

# New Automotive Qualified GaN FETs for Vehicle Electronics and Advanced Autonomy from EPC

*EPC introduces two new 80 V AEC-Q101 qualified GaN FETs, offering designers significantly smaller and more efficient solutions than silicon MOSFETs*

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The EPC2204A and EPC2218A make the ideal switches for automotive lidar and 48 V DC-DC. These 80 V devices improve performance and cost for highly efficiency vehicle electrification.”

*Alex Lidow, CEO and Co-Founder*

Corporation, the world’s leader in enhancement-mode gallium nitride (eGaN®) FETs and ICs, expands the selection of automotive, off-the-shelf gallium nitride transistors with the introduction of 80 V, 6 mΩ EPC2204A that delivers 125 A pulsed current in a 2.5 mm x 1.5 mm footprint and the 80 V, 3.2 mΩ EPC2218A that delivers 231 A pulsed current in a 3.5 mm x 1.95 mm footprint, offering designers significantly smaller and more efficient devices than silicon MOSFETs for automotive DC-DC for 48V-12V conversion, infotainment, and lidar for autonomous driving.

The EPC2204A and EPC2218A are ideal for applications with demanding requirements for high power density

including 48 V – 12 V bidirectional converters for mild hybrid cars, 24 V – 48 V DC-DC in cars and trucks, and for infotainment, lighting, and ADAS applications.

Lower gate charges (QGD), and zero reverse recovery losses allow high-frequency operation of 1 MHz and beyond. Combined with high efficiency in a super tiny footprint, these factors enable state-of-the-art power density.

As an example, for 2 kW – 4 kW 48 V-12 V converters, GaN devices allow five times the frequency of silicon MOSFET solutions. Also, with a quarter of the inductance, inductor size and losses are reduced allowing 40% higher current per phase and up to half of the phases for lower system cost and half of the size. Despite the smaller size, efficiency increases up to 98%, greater than 2% higher than MOSFET solutions.

For lower power DC-DC, such as those used for infotainment applications in the vehicle, GaN

allows for operations at 2 MHz and above to avoid interference and enable the smallest solution size.

The fast-switching speed of GaN, with sub nanosecond transitions and the capability to generate high current pulses in less than 3 ns, allows for longer range and higher resolution in lidar for autonomous driving, parking, and collision avoidance.

“The EPC2204A and EPC2218A make the ideal switches for automotive lidar and 48 V DC-DC. These 80 V devices improve performance and cost for highly efficiency vehicle electrification and advanced autonomy applications”, according to Alex Lidow, EPC’s co-founder and CEO. “EPC is committed to the automotive market with devices ranging from 15 V – 100 V shipping in volume, and many more are planned for release.”

#### Price and Availability

The EPC2204A is priced at \$1.55/ea at 1Ku and the EPC2218A is priced at \$3.01/ea at 1Ku

The EPC2204A and EPC2218A 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/design-support/part-cross-reference-search>

#### 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, and drones, and low-cost satellites

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**Automotive Qualified GaN FETs for Highly Efficient Vehicle Electrification and Advanced Autonomy**

**EPC2218A**  
80 V, 3.2 mΩ  
231 A<sub>pulsedr</sub>, 6.8 mm<sup>2</sup>

**EPC2204A**  
80 V, 6 mΩ  
125 A<sub>pulsedr</sub>, 3.8 mm<sup>2</sup>

**EPC**  
EFFICIENT POWER CONVERSION

New Automotive Qualified GaN FETs for Vehicle Electronics and Advanced Autonomy

The advertisement features a yellow car driving on a road that curves into the distance under a blue sky. The EPC logo is positioned in the lower left of the image area. To the right, two GaN FET packages are shown with their respective specifications. The overall theme is automotive electrification and autonomy.

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