EV Traction Inverter Control Reference Design Gen 3

EV-INVERTERGEN3

Preproduction

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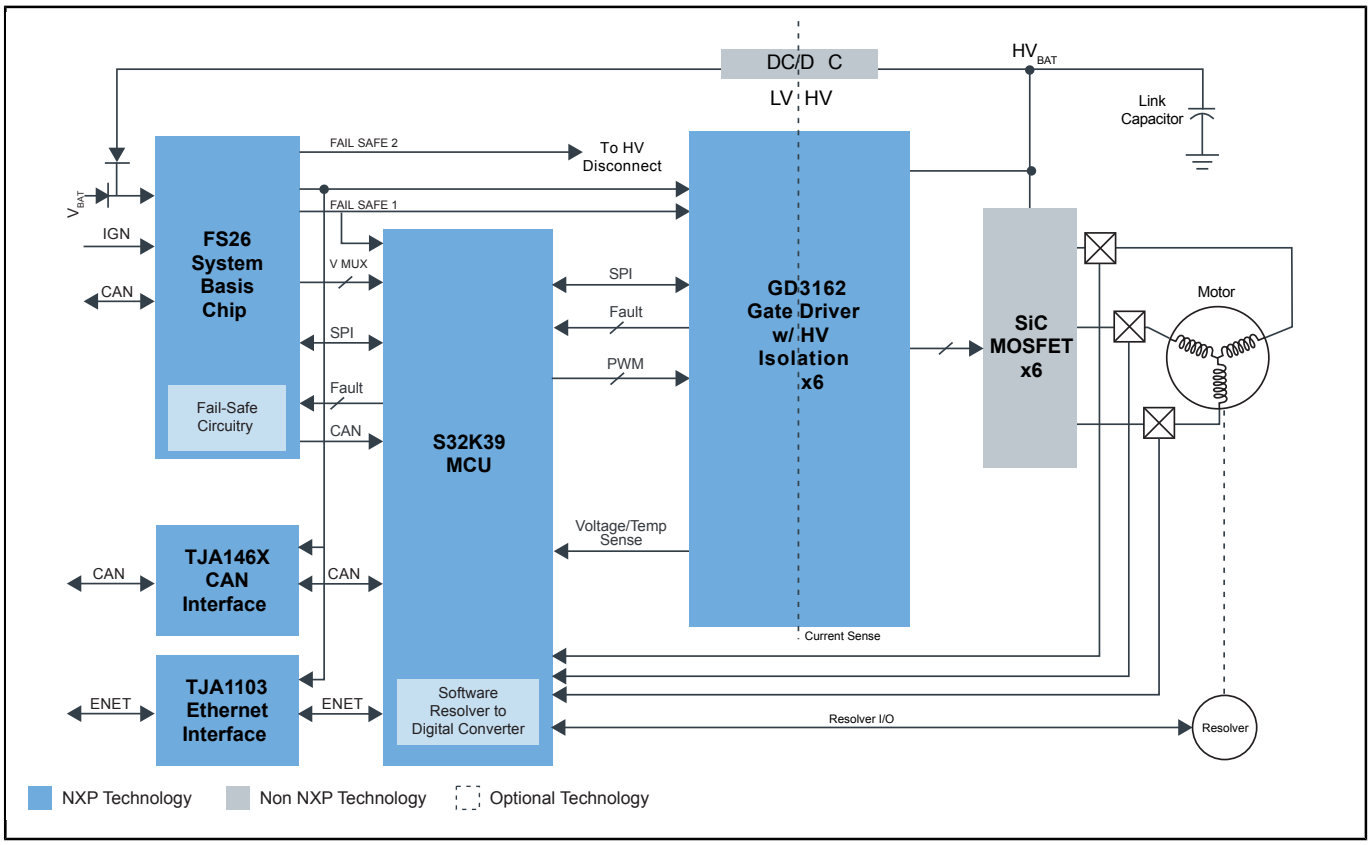
This third generation of automotive-grade EV power inverter control reference design is an ASIL D architecture for 800 V Silicon Carbide (SiC)-based traction inverter including following changes:

- Migration from MPC5775E MCU to S32K39 MCU with higher processing performance to execute low latency control loop
- Migration from FS65 SBC to FS26 SBC: latest generation of fit for ASIL D Safety System Basis chip with low power capability
- Migration from GD3160 gate driver to GD3162 with dynamic gate strength to improve efficiency for SiC MOSFET. Moreover, it includes new system features such as power device health monitoring and DC link discharge features
- Migration to the TJA146X transceiver with CAN Signal Improvement Capability (SIC) reducing signal ringing on network and enabling 5-8 Mbps running network
- Adding IEEE 802.3bw compliant 100BASE-T1 Ethernet interface TJA1103 PHY

Accelerating time-to-market: This reference design aims to accelerate, de-risk and simplify customer design by providing system solution collaterals such as optimized hardware, complete software offer and extensive documentation like system-wide application notes.

Designing with safety: The extensive safety documentation include an ASIL D in-context safety application that leverages the extensive NXP know-how and all safety capabilities provided by the HW and SW components.

EV Traction Inverter Architecture Block Diagram



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