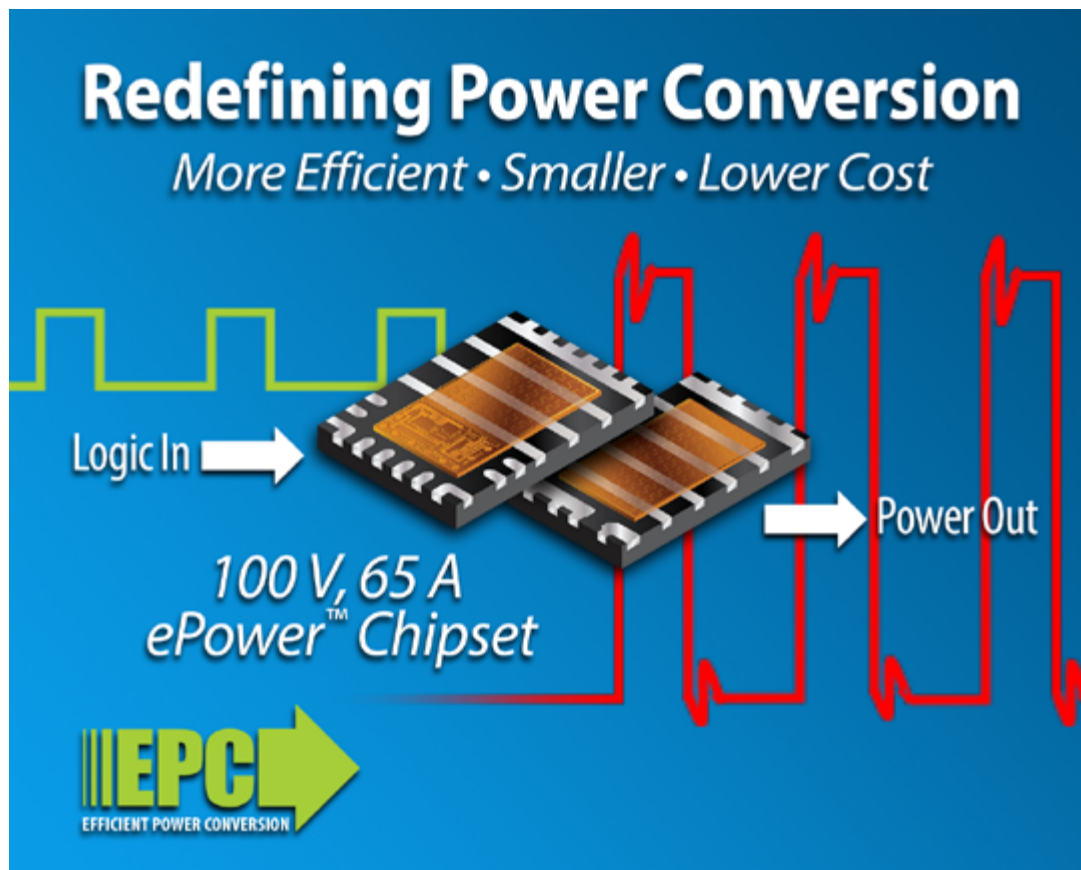


ePower Chipset Family for High Power Density Applications



EPC has introduced a 100 V, 65 A integrated circuit chipset designed for 48 V DC-DC conversion used in high-density computing applications and in 48 V BLDC motor drives for e-mobility, robotics, and drones. The EPC23101 eGaN IC plus EPC2302 eGaN FET offers an ePower Chipset capable of a maximum withstand voltage of 100 V, delivering up to 65 A load current, while capable of switching speeds greater than 1 MHz.

- Key features of the EPC23101 integrated circuit using EPC's proprietary GaN IC technology include integrated 3.3 mOhm $R_{DS(on)}$ high side FET with gate driver, input logic interface, level shifting, bootstrap charging, gate drive buffer circuits and gate driver output to drive external low side eGaN FET
- The EPC2302 eGaN FET offers a super small $R_{DS(on)}$ of just 1.8 mOhm, together with very small Q_G , Q_{GD} , and Q_{OSS} parameters for low conduction and switching losses.
- Both devices feature a thermally enhanced QFN package with exposed top with optimized pinout between the two devices. The combined chipset footprint, is 7 mm x 5 mm, offering an extremely small solution size for the highest power density applications

When operated in a 48 V to 12 V buck converter, the EPC23101 + EPC2302 chipset delivers 96% efficiency at 1 MHz switching frequency and 97% efficiency at 500 kHz switching frequency and can deliver 65 A with less than 50 °C temperature rise.

The ePower family of products makes it easy for designers to take advantage of the significant performance improvements made possible with GaN technology. Integrated devices are easier to design, easier to layout, easier to assemble, save space on the PCB, and increase efficiency.

"Discrete power transistors are entering their final chapter. Integrated GaN-on-Silicon offers higher performance in a smaller footprint with significantly reduced design engineering required," said Alex Lidow, CEO and co-founder of EPC. "From the serenity or control environment of digital and analog controllers, the ePower Chipset translates the PWM command signals to high voltage and high current waveforms capable of driving real world loads. Designers can use the ePower Chipset to make lighter weight and more precise battery-operated BLDC motor drives for eMotion, robotic arms and drones, higher efficiency 48 V input DC/DC converters for data center, datacom, artificial intelligence, solar MPPT and other industrial and consumer applications."

Development Board

The EPC90142 development board is a 100 V maximum device voltage, 65 A maximum output current, half bridge featuring the EPC23101 Integrated ePower FET and EPC2302 eGaN FET. The purpose of this board is to simplify the evaluation process of the ePower Stage Chipset 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.