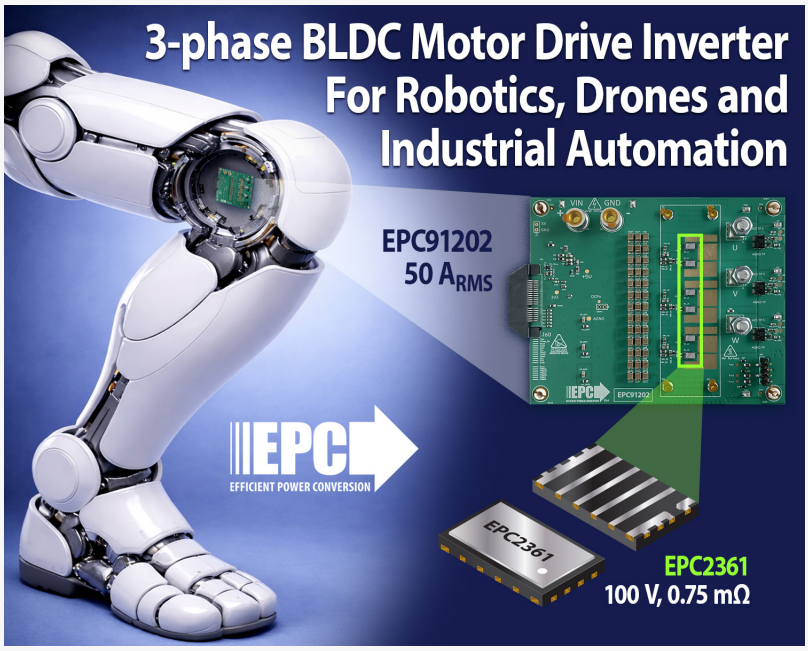
EPC Introduces EPC91202 Evaluation Board: High-Performance 50 ARMS Three-Phase BLDC Inverter Powered by eGaN®

100 V GaN-based inverter reference design delivering 50 ARMS phase current, integrated sensing, and PWM operation up to 150 kHz.



EPC91202

EL SEGUNDO, CA, UNITED STATES, March 12, 2026 /EINPresswire.com/ -- Efficient Power Conversion (EPC), the world leader in enhancement-mode gallium nitride (eGaN®) power devices, today announced the EPC91202 evaluation board, a complete three-phase BLDC motor drive inverter designed to accelerate development of high-efficiency motor drive applications in robotics, e-mobility, drones, industrial automation, and battery-powered systems.

The EPC91202 is based on the EPC2361 100 V eGaN FET and can output up to 70 A peak (50 ARMS) of current. It can also switch PWM frequencies up to 150 kHz, resulting in less motor noise, higher delivered torque-per-ampere than silicon-based motor drive solutions and reduced DC link size and cost.

> The EPC91202 demonstrates how GaN technology transforms motor drive performance,"
>
> *Alex Lidow, CEO and co-founder of EPC*

Besides the GaN-based power stage, the EPC91202 board has all the necessary circuitry that are needed for a complete inverter. These include gate drivers, housekeeping power supplies, voltage and temperature monitoring, precision current sensing, and protection circuitry, making it quick and straightforward for engineers to quickly test and use high-density GaN motor drive designs.

Operating from input voltages between 14 V and 76 V, the EPC91202 is optimized for battery-powered systems and supports both sensorless and encoder-based control architectures. Its optimized dv/dt on the switching node (<10 V/ns) minimizes EMI and motor acoustic emissions while reducing torque ripple, a key advantage for precision motion applications.

“The EPC91202 demonstrates how GaN technology transforms motor drive performance,” said Alex Lidow, CEO and co-founder of EPC. “By combining high switching speed, low losses, and integrated sensing, designers can dramatically increase power density while simplifying development and reducing system cost.”

The inverter is compatible with multiple controller platforms from leading microcontroller suppliers, allowing developers to leverage existing firmware and development ecosystems. Accurate phase current and voltage sensing enables advanced control techniques such as field-oriented control (FOC) and space-vector PWM for high-performance motion systems.

Key Features

- 3-phase inverter based on EPC2361 100 V eGaN FET
- Up to 70 A peak / 50 ARMS phase current
- 14 V – 76 V input voltage range
- Switching frequency up to 150 kHz
- on-board current, voltage, and temperature sensing
- Over-current and under-voltage protection
- Encoder and Hall sensor interface
- Optimized low-noise switching for motor drives

The EPC91202 is ideal for humanoid robot joints, compact servo drives, robotics, drones, and eMobility platforms. Complete design support files, including schematic, bill of materials (BOM), and Gerber files, are available on the EPC91202 product page.

Price and Availability

The EPC91202 reference design board is priced at $500. Reference design boards and devices are available for immediate delivery from Digi-Key and Mouser.

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