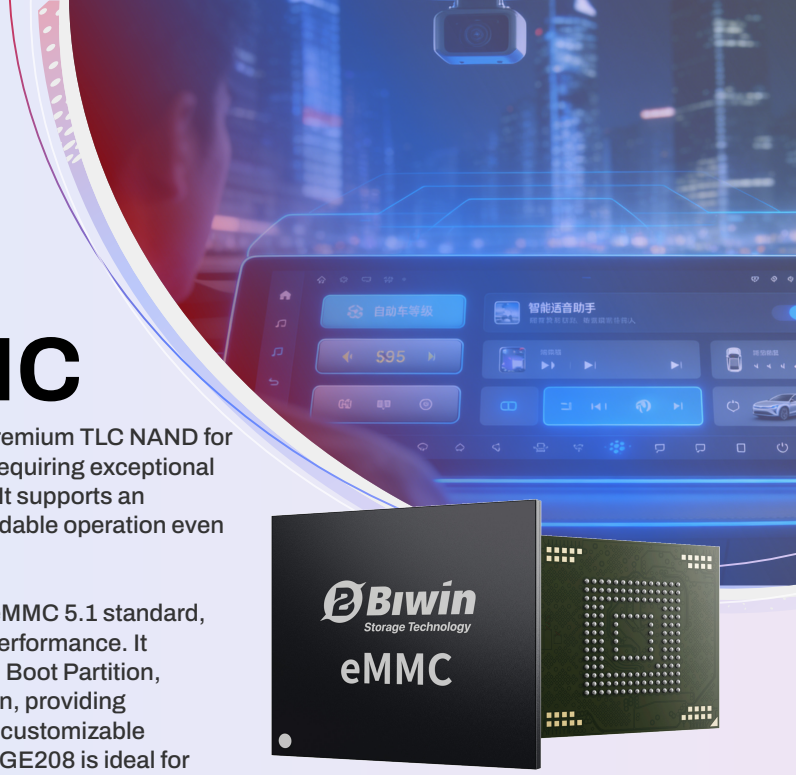
Biwin
Storage Technology

TGE208 Automotive eMMC



BIWIN TGE208 eMMC 5.1 integrates an industrial controller with premium TLC NAND for applications in mission-critical sectors (such as power or utilities) requiring exceptional reliability, superior read/write performance, and long-term stability. It supports an extended industrial temperature range of -40°C to +85°C for dependable operation even under extreme conditions.

The TGE208 uses the FBGA 153 ball package and adheres to the eMMC 5.1 standard, supporting HS400 high-speed mode to deliver optimal read/write performance. It includes essential features such as FFU (Field Firmware Upgrade), Boot Partition, RPMB (Replay Protected Memory Block), and idle data acceleration, providing comprehensive functionality for enterprise-level applications. With customizable options, extended product lifecycle and reliable supply chain, the TGE208 is ideal for even the most robust industrial deployments.

Leveraging TLC Direct Write technology, the TGE208 increases storage density, reduces overall costs, and ensures consistent high-speed and stable data transmission. Its wide compatibility with various devices makes it a versatile solution meeting the extensive data storage needs across diverse industrial sectors.

Key Features

High Efficiency and Rapid Response

The BIWIN TGE208 uses TLC Direct Write technology to increase storage density and reduce overall system cost while maintaining consistent high speeds and stable data transfer. Its broad compatibility with a wide range of devices supports seamless integration into diverse industrial platforms, making it suitable for high-throughput and data-intensive applications.

Wide-Temperature Range for Reliable Performance

The BIWIN TGE208 is engineered to withstand the demanding conditions of industrial environments, operating reliably within a wide temperature range of -40°C to 85°C. With consistent and stable performance even in the harshest of conditions, including extreme cold and heat, TGE208 is a reliable solution for continuous operation in critical applications.

Industrial-Grade Quality for Long-Term Stability

The TGE208 is equipped with an industrial-grade controller and premium TLC/MLC NAND flash, specifically designed to perform under demanding conditions. In environments with fluctuating power or extreme conditions, the TGE208 maintains data reliability and consistent read/write performance throughout the device lifecycle.

Customizable Options to Meet Specific Needs

Compliant with AEC-Q100 automotive standards, the BIWIN TAE318 eMMC 5.1 undergoes over 20 rigorous tests, including vibration, shock, and temperature/humidity cycles. With a wide operating temperature range of -40°C to +105°C, it ensures reliable performance in extreme automotive environments. The TAE318 is the ideal solution for automotive applications requiring high durability and stability, even in harsh conditions.

Technologies

- Bad Block Management
- Power Loss Protection
- Global Wear Leveling
- RPMB Partition (Replay Protected Memory Block)
- FFU (Fan Filter Unit)
- ECC (Error Correction Code)

Applications

- Industrial Automation
- Industrial Robot
- Security Surveillance
- Intelligent Transportation
- Power Equipment
- IoT
- Financial and Retail Device
- Smart Healthcare

Specifications

Model Name	TGE208
eMMC Standard	eMMC 5.1
Flash Type	3D TLC
Capacity	32 GB / 64 GB / 128 GB
Sequential Read (Up to)	320 MB/s
Sequential Write (Up to)	230 MB/s
Operation Current (Max.)	120 mA
Standby Current (Max.)	100 μA
Dimensions	11.50 x 13.00 x 1.10 mm
Packaging	FBGA 153 Ball
Operating Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Endurance	3000 P/E cycles
MTBF	>3,000,000 hours
Certifications	RoHS, REACH
Warranty	3-Year Limited

Order Information

Capacity	Part Number	Power Loss Protection
32 GB	BWEFMI032GN2RJ	Firmware-Based
64 GB	BWEFMI064GN223	Firmware-Based
128 GB	BWEFMI128GN223	Firmware-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.biwintechnology.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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