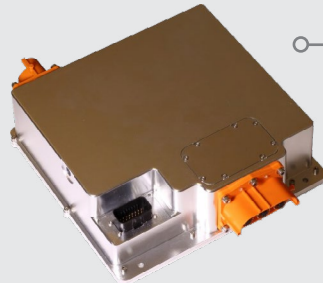


180kW SiC MOSFET-BASED TRACTION MOTOR INVERTER PLATFORM

DYNO-READY FUNCTIONAL SAFETY CAPABLE INVERTER PLATFORM

The 180 kW SiC MOSFET based traction inverter is a dyno-ready functional safety capable platform jointly developed by Wolfspeed, NXP and Vepco. The system can operate from a battery voltage of 350V to 650V and is capable of peak current levels of up to 420A. Wolfspeed's latest C3M 1200V 13mOhm SiC MOSFET's are packaged in an industry standard six-in-one style package to help achieve a power density of 26kW/L. NXP's GD3100 gate driver provides the high gate drive currents needed by SiC MOSFET's along with lightning fast short circuit protection.

The functional safety capable gate driver coupled with a powerful NXP safety microprocessor MPC5775E, NXP's F6500 safety SBC and NXP's CAN FD enable quicker time to market for developers of traction inverters. Our partner and system experts Vepco Technologies can provide advanced engineering services for customization and pre-production prototyping, and customization of this inverter platform.



180kW SiC Traction Inverter

SYSTEM SPECS

Motor	3-Phase PMSM
Rated Power	180kW
Top Speed	>15K rpm
DC Link	350V – 650V
Peak Efficiency	>97%
Power Density	26kW/l
System Capability	ASIL-C/D

KEY SYSTEM BENEFITS

Dyno ready system

Quick time to market

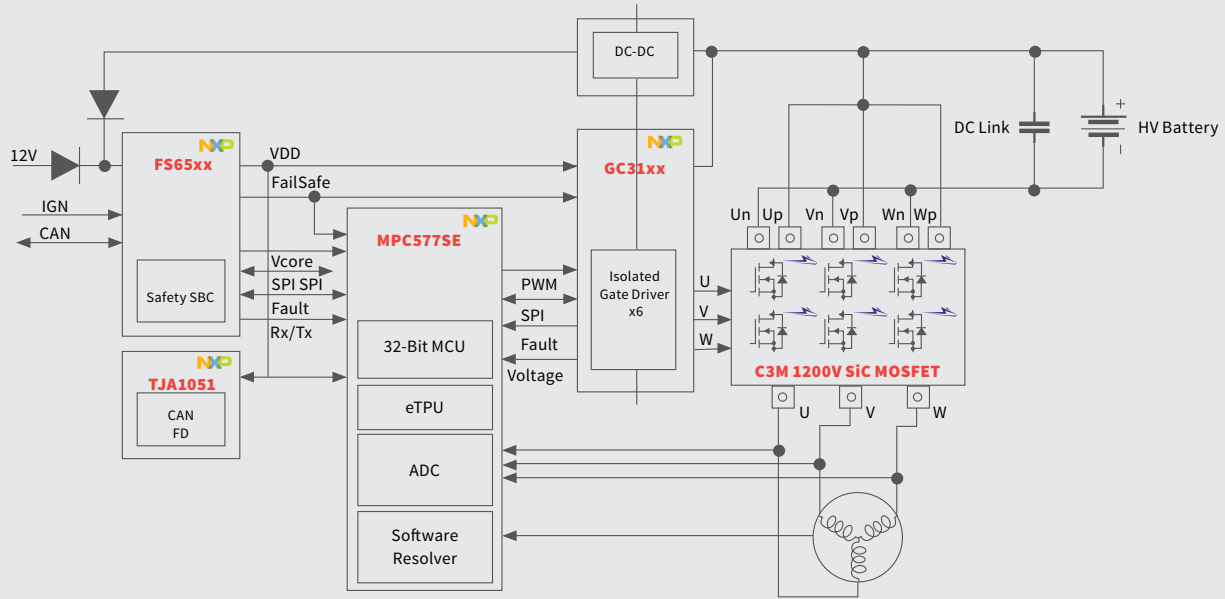
- Complete hardware design
- Firmware
- Functional safety analysis

Higher Range vs Si based inverter

High Power Density

180kW SiC INVERTER WITH FUNCTIONAL SAFETY

SYSTEM BLOCK DIAGRAM



400V INVERTER-LEVEL LOSS COMPARISON: SILICON VS SILICON CARBIDE

(same voltage, switching frequency and cooling)

