TOSHIBA
Leading Innovation

HDD

# AL13SXBxx0N SERIES
## ENTERPRISE PERFORMANCE HDD

Product image may represent a design model.

### KEY FEATURES

- Industry Standard 2.5-inch 15 mm Height Form Factor
- 600, 450 and 300 GB Capacity models
- Dual-Port 6.0 Gbit/s SAS Interface
- Rotational Speed of 15,000 rpm
- MTTF of 2,000,000 hours
- 24/7 Mission Critical Workload Performance and Data Reliability
- RoHS Compatible, Halogen-Free and Antimony-Free

### APPLICATIONS

- Tier 1 Mission-Critical Servers and Storage Systems
- Servers and Storage Sub-systems Supporting Write-Intensive and Transaction-Based Applications
- Rack-Optimized Data Centers

### MAIN SPECIFICATIONS

| Model Number | | AL13SXB600N | AL13SXB450N | AL13SXB300N |
|---|---|---|---|---|
| Interface | | SAS-2.0 ( 6.0 Gbit/s , 3.0 Gbit/s , 1.5 Gbit/s ) | | |
| Formatted Capacity | | 600 GB | 450 GB | 300 GB |
| Performance | Interface Speed | 6.0 Gbit/s Max. | | |
| | Rotation Speed | 15,000 rpm | | |
| | Average Latency Time | 2.0 ms | | |
| | Buffer Size | 64 MiB | | |
| Logical Data Block Length | HOST | 512 B , 520 B , 528 B | | |
| | DISK | 512 B , 520 B , 528 B | | |
| Supply Voltage | Allowable Voltage | 5 V ± 5%<br>12 V ± 5 % | | |
| Power Consumption | Read / Write | 9.0 W Max. | | |
| | Low Power Idle | 5.0 W Typ. | | |

### RELIABILITY

| Model Number | AL13SXBxx0N |
|---|---|
| MTTF | 2,000,000 hours |
| Non-recoverable Error Rate | 10 errors per $10^{17}$ bits read |

## MECHANICAL SPECIFICATIONS

| Model Number | AL13SXBxx0N |
|---|---|
| Height | 15.0 mm ± 0,5 mm Max. |
| Width | 69.85 mm ±0.25 mm Max. |
| Length | 100.45 mm Max. |
| Weight | 230 g Max. |

## ENVIRONMENTAL LIMITS

| Item | | Specification |
|---|---|---|
| Temperature | Operating | 5 °C to 55 °C |
| | Non-Operating | - 40 °C to 70 °C |
| Humidity | Operating | 5 % to 95 % R.H. (No condensation) |
| | Non-Operating | 5 % to 95 % R.H. (No condensation) |
| Shock | Operating | 980 $m/s^2$ { 100 G } ( 1 ms duration ) |
| | Non-Operating | 3,920 $m/s^2$ { 400 G } ( 2 ms duration ) |
| Vibration | Operating | 9.8 $m/s^2$ { 1.0 G } ( 20 to 300 Hz ) |
| | Non-Operating | 49 $m/s^2$ { 5.0 G } ( 20 to 300 Hz ) |
| Altitude | Operating | -305 m to +3,048 m { -1,000 to +10,000 feet } |
| | Non-Operating | -305 m to +12,192 m { -1,000 to +40,000 feet } |

## ENVIRONMENTAL FEATURE

| Model Number | AL13SXBxx0N |
|---|---|
| RoHS | Compatible |
| Halogen free | Yes |
| Antimony free | Yes |

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.

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 1,073,471,824 bytes.

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.

Toshiba Semiconductor & Storage Products Company defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive (Directive 2011/65/EC of the European Parliament and of the Council of 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment). "Homogeneous Material" means a material of uniform composition that cannot be mechanically disjointed (meaning separated, in principle, by mechanical actions such as unscrewing, cutting, crushing, grinding and/or abrasive processes) into different materials. Examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

Toshiba Semiconductor & Storage Products Company defines halogen-free and antimony-free SSD and HDD products as those meeting all of the following requirements: (a) containing bromine (Br) and chlorine (Cl) at no more than 900 parts per million (ppm) by weight for each element, and containing bromine and chlorine in an aggregate amount not exceeding 1500 ppm by weight; and (b) containing no more than 1000 ppm antimony (Sb) by weight. For the avoidance of doubt, Halogen-Free/Antimony-Free SSD or HDD products may not be entirely free of bromine, chlorine, or antimony, and may contain other element of the halogen family.

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

"2.5-inch" and "3.5-inch" mean the form factor of HDDs or SSDs. They do not indicate drive's physical size.

Subject to Change: While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, and availability are all subject to change without notice.

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.