

TGS202 mSATA SSD

BIWIN TGS202 SSD is built for industrial applications, integrating industrial-grade controllers and TLC NAND flash technology. It is widely used in industrial control, rail transportation, data communication, and other fields, and is compatible with critical equipment such as automation devices, metro gate systems, and communication base stations.

The TGS202 SSD features a mSATA form factor and strictly adheres to the SATA III standard, delivering high-speed performance with sequential read and write speeds up to 560 MB/s and 510 MB/s. Available in capacities from 128 GB to 2 TB, it meets diverse storage needs, with an operating temperature range of -40°C to +85°C, ensuring stable performance in extreme environments.

The TGS202 SSD has undergone rigorous testing, including "Double 85 test" (85°C high temperature and 85% high humidity), rapid temperature cycling (10°C/min), high/low-temperature stress testing, and anti-sulfuration G3 standards. This SSD is equipped with power-loss protection, safeguarding data against damage from unexpected power outages. Customization options, including conformal coating, sidefill/underfill and anti-sulfuration, provide comprehensive options to enhance reliability and durability in the harshest environments.



Key Features

Stable Wide-Temperature Operation from -40°C to +85°C

The BIWIN TGS202 SSD ensures reliable operation in extreme conditions, with advanced selection processes that guarantee the flash memory, controller, and components support a wide temperature range of -40°C to +85°C. Coupled with our proprietary firmware enhancement strategy, it ensures stable performance in challenging climates and harsh industrial environments.

Dual Power-Loss Protection for Exceptional Stability

Supporting both firmware and hardware-based power-loss protection, the BIWIN TGS202 SSD ensures power stability during unexpected power failures, allowing additional time for volatile data storage and effectively addressing various power-loss scenarios.

Advanced Technologies to Extend Product Lifespan

The BIWIN TGS202 SSD incorporates technologies such as dynamic/static wear leveling, bad block management, TRIM, and garbage collection, ensuring optimal utilization of NAND flash and significantly enhancing the product's durability.

Rigorous Testing for Exceptional Quality

The BIWIN TGS202 SSD undergoes extensive testing, including "Double 85 test" (85°C high temperature and 85% high humidity), rapid temperature cycling (10°C/min), high/low-temperature stress testing, and anti-sulfuration G3 standard, with an MTBF (Mean Time Between Failures) exceeding 3 million hours. Overall, this SSD is distinguished by its outstanding reliability.

Flexible Customization to Meet Specialized Application Needs

The BIWIN TGS202 SSD offers various customization options, including conformal coating, sidefill/underfill, anti-sulfuration, and metal/graphene heatsinks, for comprehensive solutions to meet specific customer requirements.

Technologies

Power-Loss Protection

S.M.A.R.T.

Firmware Update

End-to-End Data Protection

Data Erasure

Garbage Collection

Dynamic/Static Wear Leveling

TRIM Command

Bad Block Management

Intelligent Thermal Throttling

Applications



Network Communications



Industrial Automation



Security Surveillance



Intelligent Transportation



Smart Energy

Specifications

Model Name	TGS202
Interface	SATA III
Form Factor	mSATA
Flash Type	3D TLC
Firmware	TLC Direct Write
DRAM Cache	DRAM-less
Capacity	128 GB / 256 GB / 512 GB / 1 TB / 2 TB
Sequential Read (Up to)	560 MB/s
Sequential Write (Up to)	510 MB/s
Random Read 4K (Up to)	90K IOPS
Random Write 4K (Up to)	70K IOPS
Read Power Consumption (Max.)	0.85 W
Write Power Consumption (Max.)	1.4 W
Idle Power Consumption (Max.)	0.3 W
Dimensions	50.80 x 29.85 x 4.65 mm
Operating Temperature	-40°C to + 85°C
Storage Temperature	-55°C to + 95°C
Endurance	3000 P/E cycles
MTBF	>3,000,000 hours
Certifications	CE, FCC, RoHS
TBW	2400 TBW

Order Information

Capacity	Part Number	Power Loss Protection
128 GB	TG59B12820Y0TP0	Firmware + Hardware-Based
256 GB	TG59B25620Y0TP0	Firmware + Hardware-Based
512 GB	TG59B51220Y0TP0	Firmware + Hardware-Based
1 TB	TG59B1T220Y0TP0	Firmware + Hardware-Based
2 TB	TG59B2T220Y0TP0	Firmware + Hardware-Based

1. Tested by BIWIN labs. Actual performance may vary due to systems, devices, or environment.
2. Maintenance and future updates are required throughout the product lifecycle. Specifications are subject to change without notice.
3. The pictures are for illustration only. Actual products may vary due to product enhancements or changes.
4. Not all products are sold in all regions of the world.
5. As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on the operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabyte per second (GB/s) = one billion bytes per second.
6. MTBF = Mean Time Between Failures based on internal testing using the Telcordia stress testing standard.
7. Please visit www.biwin technology.com for warranty details in your region.
8. For more information, please contact sales@biwin tech.com.

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