

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.



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3.7. Hybrids While this paper has looked ...



High Voltage Solutions in HEV/EV Part II:

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EV/HEV Traction inverter converts energy stored in a battery to instantaneous multiphase AC power for a traction drive.



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Semiconductors contribute to improved energy efficiency, but also to size and weight reduction, to improve the vehicle dynamics



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