

Design Higher Density and Lower Cost Lidar Systems with New 80 V, 15 A GaN eToF™ Laser Driver IC

EPC introduces EPC21701 - 80 V laser driver IC for time-of-flight lidar applications such as vacuum cleaners, robotics, 3D security cameras and 3D sensing.

EL SEGUNDO, CA, USA, January 17, 2023 /EINPresswire.com/ -- EPC announces the introduction of the [EPC21701](#), a laser driver that monolithically integrates an 80 V, 40 A FET with gate driver and 3.3 logic level input into a single chip for [time-of-flight lidar systems](#) used in robotics, surveillance systems, and vacuum cleaners. It is tailored to lidar systems for gesture recognition, time of flight (ToF) measurement, robotic vision, or industrial safety.

The EPC21701 laser driver uses a 5 V supply voltage and is controlled using 3.3 V logic. It is capable of very high frequencies greater than 50 MHz and super short pulses down to 2 ns to modulate laser driving currents up to 15 A. Voltage switching time is less than 1 ns and delay time from input to output is less than 3.6 ns. The EPC21701 is a single-chip driver plus GaN FET using EPC's proprietary GaN IC technology in a chip-scale BGA form factor that measures only 1.7 mm x 1.0 mm x 0.68 mm. The wafer-level packaging is small, has low inductance, and lays out very well with the laser system. With this small form factor and the integration of several functions, the overall solution is 36% smaller on the printed circuit board (PCB) compared to an equivalent multi-chip discrete implementation.

The 80 V EPC21701 complements the ToF driver IC family in a chip-scale package (CSP) that also includes the 40 V, 15 A EPC21601, and the 40 V, 10 A EPC21603 options.

Integrated devices in a single chip are easier to design, lay out, assemble, save space on the PCB, increase efficiency, and reduce cost. This family of products will enable faster adoption and



eGaN® ICs Reduce Solution Size for Advanced Time-of-Flight Applications

EPC21701
80 V, 15 A
eToF™ Laser Driver IC
<2 ns pulses
1.7 x 1.0 mm

EPC
EFFICIENT POWER CONVERSION

New 80 V, 15 A GaN eToF™ Laser Driver IC for Higher Density and Lower Cost Lidar Systems "



This new family of GaN integrated circuits dramatically improves the performance while reducing size and cost for time-of-flight lidar systems.”

Alex Lidow, CEO, and co-founder of EPC.

increased ubiquity of ToF solutions across a wider array of end-user applications.

“This new family of GaN integrated circuits dramatically improves the performance while reducing size and cost for time-of-flight lidar systems,” said Alex Lidow, CEO and co-founder of EPC. “Integrating a GaN FET with a driver on one chip generates an extremely powerful and fast IC and reduces size and cost for wider adoption in consumer and industrial applications. With EPC21701, we expand the family to 80 V and 15 A and will soon extend the family

further to 100 V and 125 A.”

Development Board

The [EPC9172](#) development board features the EPC21701 eToF™ laser driver IC and is primarily intended to drive laser diodes with short, high-current pulses. Capabilities include minimum pulse widths of < 2 ns, 15 A peak currents, and a bus voltage rating of 40 V.

Price and Availability

The EPC21701 eToF laser drive IC is priced at \$1.95 in 1Ku volumes

The EPC9172 development board is priced at \$420.00 each.

The EPC21701 and EPC9172 are available for immediate delivery from Digi-Key at <https://www.digikey.com/en/supplier-centers/epc>

Designers interested in replacing their silicon MOSFETs with a GaN solution can use the EPC GaN Power Bench’s cross-reference tool to find a suggested replacement based on their unique operating conditions. The cross-reference tool can be found at: <https://epc-co.com/epc/DesignSupport/GaNPowerBench/CrossReferenceSearch.aspx>

About EPC

EPC is the leader in enhancement mode gallium nitride (eGaN®) based power management. eGaN FETs and integrated circuits provide performance many times greater than the best silicon power MOSFETs in applications such as DC-DC converters, remote sensing technology (lidar), motor drives for eMobility, robotics, drones, and low-cost satellites.

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