EPC Introduces 100 V eGaN® Power Transistor for 48 V DC-DC, Motor Drives, and Lidar Applications

The EPC2052 offers power systems designers a 100 V, 13.5 mΩ, power transistor capable of 74 A pulsed in an extremely small chip-scale package. In a 48 V – 12 V DC-DC Power Converters these new generation eGaN FETs achieved greater than 97% efficiency at 500 kHz and greater than 96% Efficiency at 1 MHz

Efficient Power Conversion (EPC) announces the EPC2052, a 100 V GaN transistor with a maximum $R_{DS(on)}$ of 13.5mΩ and a 74 A pulsed output current for high efficiency power conversion in a tiny 2.25mm^2 footprint.

Applications demanding higher efficiency and power density no longer have to choose between size and performance. The EPC2052 measures just 1.50 mm x 1.50 mm (2.25 mm^2). Despite the small footprint, operating in a 48 V – 12 V buck converter, the EPC2052 achieves greater than 97% efficiency at a 10 A output while switching at 500 kHz and greater than 96% at a 10 A output while switching at 1 MHz enabling significant system size reductions. In addition, the low cost of the EPC2052 brings the performance of GaN FETs at a price comparable to silicon MOSFETs. Applications benefiting from this performance, small size, and low cost include 48 V input power converters for computing and telecom systems, LiDAR, LED Lighting, and Class-D audio.

“The ability of eGaN based power devices to operate efficiently at high frequency widens the performance and cost gap with silicon. The 100 V, EPC2052, is significantly smaller than the closest silicon MOSFET and the high frequency operation allows even further space savings opportunities to designers.” said Alex Lidow, EPC’s CEO.

Development Board

The EPC9092 development board is a 100 V maximum device voltage, half bridge featuring the EPC2052, and the LMG1205 gate driver from Texas Instruments. This 2” x 2” (50.8 mm x 50.8 mm) board is designed for optimal switching performance and contains all critical components for easy evaluation of the 100 V EPC2052 eGaN FET.

Price and Availability

The EPC2052 eGaN FET is priced for 1K units at $0.68 each and $0.54 in 100K volumes and the EPC9092 development board is priced at $118.75 each.

About EPC

EPC is the leader in enhancement mode gallium nitride based power management devices. EPC was the first to introduce enhancement-mode gallium-nitride-on-silicon (eGaN) FETs as power MOSFET replacements in applications such as DC-DC converters, wireless power transfer, envelope tracking, RF transmission, power inverters, remote sensing technology (LiDAR), and Class-D audio amplifiers with device performance many times greater than the best silicon power MOSFETs. EPC also has a growing portfolio of eGaN-based integrated circuits that provide even greater space, energy, and cost efficiency. eGaN is a registered trademark of Efficient Power Conversion Corporation, Inc.

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