onsemi's EliteSiC M4 Pushes Power Density Higher as Energy Demands Grow

November 10, 2026

Fourth-generation silicon carbide platform based on a trench architecture reduces losses while enabling more compact power systems across AI, EV and energy applications

Summary
onsemi introduced EliteSiC™ M4, its fourth-generation silicon carbide platform built on a trench architecture, delivering up to 30% higher power density and 35% lower losses compared with the previous generation. By advancing conduction and switching performance, EliteSiC M4 enables more efficient, power-dense systems for AI data centers, electric vehicles and energy infrastructure.

News Highlights:

- EliteSiC™ M4 delivers higher power density and lower losses enabling customers to increase performance and efficiency while optimizing system size and managing cooling requirements
- Extends onsemi's proven SiC leadership, building on more than 16 billion miles of real-world operation
- EliteSiC™ M4 750 V automotive traction bare die available now, with additional voltage options up to 1200 V expected in 2027

SCOTTSDALE, Ariz., Nov. 10, 2026 (GLOBE NEWSWIRE) -- onsemi (Nasdaq: ON) today introduced EliteSiC™ M4, its fourth-generation silicon carbide (SiC) platform built on a trench architecture and designed to set a new performance benchmark for next-generation power systems. With industry-leading conduction and switching performance, EliteSiC M4 gives customers greater design freedom to increase power density and efficiency up to 30% and lower losses by 35%, enabling more efficient, power-dense systems across EVs, AI data center and industrial applications.

"Power requirements are rising faster than the physical infrastructure around them. The next generation of power systems will require the ability to deliver more power, more efficiently and in less space," said Achyut Shah, Group President of the Power Solutions Group at onsemi. "With more than 16 billion miles of proven silicon carbide operation in vehicles around the world, EliteSiC M4 is combining that foundation of reliability with the performance customers need to rethink the balance among power, efficiency, size and cost."

Delivering More Power Within Real-World Constraints

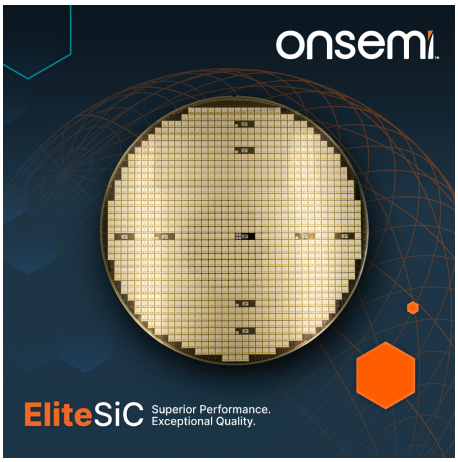
The growth of AI, electrification and energy infrastructure is creating a common challenge for power-system designers – delivering significantly more power without proportional increases in size, energy losses, and cooling requirements. EliteSiC M4 addresses that challenge by expanding the power and efficiency available within existing system constraints, giving customers greater flexibility to scale AI infrastructure, electric vehicles and industrial systems.

Across its key markets, EliteSiC M4 translates these technology advances into distinct system-level benefits:

- **AI Data Centers: Scaling compute without scaling power infrastructure at the same rate.** Higher-density power conversion helps data centers get more compute from every megawatt, maximizing capacity while reducing the supporting infrastructure required per unit of compute
- **Electric Vehicles: Getting more performance from the electric drivetrain.** More compact, efficient traction inverters can help automakers improve vehicle range
- **Energy Infrastructure: Making more of every unit of energy.** More efficient, higher-density power conversion helps solar, energy storage and other high-voltage systems reduce conversion losses

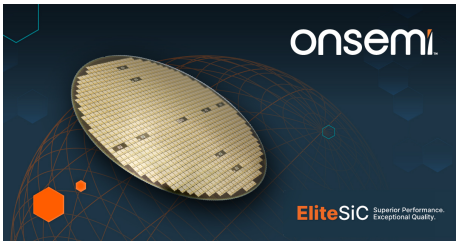
"As vehicle power levels increase, traction-inverter design becomes a tighter balancing act between efficiency, thermal performance, power density and reliability," said Harald Hartel, Vice President, BU eMotor Controls at Schaeffler AG. "Higher efficiency and power density can give us greater

onsemi's EliteSiC M4 Pushes Power Density Higher as Energy Demands Grow



onsemi introduced EliteSiC™ M4, its fourth-generation silicon carbide platform built on a trench architecture, delivering up to 30% higher power density and 35% lower losses compared with the previous generation. By advancing conduction and switching performance, EliteSiC M4 enables more efficient, power-dense systems for AI data centers, electric vehicles and energy infrastructure.

onsemi's EliteSiC M4 Pushes Power Density Higher as Energy Demands Grow



onsemi introduced EliteSiC™ M4, its fourth-generation silicon carbide platform built on a trench architecture, delivering up to 30% higher power density and 35% lower losses compared with the previous generation. By advancing conduction and switching performance, EliteSiC M4 enables more efficient, power-dense systems for AI data centers, electric vehicles and energy infrastructure.

flexibility to optimize the traction inverter for range, thermal performance and packaging, which are increasingly important as electrified powertrains become more demanding."

A New Architecture for Higher Power Density and Efficiency

EliteSiC M4 improves conduction and switching performance without compromising reliability. Key improvements over the previous generation include:

- **Improvement in specific on-resistance (RSP):** Reduces specific RSP between 20% - 50%, while enabling faster switching
- **Lower switching losses:** Improves switching figures of merit by 67% in hard-switching and 50% in soft-switching, supporting compact power-supply designs
- **Broad packaging flexibility:** Designed to support existing packages, including top-side-cooled surface-mount packages and high-power modules
- **Ruggedness for demanding applications:** The platform is also designed for demanding operating environments, with qualification supporting temperatures of 185°C and above, enabling use in high-voltage automotive and space applications

Availability

The EliteSiC M4 750 V bare die for automotive traction inverters is available now. Additional product offerings for a range of voltages up to 1200 V are expected to be available beginning in 2027.

More Information:

- Learn More about EliteSiC Solutions
- Media Assets: onsemi M4 Platform
- White Paper: Advancing Power Density with EliteSiC M4

About onsemi
onsemi (Nasdaq: ON) delivers intelligent power and sensing technologies that enable electrification, energy efficiency, safety, and automation across automotive, industrial, and AI data center end-markets. With a highly differentiated and innovative product portfolio, **onsemi** helps customers solve complex challenges to achieve higher efficiency, improved performance, and lower system cost, while supporting a safer, cleaner, and more energy-efficient world. The company is part of the S&P 500® index. Learn more at www.onsemi.com.

onsemi *and the* ***onsemi*** *logo are trademarks of Semiconductor Components Industries, LLC. All other brand and product names appearing in this document are registered trademarks or trademarks of their respective holders. Although the Company references its website in this news release, information on the website is not to be incorporated herein.*

Contact:

onsemi
Michael Mullaney
Senior Manager, Public Relations
838-289-7314
Michael.Mullaney@onsemi.com

Photos accompanying this announcement are available at:

https://www.globenewswire.com/NewsRoom/AttachmentNg/27cc4017-8b1f-4e29-8134-6760c4c1575d

https://www.globenewswire.com/NewsRoom/AttachmentNg/c8f6539c-7e9f-44a1-b719-5451336f6de0