Power electronics inverters

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Enhance traction inverter designs and achieve the highest efficiency, optimized performance, and fastest time-to-market with Infineon"s complete system solution. As an essential component for electric vehicle (EV) drivetrains, traction inverters control the motor and determine driving behavior. Our commitment to quality ensures minimal switching losses, maximum thermal efficiency, and enables regenerative braking to recharge the battery.

SiC-based power electronics for EV traction motor inverters are accelerating rapidly. Given the WLTP mission profile, where partial load dominates, SiC demonstrates an efficiency gain of approximately 4% over its silicon counterpart. It is most likely that Si and SiC will co-exist as both have their unique benefits. A Si/SiC hybrid solution is often considered for traction and secondary inverters where SiC is applied for rear-wheel drive, aiming to extend the range, whereas silicon is used in front-wheel drive to allow cost optimization.

- HybridPACK(TM) Drive CoolSiC(TM) G2, sintered, ceramic, direct cooling and on-chip temperature sensing- Gate driver board with EiceDRIVER(TM) G3- Logic board with AURIX(TM) MCU- Communication and development interface: CAN, USB, DAP- Software supports flexible operational modes - One-eye GUI interface enabling full customization- Current sensor vertically integrated into the busbar for optimized space and cost - Aluminum cooler in reference design, plastic cooler as optional- DC link capacitor

This reference kit provides users the ease of development for 48 V inverter control targeted for electric scooters and motorcycle traction motors. This kit is designed to drive a Permanent Magnet Synchronous Motor (PMSM) and Brushless DC Motor (BLDC). Its excellent thermal performance is supported by topside-cooled 80 V MOSFETs coming in the TOLT package with Infineon"s leading OptiMOS(TM) 5 technology. Furthermore, this new reference kit is the ideal solution for rapid prototyping while minimizing R& D efforts and time to market.

In this technical white paper, we will look at the role of traction inverters and how they are evolving within the changing landscape of electric vehicles. We will also consider new semiconductor technologies that are driving advanced development and many of the challenges that need to be considered when designing traction inverters.Download now

With the growing market of electrical vehicles, the industry has put forward more requirements for the performance of charging piles. This e-learning will show you that the emergence of CoolSiC(TM) MOSFETs has improved the charging pile industry to make the EV charger smaller, faster and with higher efficiency.

In this online course you will learn about cost-optimized, but highly efficient electric vehicles charging solutions based on IGBT and CoolMOS(TM), and explore Infineon"s wide portfolio that supports every

segment of the EV charging application.

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