology. The MQ04ABD-V series is suitable for set-top-box (STB), digital video recorders (DVR) and network video recorders (NVR) applications where large capacity, low power and low acoustics are critical.



Product image may represent a design model.

KEY FEATURES

- Up to 2 TB of Storage Capacity
- 2.5-inch, Small Form Factor
- 5400 rpm Performance
- SATA up to 6.0 Gbit/s
- Advanced Format (AF) 512e Sector Length
- Drive-Managed SMR Technology
- Low Power Consumption Compared to 3.5-inch Form Factor (DT01ABAxV series)
- Low acoustics 23 dB (Idle)

APPLICATIONS

- Set-Top-Box (STB)
- Digital Video Recorders (DVR)
- Network Video Recorders (NVR)

SPECIFICATIONS

Item		MQ04ABD200V	MQ04ABF100V
Interface		SATA-3.3	
Formatted Capacity		2 TB	1 TB
Performance	Interface Speed ^[3]	6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s	
	Rotation Speed	5400 rpm	
	Average Latency Time	5.56 ms	
	Buffer Size	128 MiB ^[4]	
Logical Data Block Length		HOST: 512 B, DISK: 4096 B ^[5]	
Supply Voltage	Allowable Voltage	5 V ^[6] ± 5 %	
Power Consumption	Read / Write ^[7]	1.65 W Typ.	
	Low Power Idle ^[8]	0.60 W Typ.	
Acoustics (Sound Power)	For idle mode (Spindle is rotating)	23 dB Ave.	19 dB Ave.
	Seek	24 dB Ave.	21 dB Ave.

ENVIRONMENTAL LIMITS

Item	Specification	
Ambient temperature	Operating	0 °C to 60 °C (No condensation)
	Non-Operating	- 40 °C to 70 °C (No condensation)
Relative Humidity	Operating	8 % to 90 % R.H. (No condensation)
	Non-Operating	8 % to 90 % R.H. (No condensation)
Altitude	Operating	- 300 m to 3000 m
	Non-Operating	- 300 m to 12 000 m
Shock ^[9]	Operating	3920 m/s ² { 400 G } / 2 ms duration
	Non-Operating	9800 m/s ² { 1000 G } / 2 ms duration
Vibration ^[9]	Operating ^[10]	9.8 m/s ² { 1 G } (5 to 500 Hz)
	Non-Operating ^[11]	49 m/s ² { 5 G } (15 to 500 Hz)

RELIABILITY

Item	Specification
MTTF ^[12]	600 000 hours
Non-recoverable Error Rate	1 error per 10 ¹⁴ bits read
Load / Unload	600 000 times
Rated Annual Workload	55 TB per year

MECHANICAL SPECIFICATIONS

Item	MQ04ABD200V	MQ04ABF100V
Width	69.85 mm	
Height	9.5 mm	7.0 mm
Length	100.0 mm	
Weight (Max)	117 g	92 g

[1] "2.5-inch" mean the form factor of HDDs. They do not indicate drive's physical size.

[2] 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 = 2³⁰ = 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.

[3] 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

[4] 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.

[5] Read-modify-write is supported.

[6] When DC power is turned off, +5 V voltage must not be lower than 0 V.

[7] The read/write current is specified based on three operations of 63 sector read/write per 100 ms.

[8] The values are based on using S-ATA power management features. The Partial mode is used for the idle modes power consumption measurements and the Slumber mode is used for Standby and Sleep modes power consumption measurements. Motor is rotating at normal speed but heads are unloaded on the ramp.

[9] Vibration applied to the HDD is measured at near the mounting screw hole on the frame as much as possible.

[10] At random seek write/read and default on retry setting with log sweep vibration.

[11] At power-off state after installation

[12] MTTF (Mean Time to Failure) of the HDDs during its life time is 600 000 hours. Average HDA surface temperature:25°C or less, workloads: 55 TB/year, which is defined as the amount of data written, read or verified by commands from host system). Continual or sustained operation at case HDA surface temperature above 25°C may degrade product reliability.

*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.

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