

81G3000 Family

GMR Preamplifiers

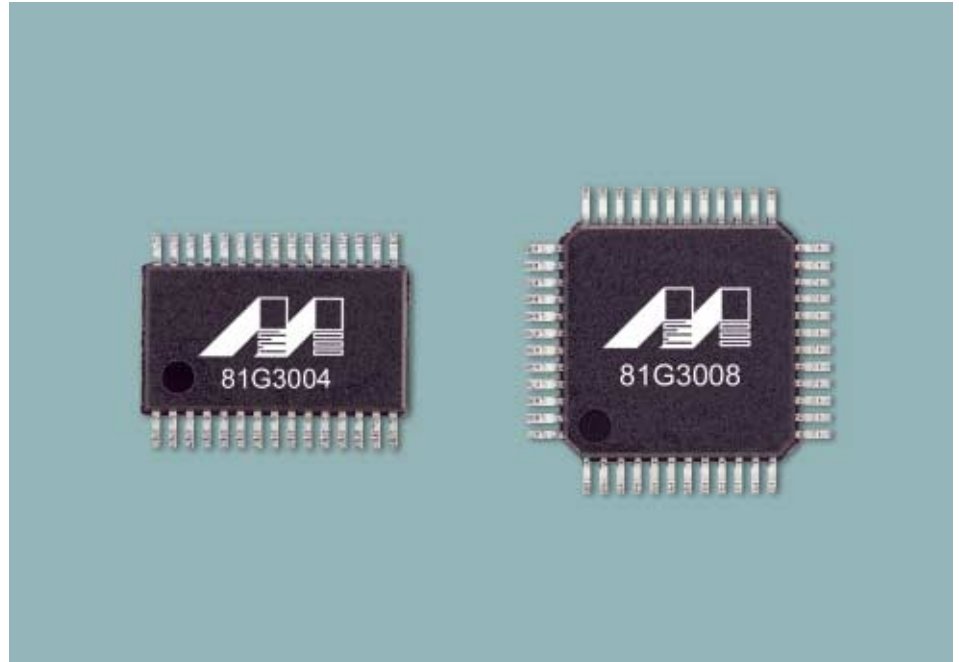
Marvell Delivers Very Low-Noise, High-Bandwidth Preamplifiers for Performance Desktop and Mobile Disk Drives

GMR Preamplifiers

Marvell's first family of disk drive preamplifiers, the 81G3000, extends our industry leadership in high-performance, cost-effective solutions for data storage product applications. The 81G3000 preamplifiers support data transfer rates up to 320 Mb/s (Megabits per second), allowing drive manufacturers to keep pace with the ever-increasing performance requirements of today's desktop and mobile storage applications. This product family is available in 2, 4 and 8-channel configurations.

The Marvell 81G3000 devices are preamplifier integrated circuits designed for use with both Magneto-Resistive (MR) and Giant Magneto-Resistive (GMR) recording heads, giving customers the most flexibility in their choice of head technology. The 81G3000 is the first commercially available product family to be manufactured in reliable, high-volume, cost-effective 0.5 micron CMOS process, allowing Marvell to continue to meet the quality, supply and cost requirements of our customers.

The Marvell 81G3000 preamplifiers feature a voltage sense/current bias architecture providing accurate signal response independent of head resistance. The 81G3000 family incorporates a fully-programmable MR bias current and MR read gain and write current, as well as a programmable damping resistor. This wide range of programmable features allows for



optimal performance in all varieties of customer applications. Proprietary Electro-Static Discharge (ESD) protection circuits can withstand static discharge events of up to 2,000 volts. Sensitive MR and GMR read elements are also protected by proprietary low voltage ESD protection circuits.

The Marvell Advantage

The Marvell 81G3000 devices are an all-CMOS implementation, utilizing unique analog circuit design techniques to maintain performance across process and environmental variations. This product family offers various pin-outs and packaging options to meet our customers' needs.

As with all Marvell preamplifier products, the 81G3000 is accompanied by a complete set of hardware and software tools to assist drive engineers with optimizing their systems. Our worldwide field applications engineers work closely with manufacturing teams to meet and exceed time-to-market requirements. Marvell utilizes recognized world-leading semiconductor foundry and packaging services to reliably deliver high-volume solutions.

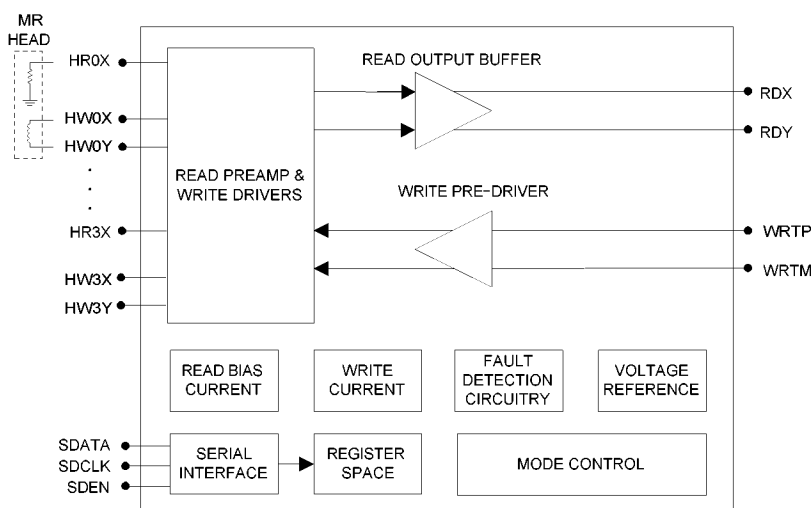


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Features

General

- 320 Mb/s data transfer rate
- Fast write-to-read recovery time (200ns typical)
- Read/write fault detection
- Only 1 external component (resistor) required
- ESD protection for GMR elements
- Multi-channel servo write function
- Programmable serial interface
- 2, 4 and 8-channel configurations

Read

- High-bandwidth read amplifier (220 MHz)
- Wide range of programmable MR bias currents (2.1-15.75mA) with 0.35mA step size
- Programmable MR read gain
- Thermal asperity detection and correction

Write

- Fast rise/fall time (1.2ns)
- Programmable write current

Benefits

- Supports desktop and mobile applications
- Fast system response time
- Improved data reliability
- Lower overall system cost
- Protects costly, highly sensitive components
- Enhances factory productivity
- User-friendly setup and control
- Cost-effective implementations

- High data throughput
- Suitable for MR and GMR applications
- Ensures data integrity
- High performance for today's advanced read/write heads



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