GaN FETs Enable 75 - 231 Ampere Laser Diode Control in Nanoseconds for Advanced Automotive Autonomy

EPC launches three laser driver boards showcasing AEC-Q101 qualified GaN FETs' rapid transition for superior LiDAR system performance.

EL SEGUNDO, CA, UNITED STATES, January 9, 2024 /EINPresswire.com/ -- EPC launches three laser driver boards showcasing AEC— EPC introduces three evaluation boards - EPC9179, EPC9181, and EPC9180 - featuring pulse current laser drivers of 75 A, 125 A, and 231 A, showcasing EPC's AEC-Q101 GaN FETs. These FETs; EPC2252, EPC2204A, and EPC2218A are 30% smaller and more cost-effective than their predecessors. Designed for both long and short-range automotive lidar systems, these boards expedite solution evaluation with varied input and output options.

> To meet the growing demand for automotive lidar, these cost-effective boards, featuring our latest AEC products, streamline evaluation, reducing time-to-market with exceptional switching performance,"
>
> *Alex Lidow, CEO, and co-founder of EPC.*

All boards share identical functionality, differing only in peak current and pulse width. Utilizing a resonant discharge power stage, they employ a ground-referenced GaN FET driven by LMG1020 gate driver. The GaN FET's ultrafast switching enables rapid discharge of a charged capacitor through the load's stray inductance, enabling peak discharge currents of tens to hundreds of amps within nanoseconds. The printed circuit board is designed to minimize power loops and common source inductance while offering mounting flexibility for laser diodes or alternative loads. To enhance user-friendliness, all boards ship with EPC9989 interposer PCBs, featuring various footprints to accommodate a variety of laser diodes or other loads. Customers can choose one that meets their needs to evaluate the GaN solutions.

The EPC9179/81/80 boards are designed to be triggered from 3.3V logic or differential logic signals such as LVDS. For single-ended inputs, the boards can operate with input voltages down to 2.5 V or 1.8 V with a simple modification. Designing an automotive lidar system is complex, and finding a reliable solution is challenging. The purpose of these evaluation boards is to simplify the evaluation of powerful GaN-based lidar drivers that switch faster and deliver higher pulse current than other semiconductor solutions. For technical details, EPC offers full

schematics, bill of materials (BOM), PCB layout files, and a quick start guide on EPC's website.

"To meet the growing demand for automotive lidar, these cost-effective boards, featuring our latest AEC products, streamline evaluation, reducing time-to-market with exceptional switching performance," said Alex Lidow, CEO, and co-founder of EPC.

Price and Availability:

The EPC2252, EPC2204A, and EPC2218A GaN FET are priced at $0.85, $1.37, $2.71 respectively in 1Ku volumes.

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The EPC9179/EPC9181/EPC9180 development board is priced at $393.900, $454.50, $424.20 each respectively.

All evaluation boards and GaN FETs 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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