

NEWS RELEASE

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Sumitomo Electric Device Innovations USA Showcases 2.4-2.5 GHz, 300W GaN Transistor at IMS 2025

San Jose, CA – March 16, 2025 - Sumitomo Electric Device Innovations USA (SEDU) announced it will showcase its High Power GaN-HEMTs for ISM-band (Industrial, Scientific, and Medical), microwave heating, and continuous-wave (CW) applications. The featured ES/SGN2425-300P device offers high power, high efficiency, easy matching, and consistent performance for 2.4–2.5 GHz high-power uses with 50V operation.

High Power GaN-HEMTs are increasingly replacing traditional technologies like magnetrons and LDMOS in these applications due to their superior efficiency (up to 70%), reliability, and ability to deliver precise, uniform heating through phase control. They are widely used in industrial ovens, medical equipment, plasma generation, and RF lighting, where their high-power handling and long operational life provide significant advantages over legacy solutions.

FEATURES:

- High Peak Power: 300W CW
- 3 stage Total Efficiency: 74%
- Total Power Gain: 50dB
- All 50V VDD Operations
- Easy Matching: Pre-matched for 2.5GHz (HPA)
- Small Size Package

Key Advantages of GaN-HEMTs:

High Power Density	10–20 W/mm power density in CW/pulsed modes enables compact, high-power systems for industrial heating and wireless power transfer.
Efficiency	Achieves 77% typ. drain efficiency at ISM frequencies (e.g., 2.45 GHz), rivaling magnetrons while offering precise control.
Reliability and Thermal Performance	10+ years operational lifespan, far exceeding magnetrons (1–3 years), reducing maintenance costs.
Phase Coherence and Control	Unlike magnetrons, GaN-based SSPAs (Solid-State Power Amplifiers) enable phase-coherent power delivery, allowing beamforming, power steering, and uniform heating in microwave cavities.

Scalability and Flexibility	Combines multiple GaN amplifiers to reach kW-level power, overcoming single-device limits of magnetrons (~6 kW) or LDMOS (~250 W).
Cost	Higher upfront cost but lower total ownership cost due to longevity, efficiency, and control.

Visit us at IMS 2025, June 17-19, booth 2028 for a live demonstration.

About Sumitomo Electric Device Innovations USA

Sumitomo Electric Device Innovations USA (SEDU) is a subsidiary of Sumitomo Electric Device Innovations (SEDI), a global leader in advanced RF power and optical communication technologies. SEDI's leadership in GaN device technology enables the development of smaller, lighter, more efficient, and more reliable satellite and radar systems. Recognized as the number one leader in RF GaN (Gallium Nitride) technology, SEDI leverages deep expertise to transform applications in satellite communications, radio links, radars, wireless infrastructure, aerospace, and defense. These innovations directly address the evolving demands for higher data rates, broader bandwidth, and improved operational efficiency in both commercial and defense aerospace sectors.

For more information, visit <https://www.sei-device.com>

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