

DT02 SERIES DESKTOP HDD

Toshiba's DT02 series of 3.5-inch^[1] HDDs deliver up to 6 TB^[2] of storage capacity. Optimized for use in consumer and commercial desktop computers, All-in-One systems, external storage and applications where capacity, low power consumption and reliability are critical.



Product image may represent a design model.

KEY FEATURES

- Up to 6TB capacity
- MTTF^[3] of 600K hours
- Industry-standard 3.5-inch form-factor and SATA interface
- Advanced Format 512e Sector Technology
- Drive-Managed SMR (Shingled magnetic recording) Technology

APPLICATIONS

- Desktop computers
- All-in-One systems
- External storage

SPECIFICATIONS

Item		DT02ABA600	DT02ABA400	DT02ABA200
Interface		SATA-3.3		
Formatted Capacity		6 TB	4 TB	2 TB
Performance	Interface Speed ^[4]	6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s		
	Rotation Speed	5400 rpm		
	Buffer Size	128 MiB ^[5]		
	Maximum Data Transfer Speed ^[6] (Sustained) (Typ.)	176.4 MiB/s		
Logical Data Block Length ^[7]		HOST: 512 B, DISK: 4096 B		
Supply Voltage	Allowable Voltage	12 V ^[8] ± 10 % / 5 V ^[8] ± 5 % ^[9]		
Power Consumption	Operating (Typ.) ^[10]	4.46 W	4.11 W	4.14 W
	Active idle (Typ.)	2.68 W	2.32 W	2.11 W
	Standby (Typ.)	0.21 W	0.21 W	0.31 W
Acoustics (Sound Power) ^[11]	Low Power Idle (Typ.)	24 dB	22 dB	21 dB

ENVIRONMENTAL LIMITS

Item		Specification
Ambient temperature	Operating	0 °C to 55 °C (No condensation)
	Non-Operating ^[13] ^[14]	- 40 °C to 65 °C (No condensation)
Enclosure surface temperature	Operating ^[12]	0 °C to 60 °C (No condensation)
Relative Humidity	Operating	5 % to 90 % R.H. (No condensation)
	Non-Operating	5 % to 95 % R.H. (No condensation)
Altitude	Operating	- 305 m to 3048 m
	Non-Operating	- 305 m to 12 192 m
Shock ^[13]	Operating	686 m/s ² { 70 G } (2 ms duration)
	Non-Operating	6TB: 2940 m/s ² { 300 G } / 4TB,2TB: 3430 m/s ² { 350 G } (2 ms duration)
Vibration ^[13]	Operating ^[14]	4.90 m/s ² { 0.50 G } (5 to 350 Hz) 2.45 m/s ² { 0.25 G } (350 to 500 Hz)
	Non-Operating ^[15]	29.4 m/s ² { 3.0 G } (5 to 500 Hz)

RELIABILITY

Item	Specification
MTTF / AFR ^[3]	600 000 hours / 0.4%
Non-recoverable Error Rate	1 error per 10 ¹⁴ bits read
Load / Unload	600 000 times

MECHANICAL SPECIFICATIONS

Item	DT02ABA600V	DT02ABA400V	DT02ABA200V
Width	101.6 mm ± 0.25 mm		
Height (Max)	26.1 mm		
Length (Max)	147.0 mm		
Weight (Max)	680 g	650 g	440 g

[1] "3.5-inch" means the form factor of HDDs. They do not indicate drive's physical size.

[2] Definition of capacity: One terabyte (TB) = one trillion bytes, but storage capacity actually available may vary depending on operating environment and formatting. 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.

[3] MTTF (Mean Time to Failure) of the HDDs during its life time is 600 000 hours and AFR (Annualized Failure Rate) is 0.4 %. (POH: duty of 2400 h/year, average HDA surface temperature: 40 °C or less, workloads: 55 TB/year, which is defined as the amount of data written, read and verified by commands from host system). Continual or sustained operation at case HDA surface temperature above 40°C may degrade product reliability.

[4] Read and write speed may vary depending on the host device, read and write conditions, and file size.

[5] A kibibyte (KiB) means 2¹⁰, or 1024 bytes, a mebibyte (MiB) means 2²⁰, or 1 048 576 bytes, and a gibibyte (GiB) means 2³⁰, or 1 073 741 824 bytes.

[6] 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 bit/s. 1 MiB/s = 1 048 576 B/s

[7] Read-modify-write is supported.

[8] Input voltages are specified at the HDD connector side, during HDD ready state.

[9] Make sure the value is not less than DC -0.3 V (less than -0.6 V, 0.1 ms) when turning on or off the power.

[10] Operating watt is measured using 80% random read/write and 20 % performance idle.

[11] The measuring method is based on ISO 7779.

[12] Operation of high surface temperature will be shortened of the drives useful life. The recommendation operating condition of surface temperature is less than 60°C

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

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

[15] At power-off state after installation.

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

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