

High voltage discharge inverter for new energy vehicles





Overview

Do EV traction inverters need a DC link active discharge?

Every EV traction inverter requires a DC link active discharge as a safety-critical function. The discharge circuit is required to discharge the energy in the DC link capacitor under the following conditions and requirements: Power transistor on, off control using the TPSI3050-Q1.

Do electric vehicles need a high voltage power inverter?

Therefore for battery electric vehicles (BEV) and plug-in hybrid vehicles (PHEV) there is the necessity for a high voltage power inverter to drive the electric motors. The inverter acts as the central control unit for the electric motors and enables the power transfer from the HV battery system to the wheels.

Do electric vehicles need traction inverters?

Electric vehicles rely on traction inverters to convert the high-voltage DC energy stored in the vehicle's batteries to drive the AC traction motors. The traction inverter plays a crucial role in driving the vehicle and needs to be extremely robust and reliable, given the high power switching and the likely high dv/dt transients involved.

Why do EV inverters need to be discharged?

Abstract: when an Electrical Vehicle (EV) encounters an accident or the vehicle is taken to a service station, the DC-link capacitor in the inverter must be discharged to ensure safety of both the passengers and the operator.



High voltage discharge inverter for new energy vehicles



[HV Inverter for Electric Vehicles Automotive Applications](#)

1 day ago · The inverter acts as the central control unit for the electric motors and enables the power transfer from the HV battery system to the wheels. With this new trend, a complete new ...

[EV Traction Inverter Design Challenges](#)

Electric vehicles rely on traction inverters to convert the high-voltage DC energy stored in the vehicle's batteries to drive the AC traction motors. The traction inverter plays a crucial role in ...



[High-voltage traction inverter , Nexperia](#)

4 days ago · With both battery electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV), transferring the stored energy from the high ...

[Design Priorities in EV Traction Inverter With Optimum ...](#)

Apr 1, 2023 · ABSTRACT This technical white paper explores key system trends, architecture, and technology for traction inverters. The devices and technologies used to enable traction ...



[Enabling Smarter DC Link Discharge in EV Traction Inverters](#)

May 25, 2025 · Image used courtesy of Adobe Stock DC Link Discharge Challenges in Inverter High-voltage DC links are central to a wide range of power electronic systems in electric and ...



[High-voltage traction inverter , Nexperia](#)

4 days ago · With both battery electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV), transferring the stored energy from the high-voltage (400 / 800 V) battery to the electric motors ...



[HEV/EV Traction Inverter Design Guide Using Isolated ...](#)

Apr 1, 2023 · High-voltage Li-ion batteries are commonly used as the energy storage unit to provide the maximum amount of capacity, minimal weight, and highest efficiency. With current ...





EV Traction Inverter Design Challenges

Electric vehicles rely on traction inverters to convert the high-voltage DC energy stored in the vehicle's batteries to drive the AC traction motors. ...



A DC-Link Hybrid Active Discharge Scheme for Traction Inverters

Sep 6, 2024 · The paper includes a simulation comparison of winding-based discharge with the proposed Hybrid discharge technique. The proposed solution has a higher discharge rate and ...

Trends in High Voltage Inverter Systems

Jan 1, 2023 · This is why new, more powerful devices, like the NXP S32K396 are being used for these types of advanced inverter applications.
3.7. Hybrids While this paper has looked ...



High Voltage Solutions in HEV/EV Part II:

Nov 14, 2025 · Traction Inverter Overview
EV/HEV Traction inverter converts energy stored in a battery to instantaneous multiphase AC power for a traction drive.



[High Voltage Traction Inverter Application Presentation](#)

May 25, 2025 · Traction Inverter trends
Semiconductors contribute to improved energy efficiency, but also to size and weight reduction, to improve the vehicle dynamics



Contact Us

For technical specifications, project proposals, or partnership inquiries, please visit:
<https://eiei.pl>

Scan QR Code for More Information



<https://eiei.pl>