HybridPACK™ DC6 Module

FS650R08A4P2

DC6i variant

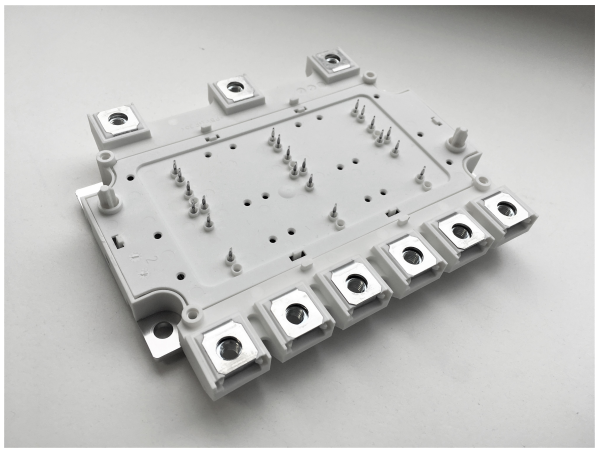
Final Data Sheet

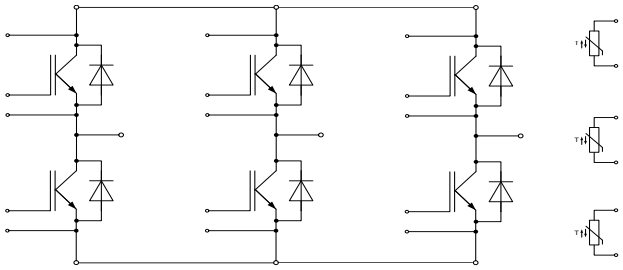
V3.0, 2020-05-06

Automotive High Power

1 Features / Description

HybridPACK™ DC6i module with EDT2 IGBT and Diode





V_{CES} = 750 V
I_C = 650 A

Typical Applications

- Automotive Applications
- Hybrid Electrical Vehicles (H)EV
- Motor Drives
- Commercial Agriculture Vehicles
- Optimized for automotive applications with DC link voltages up to 470 V

Electrical Features

- Blocking voltage 750V
- Low V_{CEsat}
- Low Switching Losses
- Low Qg and Crss
- Low Inductive Design
- $T_{vj\ op}$ = 150°C
- Short-time extended Operation Temperature $T_{vj\ op}$ = 175°C

Mechanical Features

- 2.5kV AC 1min Insulation
- High Creepage and Clearance Distances
- Compact design
- High Power Density
- Direct Cooled Base Plate with Ribbon Bonds
- Guiding elements for PCB and cooler assembly
- Integrated NTC temperature sensor
- PressFIT Contact Technology
- RoHS compliant

Description

The HybridPACK™ DC6i is a very compact six-pack module (750V/650A) optimized for hybrid and electric vehicles. The power module implements the new EDT2 IGBT generation, which is an automotive Micro-Pattern Trench-Field-Stop cell design optimized for electric drive train applications. The chipset has benchmark current density combined with short circuit ruggedness and increased blocking voltage for reliable inverter operation under harsh environmental conditions. The EDT2 IGBTs also show excellent light load power losses, which helps to improve system efficiency over a real driving cycle. The EDT2 IGBT was optimized for applications with switching frequencies in the range of 10 kHz.

The new HybridPACK™ DC6i power module family comes with mechanical guiding elements supporting easy assembly processes for customers. Furthermore, the press-fit pins for the signal terminals avoid additional time consuming selective solder processes, which provides cost savings on system level and increases system reliability. The direct cooled baseplate with ribbon bonds structure in the FS650R08A4P2 product shows superior thermal characteristics. Due to the high clearance & creepage distances, the module family is also well suited for increased system working voltages and supports modular inverter approaches.

Product Name	Ordering Code
FS650R08A4P2	SP001714512