onsemi Introduces GaNEXUS Gallium Nitride Power Portfolio

June 09, 2026

Now sampling gallium nitride devices to deliver higher power density, improved efficiency in AI data centers, robotics, and energy infrastructure applications

SCOTTSDALE, Ariz., June 09, 2026 (GLOBE NEWSWIRE) -- **Summary**

onsemi today announced the launch of GaNEXUS™, a new gallium nitride (GaN) power portfolio engineered to deliver higher efficiency, greater power density, and improved thermal performance across AI data centers, industrial automation, robotics, and energy infrastructure applications. The initial portfolio includes GaNEXUS FETs sampling across voltage ranges from 40V to 650V, including 650V GaNEXUS Smart, GaN FETs with integrated protection features, to simplify system integration and improve reliability.

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News Highlights

- onsemi's GaNEXUS power portfolio delivers faster switching speeds, lower switching losses, higher power density, and improved thermal performance for next-generation power architectures
- GaNEXUS FETs from 40V to 650V and 650V GaNEXUS Smart, GaN FETs with integrated protection features, are sampling now
- When combined with onsemi's Treo Platform for integrated sensing, control, protection, and power management, GaNEXUS enables smarter, more reliable, and more robust system-level power solutions
- Together, onsemi's silicon, EliteSiC, and GaNEXUS technologies give customers the flexibility to optimize efficiency, thermal performance, system size, and total cost across the full power-delivery chain

What's New: onsemi announced today the launch of its GaNEXUS™ gallium nitride (GaN) power portfolio, with the initial sampling of GaNEXUS FETs across voltage ranges from 40V to 650V as well as its GaNEXUS Smart 650V GaN FETs. The portfolio is ideally suited for power-hungry applications including AI data center power delivery, 48V systems, robotics and industrial automation, and energy infrastructure.

The addition of GaNEXUS to onsemi's intelligent power portfolio expands the company's ability to deliver optimized power solutions across a range of applications, voltage domains, and performance requirements. As part of onsemi's broader power portfolio alongside silicon and EliteSiC technologies, GaNEXUS gives customers greater flexibility to optimize performance, efficiency, thermal behavior, and total system cost across the full power-delivery architecture.

Why it Matters: As AI infrastructure, electrification, industrial automation, and energy systems continue to increase demand for more efficient and compact power architectures, designers are facing growing challenges around energy consumption, thermal management, and system size. AI data centers alone are expected to consume up to 9% of U.S. electricity generation by 2030[1], with power and cooling costs accounting for up to 40% of the total data center operating expenses[2].

GaNEXUS addresses these challenges by enabling faster switching speeds, lower switching losses, higher power density, and improved thermal performance compared to conventional silicon-based solutions. These advantages allow customers to reduce the size of magnetics and cooling systems while improving overall system efficiency and responsiveness and lowering system cost in applications ranging from AI data center power delivery and electric vehicle charging to robotics and industrial power systems.

"Our GaNEXUS portfolio is enabling new architectures for power system design," said Antoine Jalabert, vice president of the GaN division at onsemi. "As customers push for more power in less space, it gives engineers greater flexibility to overcome constraints that have limited conventional power architectures."

How it Works: GaNEXUS solutions are engineered to improve how modern power systems convert and manage energy. When paired with onsemi's Treo Platform for integrated sensing, control, protection, and power-management, GaNEXUS can deliver complete system-level power solutions that are smarter, more reliable, and more robust. This system-level approach helps customers simplify design complexity, accelerate development and qualification, reduce thermal and cooling requirements, and optimize performance across the full power delivery chain.

In low- and medium-voltage systems, including AI server 48V intermediate bus converter (IBC) and battery backup units (BBU) and motor drives, GaNEXUS enables:

- ~30–60% smaller magnetics
- ~1.5x–2x higher power density
- ~0.5–2% efficiency improvement, depending on topology

- Reduced switching losses, improved thermal performance and control stability

In higher-voltage applications such as AI power shelves, high-voltage DC-DC conversion, PFC, and LLC power stages, GaNEXUS enables:

- Up to ~60% reduction in magnetics size in high-frequency AC-DC and resonant stages
- ~1.5x–2x higher power density in PFC, LLC, and HV DC-DC architectures
- ~0.5–1% efficiency gains with meaningful thermal and operating-cost impact at scale
- Lower losses reduce thermal stress in compact, high-power systems
- GaNEXUS Smart reduces system risk and simplifies power stage design for faster qualification and higher confidence

GaNEXUS devices feature thermally enhanced packages with industry-standard footprints for dual sourcing, like TOLL Bottom Cooling, TOLT Top Cooling, and dual cooling 3.3mm x 3.3mm and 5mm x 6mm packages.

Additional Information

- onsemi GaNEXUS
- onsemi Treo Platform

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[1] Source Powering Intelligence: Analyzing Artificial Intelligence and Data Center Energy Consumption

[2] Source: Data Center Operating Costs: Complete Guide (2026)

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.

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