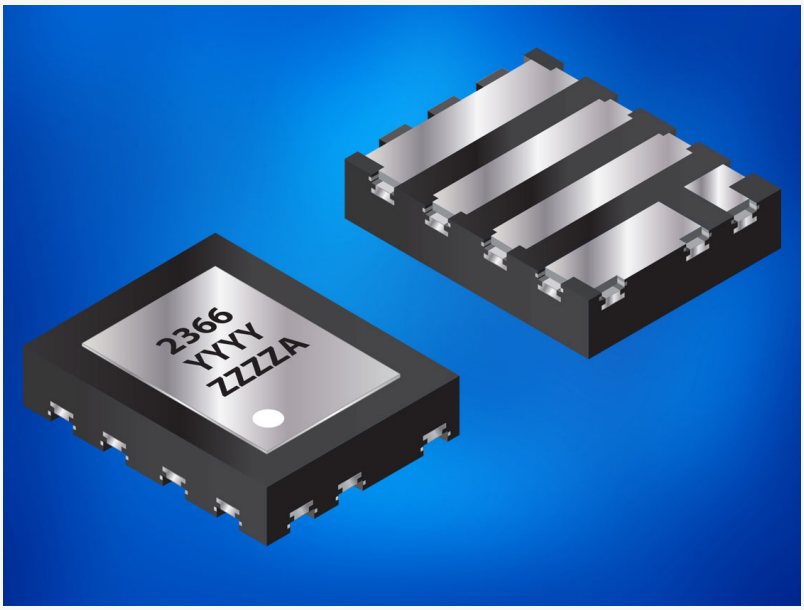
EPC2366 eGaN® FET Wins EPDT 2025 Product of the Year Award

The EPC2366 40 V eGaN® FET sets new benchmarks in performance, efficiency, and power density for next-generation power electronics.



EPC2366 Image

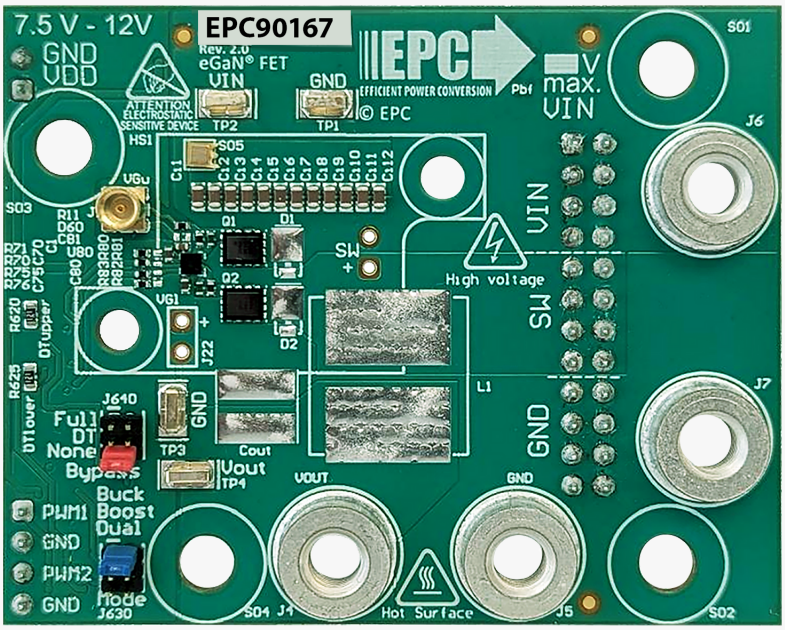
EL SEGUNDO, CA, UNITED STATES, January 13, 2026 /EINPresswire.com/ -- Efficient Power Conversion (EPC) is proud to announce that the EPC2366 40 V enhancement-mode gallium nitride (eGaN®) power transistor has been honored with the EPDT 2025 Product of the Year Award in the Power Transistor category. This recognition underscores EPC's leadership in delivering cutting-edge GaN technology that drives higher efficiency and performance across data center, robotics, and AI infrastructure applications.

Comprehensive Electrical Performance

> The EPC2366 showcases our ongoing commitment to help engineers design smaller, faster, and more efficient systems that meet the power demands of tomorrow."
>
> *Alex Lidow, CEO and co-founder of EPC*

The EPC2366 is a 40 V enhancement-mode GaN (eGaN®) power transistor for applications that need fast switching and low losses and have high power density and high efficiency. Far superior to any of the aging power MOSFET transistors of similar voltage, the EPC2366 is the best choice in 12 VOUT synchronous rectifier applications. It has a very low drain-to-source on-resistance (RDS(on)) of 0.8 mΩ, which cuts down on conduction losses when the current is high. The device has a great gate charge–based Figure of Merit, which is defined as RDS(on) × QG < 12 mΩ *nC. This is a key measure of how well it switches. This low FoM shows that the EPC2366 can reduce both conduction and switching losses at the same time. This makes it better for high-frequency power conversion than regular silicon MOSFETs.

The EPC2366 can handle a drain-to-source voltage of 40 V and a transient voltage of up to 48 V. It can also handle continuous drain currents of up to 88 A at a gate voltage of 5 V and pulsed currents of about 360 A. Its enhancement-mode operation makes it easy to drive the gate, just like silicon MOSFETs, while still getting the benefits of GaN technology, such as no reverse recovery charge and very low output capacitance. These features make switching transitions happen faster, cut down on deadtime losses, and make synchronous rectification and half-bridge topologies more efficient.



EPC90167 Evaluation Board

The device is thermally optimized for high power density thanks to its small 3.3 × 2.6 mm PQFN package, which has a thermal pad on the back that makes it easy for heat to flow to the PCB. The thermal resistance from the junction to the case is usually about 0.6 °C/W, and the thermal resistance from the junction to the board is about 1.8 °C/W. The junction-to-ambient thermal resistance changes based on the design of the board. It is about 54 °C/W on a JEDEC standard board and as low as 26 °C/W when mounted on EPC's recommended evaluation layout. If the PCB is designed and the copper is spread out correctly, these thermal parameters make it possible to get rid of heat effectively, which allows for reliable operation up to a maximum junction temperature of 150 °C.

Half-bridge evaluation board

Efficient Power Conversion (EPC) made the EPC90167, a 40 V half-bridge evaluation board, to help quickly and accurately test EPC's EPC2366 enhancement-mode eGaN® power transistors in high-frequency, high-current power conversion applications. The board has two EPC2366 devices in a small half-bridge configuration and all the other necessary circuitry for immediate use. This makes it a useful reference design for engineers who are working on DC-DC converters, motor drives, or other fast-switching power stages. It is designed and built in such a way that it can take full advantage of GaN technology's high switching speed and low loss properties while keeping parasitic inductances and ringing to a minimum.

The board can power a gate drive from 7.5 V to 12 V and works with standard PWM logic input levels. It can work in either single-input or dual-input PWM mode, which makes it flexible enough to work with different types of controllers. In single-input mode, the onboard logic creates

complementary gate signals with a specific amount of deadtime. In dual-input mode, the user can directly control the high-side and low-side switches for more advanced modulation schemes, as long as they make sure that the right amount of deadtime is used.

The EPC90167's main design goal is to improve thermal performance. The board uses the backside thermal pads of the EPC2366 devices to move heat quickly into the PCB and, if desired, into an external heatsink. The EPC90167 is easy to use and measure because it has clearly marked test points for important signals like gate drive voltages, switch node waveforms, and supply rails. The guide gives suggested steps for starting up and shutting down the system safely. These steps include turning on the gate driver before applying the main bus voltage and slowly increasing the operating conditions while keeping an eye on the temperature and waveforms.

Enabling the Future of Efficient Power: Award-Winning Excellence

The EPC2366 is a game-changing eGaN® device optimized for synchronous rectification on the secondary side of 48 V–12 V LLC converters. Its industry-leading figure of merit enables higher switching frequencies and improved efficiency. These advantages make it well suited for high-density power applications such as AI data center power supplies.

“Winning the EPDT Product of the Year award recognizes how GaN continues to redefine what’s possible in power electronics,” said Alex Lidow, CEO and co-founder of EPC. “The EPC2366 showcases our ongoing commitment to help engineers design smaller, faster, and more efficient systems that meet the power demands of tomorrow.”

As EPDT’s Editor, Mike Green, commented; “Congratulations to all the team at EPC who have participated in the development, introduction and subsequent promotion of the EPC2366. The company is taking wide bandgap technology into exciting new areas that hadn’t previously been explored, and the differentiation it has achieved with this device, in terms of FoM and power density, will be of clear value to next-generation power system design.”

For additional details, visit www.epc-co.com/epc or view the EPC2366 data sheet and EPC90167 evaluation board quick start guide here.

Nick Cataldo
Efficient Power Conversion
+1 203-918-4755
nick.cataldo@epc-co.com
Visit us on social media:
LinkedIn
Facebook
X