PowerPAK® SO-10LR for Top-Side Cooling

Top-Cooled MOSFET Package Optimized for Heatsink or Cold Plate Integration

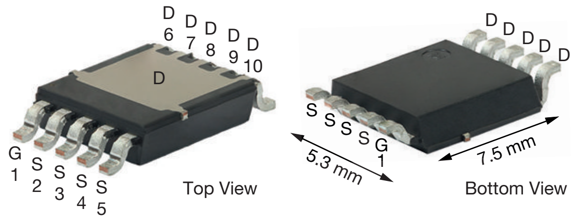
ADVANTAGE

Top-cooled package design enhances heat dissipation through the engine control unit housing, thereby reducing thermal stress on the PCB and enabling higher power density and reliability.

KEY PRODUCT FEATURES

- ✓ AEC-Q101 qualified
- ✓ Minimizes heat transfer into the PCB
- ✓ Enables higher power density
- ✓ Increases board-level reliability
- ✓ Low $R_{DS(on)}$ and R_{DS}-Q_g FOM increase efficiency
- ✓ Second source compatibility

PowerPAK® SO-10LR



RESOURCES

Product Page

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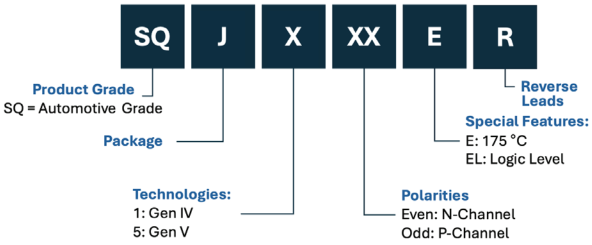
MARKETS AND APPLICATIONS

AUTOMOTIVE

- General purpose automotive applications
- Braking systems
- DC/DC converters
- E-boosters
- ECU management
- Electric power steering (EPS)
- Load and power disconnect switches
- Motor drives / inverters
- Power distribution units
- Power and load switching
- Zonal control units

PRODUCT NOMENCLATURE

Nomenclature for the PowerPAK® SO-10LR Package

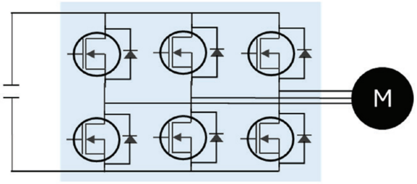


PowerPAK® SO-10LR for Top-Side Cooling

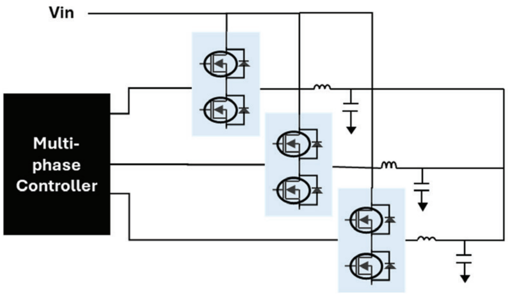
ADDITIONAL BENEFITS

- ~16.74 mm^2 exposed thermal pad on the top side directs heat dissipation through the heatsink or the ECU case
- Reduces heat transfer into the PCB and minimizes the need for thermal vias
- Lower system costs by simplifying the PCB design
- Gullwing leads optimized to achieve maximum relief for mechanical and thermal stresses
- Maximum junction temperature of 175 °C

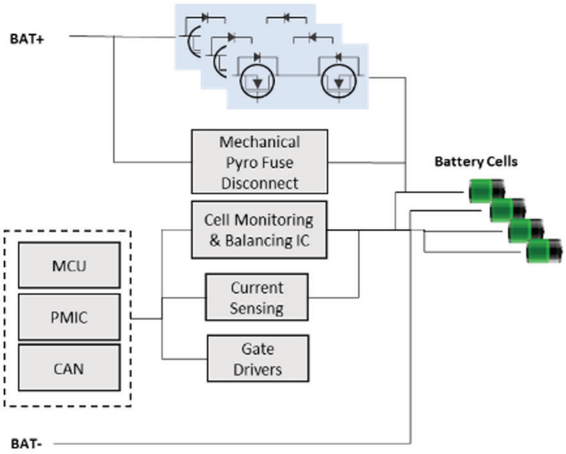
APPLICATION HIGHLIGHTS



Motor Drive Control
40 V to 150 V

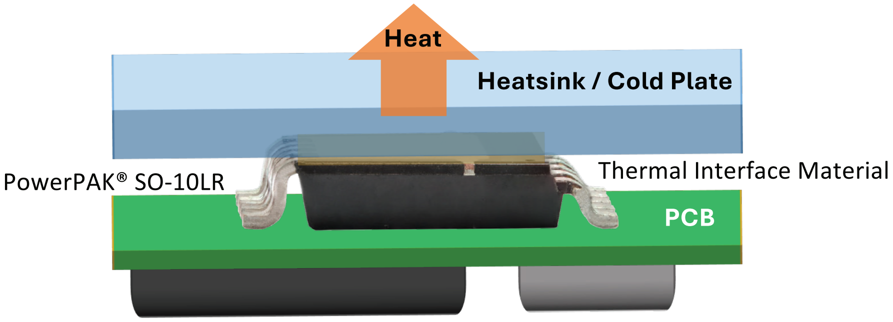


DC/DC Converters
40 V to 100 V



Battery Disconnect
40 V to 150 V

DIRECTLY COOLED BY THE HEATSINK OR ECU CASE



The exposed top pad of the PowerPAK® SO-10LR package provides a low resistance thermal path, enabling direct heat dissipation to the heatsink rather than through the PCB. With the PCB no longer serving as the primary thermal path, the vias can be eliminated. This simplification reduces PCB cost and complexity, thereby increasing power density.