onsemi Introduces Industry-First Elite Pairing Studio to Simplify Power Design

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Interactive simulation tool gives engineers visibility into device-level behavior and pairing trade-offs, accelerating power electronics design

SCOTTSDALE, Ariz., June 08, 2026 (GLOBE NEWSWIRE) -- **Summary**

The onsemi Elite Pairing Studio is an online design environment that simplifies pairing SiC MOSFETs and gate drivers for demanding power electronics applications, including AI data centers, electric vehicles, and industrial systems. By providing visibility into device-level behavior and pairing trade-offs, the Studio enables earlier, better-informed engineering decisions and helps reduce design iterations. The Elite Pairing Studio serves as the front door to onsemi's broader suite of design tools, enabling a seamless path to system-level evaluation of performance, efficiency, and thermal behavior.

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News Highlights

- onsemi's industry-first Elite Pairing Studio helps engineers by analyzing device combinations and recommending well-matched SiC MOSFET and gate driver pairings based on their system requirements
- Online tool accelerates development by enabling evaluation of device-level switching behavior, losses, and trade-offs early in the design process, reducing iteration before advancing to full system-level analysis
- Interactive, personalized simulation environment gives engineers visibility into timing, waveform behavior, and trade-offs behind each recommended pairing
- Additional onsemi technologies will be added to the Elite Pairing Studio in the future

What's New: onsemi today announced its Elite Pairing Studio, an industry-first online design tool that enables engineers to move beyond traditional component-level selection to quickly identify recommended combinations of silicon carbide (SiC) MOSFETs and gate drivers based on their specific requirements. The interactive tool makes it easier to evaluate pairing behavior and trade-offs, helping accelerate the development of power electronics designs. It also serves as the front door to onsemi's broader simulation toolset for system-level performance and efficiency analysis.

Why it Matters: As power electronics grow more complex, engineers must carefully match gate drivers with switching devices to achieve optimal efficiency, minimize losses, and ensure safe operating temperatures. Early component selection decisions have a direct impact on these system-level outcomes, particularly as teams balance competing requirements. Traditionally, this process requires time-consuming manual evaluation and simulation via extensive datasheet comparisons, spreadsheet analysis, and empirical testing.

The onsemi Elite Pairing Studio simplifies this challenge by guiding engineers through a step-by-step process to identify the ideal combination of an onsemi gate driver and SiC MOSFET based on their requirements. Well-matched pairings can be compared quickly, helping reduce iterations and refine power architectures earlier in the development process. This reduces design risk, shortens time to market, and helps ensure systems perform as intended in real-world conditions.

How it Works: The cloud-based environment gives engineers access to a private and secure workspace on onsemi.com where they can use an intuitive workflow to explore device combinations based on their inputs. The tool evaluates a wide range of gate driver combinations with the selected SiC MOSFET, using transparent methods based on established industry equations and real-world performance calculations. The evaluation logic is clear and inspectable for users.

Through the Elite Pairing Studio, engineers can examine key figures of merit for each pairing, including:

- Switching timings
- Gate voltage and current (V/I) waveforms
- Voltage overshoot margins relative to device ratings
- Switching energy losses, such as turn-on and turn-off energy

These insights allow engineers to compare pairing trade-offs relevant to their application and gain early visibility into factors that influence electromagnetic interference behavior and reliability margins. Results are visualized through an interactive waveform viewer, enabling more informed pairing decisions before designs are advanced into full system-level simulation. Additional onsemi technologies will be added to the Elite Pairing Studio in the future.

By providing well-matched pairings of SiC MOSFETs and gate drivers tailored to application needs, the onsemi Elite Pairing Studio enables earlier

design decisions with a clearer understanding of switching behavior and trade-offs. Those pairing insights can then be carried forward using Studio-generated PLECS system-level simulation models and evaluated in the onsemi Elite Power Simulator to fine-tune efficiency, thermal, and loss performance. Together, this seamless development path helps designers translate early pairing insights into improved system-level efficiency and performance for demanding applications including AI data centers, electric vehicles, industrial systems, and electrification infrastructure.

The onsemi Elite Pairing Studio is available now through the onsemi website and will be demonstrated at the onsemi booth (Hall 9-332) at PCIM Expo 2026 in Nuremberg, Germany.

More Information:

- **onsemi Elite Pairing Studio:** landing page
- **Related Technologies:** onsemi gate driver products, onsemi silicon carbide (SiC) MOSFET portfolio

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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