

# EPC Reference Design Powers High-Efficiency Solar Optimizers with GaN FETs

*Enhancing Photovoltaic System Performance with Compact, Reliable, Cost-Effective GaN Technology*

EL SEGUNDO, CA, UNITED STATES, December 20, 2024 /

EINPresswire.com/ -- Efficient Power Conversion Corporation (EPC), the world leader in enhancement-mode gallium nitride (eGaN®) power devices, proudly announces the launch of the [EPC9178](#), the latest reference design for photovoltaic (PV) optimizers. Designed to deliver high reliability while addressing critical challenges in energy efficiency and cost-effectiveness through the reduction of passive components in solar energy systems, the EPC9178 demonstrates the transformative potential of GaN technology for renewable energy solutions.



The EPC9178 reference design employs a back-to-back buck-boost converter topology, ensuring optimal energy harvesting for each solar panel, even under challenging conditions such as shading. This compact, high-performance solution bridges the gap between micro-inverters and string inverters, offering enhanced energy efficiency and compatibility with existing infrastructure.

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The EPC9178 delivers a compact, high-performance, and reliable design that enables cost-effective solar energy systems,”

*Alex Lidow, CEO, and co-founder of EPC.*

## EPC9178 Key Features

The EPC9178 combines cutting-edge GaN technology with an advanced, dedicated controller to deliver unmatched

performance and reliability.

- Compact Design: High-frequency operation at 450 kHz minimizes the size of passive

components, resulting in a lightweight and space-saving solution.

- High Efficiency: Achieves up to 98% peak efficiency, reducing power losses and improving thermal management.
- Advanced GaN Technology: Powered by 100 V-rated [EPC2306](#) eGaN® FETs, the EPC9178 offers low on-resistance (3.8 mΩ) and reduced switching losses compared to silicon MOSFETs.
- Simplified Control: Integrated LM5177 controller from Texas Instruments reduces design complexity and component count.
- Versatile Output Settings: Operates across an input voltage range of 30 V to 60 V, with selectable output voltages of 30 V, 45 V, and 60 V.

"The EPC9178 delivers a compact, high-performance, and reliable design that enables cost-effective solar energy systems," said Alex Lidow, CEO of EPC.

For more information about the EPC9178, visit <https://epc-co.com/epc/products/evaluation-boards/epc9178>.

#### Price and Availability

The EPC9178 evaluation boards are priced at \$480.00

The EPC2306 is priced at \$1.87/ea in 3Ku reels.

Evaluation boards and devices are available for immediate delivery from Digi-Key at

<https://www.digikey.com/en/supplier-centers/epc>

#### About EPC

EPC is the leader in enhancement mode gallium nitride (eGaN®) based power management. eGaN FETs and integrated circuits provide performance many times greater than the best silicon power MOSFETs in applications such as DC-DC converters, remote sensing technology (lidar), motor drives for eMobility, robotics, and drones, and low-cost satellites.

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