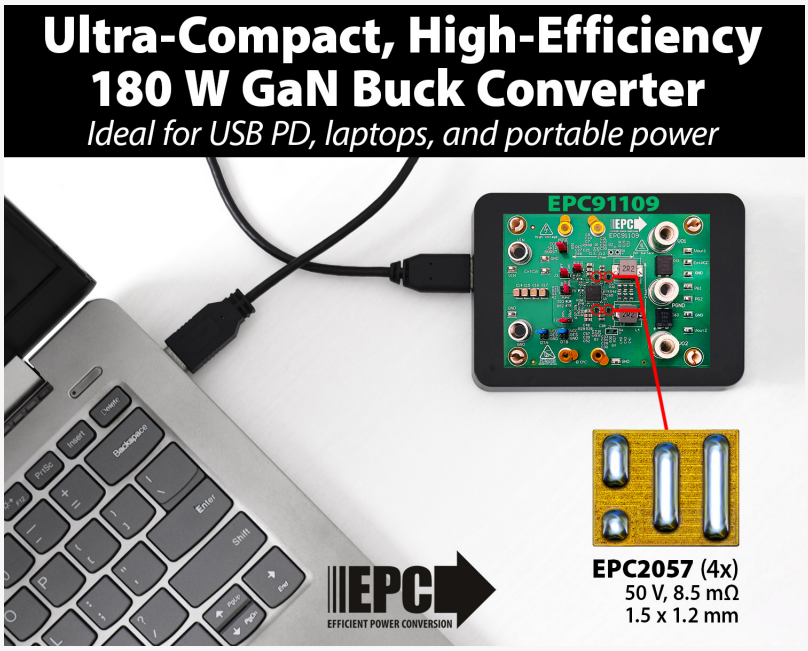
EPC Releases a High-Efficiency and High-Power-Density, GaN-based Evaluation Board for USB PD Applications up to 180W

Compact 180 W GaN buck converter with no heatsink needed—ideal for USB PD, laptops, and portable power applications.



Ultra-Compact, High-Efficiency 180 W GaN Buck Converter Evaluation Board for USB PD Applications

EL SEGUNDO, CA, UNITED STATES, June 24, 2025 /EINPresswire.com/ -- Efficient Power Conversion Corporation (EPC), the world leader in enhancement-mode gallium nitride (eGaN®) power devices announces the release of the EPC91109, a high-performance evaluation board designed to demonstrate the benefits of eGaN® FETs in a compact, thermally efficient, two-phase synchronous buck converter. Targeting USB Power Delivery (USB-PD 3.1) applications up to 180 W, the EPC91109 is optimized for space- and power-constrained designs such as laptops, portable devices, and battery-powered systems.

The EPC91109 combines four 50 V-rated EPC2057 GaN FETs with the Analog Devices LTC7890, a dual-phase buck controller, to deliver output voltages of 12 V, 16 V, or 20 V from an input range of 20 V to 36 V. In two-phase interleaved mode, it supports output currents up to 14.3 A—matching the full 180 W USB-PD power envelope at 12 V output from a 36 V source.

“The EPC91109 shows GaN’s power density and efficiency for USB PD. It’s a compact, robust platform that needs no heatsink or airflow—even at full power,” said Alex Lidow, CEO of EPC.

Key Features of the EPC91109 Evaluation Board:

- Configurable to operate in either two-phase or single phase, dual-output mode
- Up to 180 W output (12 V at 14.3 A)
- Ultra-compact power stage: 24 mm x 24 mm
- Low-profile inductor of 3 mm height

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>
> *Alex Lidow, CEO of EPC*

- No heatsink or forced air cooling required
- Configurable light-load modes and dead-time settings
- Peak efficiency > 98% under standard operating conditions

The EPC91109 demonstrates how EPC's latest generation GaN FETs and advanced controllers from Analog Devices can be combined to produce smaller, faster, cooler converters that outperform silicon-based alternatives.

For detailed technical specifications, schematics, and to request a sample, visit the EPC91109 product page.

Price and Availability
The EPC91109 reference design boards are priced at $317.09
The EPC2057 is priced at $0.657/ea in 2.5Ku reels.
Reference design boards and devices are available for immediate delivery from Digi-Key at https://www.digikey.com/en/supplier-centers/epc

Renee Yawger
Efficient Power Conversion
+1 908-619-9678
email us here
Visit us on social media:
LinkedIn
Instagram
Facebook
YouTube
X
Other
