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Automotive Gate Drivers Target 48-V Battery Systems

Allegro MicroSystems has introduced what's described as the industry's largest portfolio of 80-V motor drivers for advanced 48-V automotive systems. Allegro's 48-V products address the critical need for flexible and reliable solutions in electric vehicles. Drawing on decades of experience, Allegro's suite of fully integrated gate drivers offer optimised architecture and performance directly impacting vehicle weight, battery/fuel efficiency, and driver safety.

With robust design and performance, Allegro's new gate drivers are prepared to suit any load configuration from half bridge with independent high-side and low-side outputs to three-phase brushless dc (BLDC) control. Developed on a high-voltage process node for 48-V systems, these devices offer world-class ASIL diagnostics and diagnostic verification enabled with a fully compliant ISO 26262 process.

The devices include the AMT49100 & AMT49101 80-V safety three-phase gate drivers for electric power steering (EPS) and other safety-critical systems, the AMT49502 80-V safety half-bridge gate driver with actuators and solid-state relays, the A89503 80-V safety half-bridge gate driver with independent high-side and low-side output loads for floating loads such as seat heaters and catalytic heaters and the A89500 100-V high-power half-bridge gate driver in ultra-compact DFN package for distributed systems, 48-V power inverters, golf carts, and e-bikes. Offered in ultra-small packages, these devices are designed to meet the rigorous demands of the automotive market by increasing functionality while decreasing PCB footprint.

Allegro's 48-V gate drivers are reliable, robust, and offer optimal flexibility. Augmented based on application, these devices offer multiple topologies and can support various loads (up to 10 kW) from catalytic heaters and actuators to EPS and braking applications.

Acknowledging the importance of system and driver safety, Allegro's new 48-V motor portfolio was designed for the cars of the future, today. These 80-V automotive gate drivers were developed on an ISO 26262 compliant design process and provide the best diagnostic features in the industry. Ideal for safety-critical systems, Allegro's ASIL Gate Drivers have over 20 diagnostic features included, allowing the customer to diagnose, verify, and act against system faults.

"Engineers and system designers can now rest assured that they are building-in a wide variety of market-leading diagnostic capabilities with the use of Allegro's 48-V motor drivers," says Vijay Mangtani, Vice President of Power ICs.

For datasheets and more details on Allegro's 48-V solutions, including the new motor driver portfolio, visit the Hybrid and Electric Vehicle Systems page or see the AMT49100 & AMT49101, AMT49502, A89503 and A89500 product pages. Contact your local sales office for more information and to request samples.

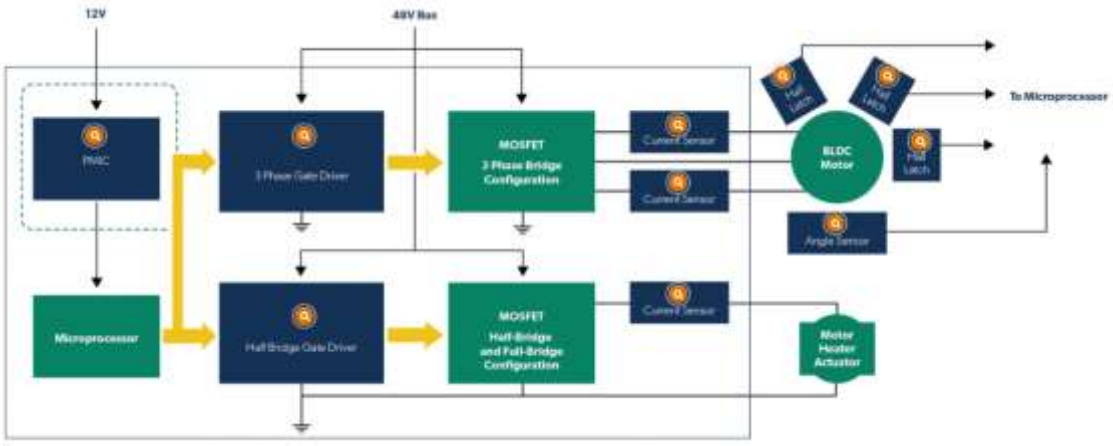

Figure. A new suite of motor drivers offers features and advanced safety diagnostics in ultra-small packages, which are well suited for electric vehicles. Featured products include the A89500 100-V fast-switching half-bridge MOSFET driver, the A98503 5.5-V to 80-V ASIL half-bridge MOSFET gate drive for series loads, the AMT49502 5.5-V to 80-V ASIL half-bridge MOSFET gate drive and the AMT49100 and AMT49101 ASIL BLDC MOSFET gate drive for 48-V battery systems.