



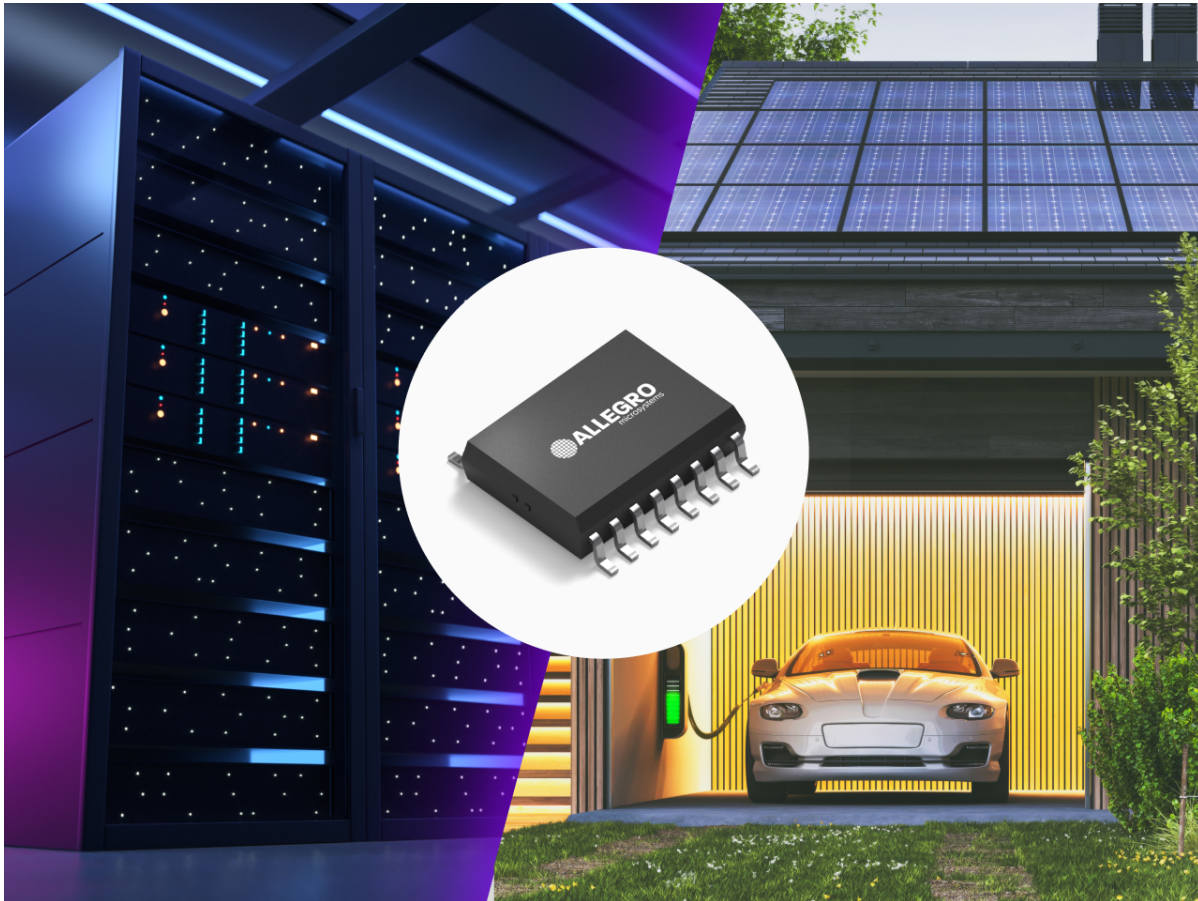
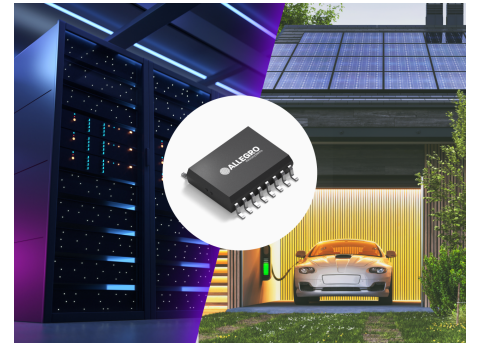
Allegro MicroSystems Unveils Industry's First Production-Ready 10 MHz TMR Current Sensor, Enabling Optimal Protection and Control of Wide Bandgap Power Electronics

10/21/2025

New XtremeSense™ TMR current sensor provides the high-fidelity signal needed to master the power conversion signal chain in EVs, clean energy, and data center designs adopting GaN and SiC FETs

MANCHESTER, N.H., Oct. 21, 2025 (GLOBE NEWSWIRE) -- [Allegro MicroSystems, Inc.](#) ("Allegro") (Nasdaq: ALGM), a global leader in power and sensing solutions for motion control and energy-efficient systems, today introduced the industry's first commercially available magnetic current sensor to achieve 10 MHz bandwidth featuring Allegro's advanced XtremeSense™ TMR (tunneling magnetoresistance) technology. The new [ACS37100](#) TMR current sensor helps power system designers master the control signal chain and unlock the full potential of fast-switching GaN and SiC FETs. Tailored to the needs of electric vehicles (xEVs), clean energy power conversion systems, and AI data center power supplies, the ACS37100 achieves an industry-leading 50 ns response time, providing the high-fidelity data needed for optimal efficiency and protection in demanding high-frequency applications.

ACS37100 TMR Current Sensor



Migration to GaN and SiC promises greater power density and efficiency, but their faster switching speeds create significant control challenges. At sub-megahertz frequencies, conventional magnetic current sensors lack the speed and precision to provide the high-fidelity, real-time data required for stable control and protection loops. This can leave advanced systems vulnerable to damage and may prevent them from operating at their full potential.

The ACS37100 is engineered to solve this control challenge. Its industry-leading bandwidth and response time provide the high-fidelity current sense feedback essential for demanding control loops in high-speed switching applications. This magnetic current sensor enables designers to confidently and reliably control faster systems, maximize efficiency, and increase power density. Leveraging advanced TMR technology, the device delivers exceptionally low noise of 26 mA root mean square (RMS) across the full 10 MHz bandwidth—enabling precise, high-speed current measurements for more accurate and responsive system performance.

"The ACS37100 marks a critical inflection point for magnetic sensors. Our TMR technology is enabling current sensors that are ten times faster and four times lower noise versus typical Hall-based products," said Matt Hein, Business Line Director of Current Sensors at Allegro. "This leap in performance solves important challenges in high-voltage power conversion, especially related to wide bandgap solutions."

The ACS37100 is engineered to minimize energy loss while maximizing operational efficiency and reliability, making it the ideal choice for a variety of automotive and industrial uses like xEV charging, clean energy power conversion, and AI data center power supplies.

ACS37100 Features and Benefits

- **Highest bandwidth:** DC to 10 MHz
- **Fast response time:** 50 ns
- **Low noise:** 26 mA_{RMS} at full 10 MHz bandwidth
- **Integrated Reinforced Isolation:** 5 kV (60 seconds per UL 62368-1)
- **Low loss:** 1.2 mΩ internal conductor resistance
- **Automotive Grade 0:** -40°C to +150°C operating temperature range

The ACS37100 is available in an industry-standard SOICW-16 package that supports a working reinforced isolation up to 565 V_{RMS} (basic 1,097 V_{RMS}) with 8 mm creepage and clearance. It features a voltage reference output and an adjustable overcurrent fault.

Explore the [ACS37100](https://www.allegromicro.com/acs37100) for datasheets, samples, and evaluation boards to accelerate your development: www.allegromicro.com/acs37100.

About Allegro MicroSystems

Allegro MicroSystems, Inc. is leveraging more than three decades of expertise in magnetic sensing and power ICs to propel automotive, clean energy and industrial automation forward with solutions that enhance efficiency, performance and sustainability. Allegro's commitment to quality drives transformation across industries, reinforcing our status as a pioneer in "automotive-grade" technology and a partner in our customers' success. For additional information, visit <https://www.allegromicro.com/en/>.

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