



NXP and ZF Collaborate on SiC-Based Traction Inverters to Boost Electric Vehicle Powertrains

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- NXP's high-voltage isolated gate driver family is integrated into ZF's next-generation 800-V SiC-based traction inverter solutions for EVs
- The collaboration aims at improving safety, efficiency, range and performance of EVs
- The GD316x product family implements a number of features to both protect and unleash the benefits of high-voltage SiC power switches

EINDHOVEN, The Netherlands, June 04, 2024 (GLOBE NEWSWIRE) -- NXP Semiconductors N.V. (NASDAQ: NXPI) today announced a collaboration with ZF Friedrichshafen AG, a global leader in e-mobility, on next-generation SiC-based traction inverter solutions for electric vehicles (EVs). By leveraging NXP's advanced GD316x high-voltage (HV) isolated gate drivers, the solutions are designed to accelerate the adoption of 800-V and SiC power devices. Safe, efficient and higher performance traction inverters enabled by the GD316x product family can be designed to extend EV range and reduce the number of charging stops while lowering system level costs for OEMs.

The collaboration between ZF and NXP is a significant step towards accelerating the electrification of the automotive industry, and creating more safe, sustainable, and energy-efficient EVs for the future.

"We look forward to working with NXP to raise the bar for the capabilities and performance of our 800-V traction inverter solutions, which will help us achieve our goals of reducing emissions and promoting sustainability," said Dr. Carsten Götte, SVP Electrified Powertrain Technology at ZF. "The combination of ZF's expertise in motor control and power electronics with NXP's GD316x gate driver family enables us to provide our latest SiC-based traction inverters with higher power and volume density, efficiency and differentiation, and provide our customers with significant safety, efficiency, range and performance improvements."

Traction inverters are a critical component of an EV's electric powertrain, converting DC voltage from the battery into a time-varying AC voltage, which drives the vehicle's motor. As traction inverters now migrate to SiC-based designs, the SiC power devices need to be paired with HV isolated gate drivers to harness the advantages such as higher switching frequency, lower conduction losses, better thermal characteristics and higher robustness at high voltages, compared to previous generation silicon-based IGBT and MOSFET power switches.

The GD316x family of advanced, functionally safe, isolated, high voltage gate drivers incorporates a number of programmable control, diagnostic, monitoring, and protection features, enhanced to drive the latest SiC power modules for automotive traction inverter applications. Its high level of integration allows a smaller footprint and simplifies the system design. The outstanding capabilities reduce Electromagnetic Compatibility (EMC) noise while also reducing switching energy losses for better efficiency. Fast short-circuit protection times (< 1 µsec) in combination with powerful and programmable gate drive schemes optimize the performance of the traction inverter's SiC power modules.

"Together with ZF, we are developing next-generation power electronics for future EVs," said Robert Li, Senior Vice President and General Manager, Electrification at NXP. "Our gate driver family implements a number of outstanding features to both protect and unleash the benefits of high-voltage SiC power switches, making them an ideal choice for ZF's new SiC-based traction inverter solutions. This collaboration is a testament to our commitment to delivering state-of-the-art solutions that enable OEMs to achieve their EV performance and sustainability goals."

ZF traction inverters, enabled by NXP's GD316x product family, are already on the road.

NXP's Electrification Solutions

NXP's Electrification solutions manage the flow of energy in EVs with flexibility and precision to extend driving range and keep vehicles on the road longer. With complete system solutions for EVs, NXP's electrification solutions deliver the optimized performance and integrated safety that OEMs need and are designed for scalability and compatibility across fleets.

For more information, please visit [nxp.com/electrification](https://www.nxp.com/electrification).

About NXP Semiconductors

NXP Semiconductors N.V. (NASDAQ: NXPI) is the trusted partner for innovative solutions in the automotive, industrial & IoT, mobile, and communications infrastructure markets. NXP's "Brighter Together" approach combines leading-edge technology with pioneering people to develop system solutions that make the connected world better, safer, and more secure. The company has operations in more than 30 countries and posted revenue of \$13.28 billion in 2023. Find out more at www.nxp.com.

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Source: NXP USA, Inc.