

DT02 7200 rpm SERIES DESKTOP HDD

Toshiba DT02 series of 3.5-inch ^[1] 7200 rpm hard disk drive (HDD) deliver 2 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

- 2TB capacity
- 7200 rpm Performance
- MTTF ^[3] of 600 000 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

SPECIFICATION

Item		DT02ACA200
Interface		SATA-3.3
Formatted Capacity		2 TB
Performance	Interface Speed ^[4]	6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s
	Rotation Speed	7200 rpm
	Buffer Size ^[5]	256 MiB
	Maximum Data Transfer Speed ^[6] (Sustained) (Typ.)	210 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]	5.21 W
	Active idle (Typ.)	2.92 W
	Standby (Typ.)	0.32 W
Acoustics (Sound Power) ^[11]	Low Power Idle (Typ.)	25 dB

ENVIRONMENTAL LIMITS

Item	Specification	
Ambient temperature	Operating	0 °C to 55 °C (No condensation)
	Non-Operating	- 40 °C to 70 °C (No condensation)
Enclosure surface temperature ^[12]	Operating	0 °C to 60 °C (No condensation) ^[14]
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 ^[13]	Operating	784 m/s ² { 80 G } (2 ms duration)
	Non-Operating	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 / MTBF (AFR) ^[3]	600 000 hours (0.67 %)
Non-recoverable Error Rate	1 per 10 ¹⁴ bits read
Load / Unload	600 000 times
Rated Annual Workload (Total TB Transferred per Year, R/W)	55 TB / year

[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 / MTBF (Mean Time to Failure / Mean Time Between Failure) of the HDDs during its life time is 600 000 hours and AFR is 0.67 %. (POH: duty of 4000 h/year, average HDA surface temperature: 40 °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 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.

MODEL NUMBER

Model Number	Interface	Capacity	Sector Format	Optional Security
DT02ACA200	SATA-3.3	2 TB	512e	