

5,400 RPM 2.5-Inch SATA Hard Disk Drives

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*High Capacity, Energy Efficient
Solutions for a Multitude of
2.5-inch Applications*



MK1659GSXP
MK2559GSXP
MK3259GSXP
MK5059GSXP
MK6459GSXP

Toshiba's MKxx59GSXP series of 5,400 RPM hard disk drives is a long data sector counterpart to the MKxx76GSX line-up.

Both product series build upon the maturity of the Toshiba 320GB¹ per-platter architecture to offer the same big storage capacities with a technology boost to enhance quality and span 160 to 640GB. The MKxx59GSXP series uses Advanced Format (AF) technology where data is stored on the media in 4,096 bytes per sector increments. Compatibility with legacy, 512 bytes per sector applications is maintained through AF emulation techniques, called 512e².

The large storage capacities, ruggedness and cool operation of the MKxx59GSXP models are well-suited for mobile and compact, stationary applications. Their massive storage capacity and energy efficiency also make the MKxx59GSXP line an attractive, space-saving alternative to desktop hard drives. Power consumption can be reduced by more than 80% over like-capacity 3.5-inch hard disk drives.

While reducing or eliminating the use of certain toxic, hazardous or controversial chemicals and materials³ in the drive, the MKxx59GSXP series is ideal for Windows[®] 7⁴ and Mac^{®5} OS-based notebook, all-in-one and EnergyStar[®] desktop PCs, external storage devices and other computing.

- Up to 640GB¹ of Storage Capacity
- 5,400 RPM Rotational Speed
- Eco-conscious and Durable Design
- 4,096/512e² AF Implementation
- MTTF of 600,000 Hours

Hard Drive

5,400 RPM

2.5-Inch SATA Hard Disk Drives

MK1259GSXP MK1659GSXP MK2559GSXP MK3259GSXP MK5059GSXP MK6459GSXP

Series Overview

Drive Capacity	160GB ¹	250GB ¹	320GB ¹	500GB ¹	640GB ¹
Drive Interface	Serial ATA, Revision 2.6 / ATA-8				
Number of Platters (disks)	1	1	1	2	2
Number of Data Heads	2	2	2	4	4
Sector Size (bytes)	4096/512e ²				
Transfer Rate to Host	3 Gb/sec				
RoHS Compliant	Yes				

Performance

Track-to-track Seek	2 ms
Average Seek Time	12 ms
Rotational Speed	5,400 RPM
Average Latency	5.55 ms
Buffer Size	8 MB

Power Requirements

Voltage	5V (+/- 5%)
Spin up (start) Power	4.5 watts
Seek Power	1.85 watts
Read/Write Power	1.5 watts
Low Power Idle	0.55 watts
Standby Power	0.18 watts
Sleep Power	0.15 watts

Physical Size

Dimensions (W) x (D) x (H)	69.85 mm (2.75") x 100.0 mm (3.94") x 9.5 mm (0.37")				
Weight	98 g (3.46 oz)	98 g (3.46 oz)	98 g (3.46 oz)	102 g (3.60 oz)	102 g (3.60 oz)

Environmental

Temp - Operating	5° to 55°C (41° - 131°F)
Temp - Non-Operating	-40° to 60°C (-40° - 140°F)
Vibration - Operating	9.8 m/s ² (1.0G) 5 to 500 Hz
Vibration - Non-Operating	49 m/s ² (5.0G) 15 to 500 Hz
Shock - Operating	3,920 m/s ² (400G) 2ms
Shock - Non-Operating	8,820 m/s ² (900G) 1ms

Acoustics

Acoustics (idle)	19 dB	19 dB	19 dB	25 dB	25 dB
Acoustics (seek)	20 dB	20 dB	20 dB	25 dB	25 dB

Limited Warranty

Limited Warranty

3 years (from date of purchase)

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¹ One Terabyte (1TB) = 1,000 Gigabytes (GB). One Gigabyte (1GB) means 10⁹ = 1,000,000,000 bytes using powers of 10. 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 will also be less if the computer includes one or more pre-installed operating systems, pre-installed software applications, or media content. Actual formatted capacity may vary.

² Compatibility with legacy, 512 bytes per sector applications is maintained through AF emulation techniques, called 512e.

³ Concentrations of chlorine and bromine are below 900 ppm for each substance, surpassing the IEC61249-2-21:2003 criteria set for printed circuit boards by the International Electrotechnical Commission (IEC), in applying the criteria to all components in the HDD. IEC is the leading

global organization that defines internationally-recognized standards for electrical, electronic and associated technologies.

⁴ Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

⁵ Mac and Mac OS are trademarks of Apple Inc., registered in the U.S. and other countries.

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