

Product brief

HybridPACK™ DC6 family

Compact and scalable solution

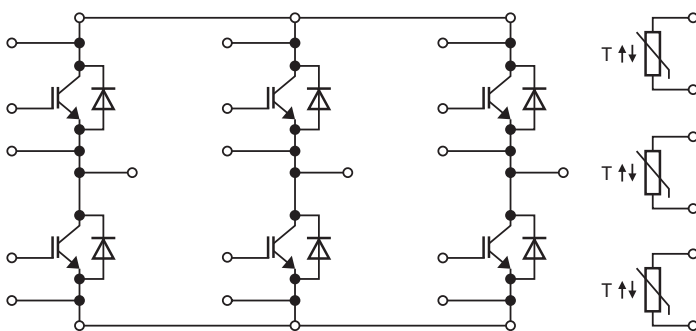
The HybridPACK™ DC6 family offers 3 variants of automotive qualified power modules for main inverters with a selection of different collector currents and blocking voltages: DC6 (FS400R07A3E3) 400 A/705 V, DC6 wave (FS400R07A3E3_H6) 400 A/705 V and DC6i (FS650R08A4P2) 650 A/750 V.

It is featuring our scalable baseplate structure for different cooling types: Flat baseplate without direct cooling structure and Wave (Ribbon Bond) for higher performance keeping a cost-efficient solution. While our HybridPACK™ 1 and HybridPACK™ DC6 and DC6 Wave modules are available for medium power inverters up to 80 kW, our HybridPACK™ DC6i even allows to enhance the power of your design up to 100 kW at 400 Arms and 500 V DC. Due to the similar footprint of the power modules it is possible to easily upgrade from HP1 to the DC6 family. In the case of an upgrade to the Hybridpack™ DC6i, only a small adoption of the gate driver is required due to different signal pinning in case. Moreover, the Hybridpack™ DC6i enables an easy and fast assembly via its PressFIT contact technology (for solder-less mounting) and mechanical guiding elements. Benchmark current density combined with short circuit ruggedness and increased blocking voltage lead to highest reliability. Additionally, it is featuring our EDT2 technology for excellent light load power losses and superior efficiency (20 percent improved compared to the IGBT3).

Applications

- > Main inverter
- > Hybrid and Battery Electric Vehicles
- > Commercial, Construction and Agriculture Vehicles

Block diagram



RoHS



Key features – FS650R08A4P2

Electrical

- > Blocking voltage 750 V
- > $T_{vj,op} = 150^{\circ}\text{C}$, short-time extended operation @ 175°C
- > $I_{c(nom)} = 650\text{ A}$
- > Optimized for around 10 kHz
- > 2.5 kV AC 1 min @ 50 Hz

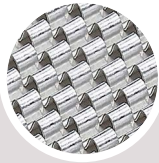
Mechanical

- > PressFIT pins for the signal terminals
- > Direct cooled base plate with Ribbon Bonds
- > Integrated NTC temperature sensor
- > RoHS compliant

Key benefits – FS650R08A4P2

- > Very **compact** and **cost efficient** inverter designs (25 percent smaller than HybridPACK™ Drive)
- > **Benchmark current density** (direct cooling via Ribbon Bond structure for improved heat dissipation)
- > **Superior efficiency** by EDT2 technology for excellent light load power losses (20 percent improved compared to IGBT3)
- > **Highest reliability** by short circuit ruggedness and increased blocking voltage
- > **Easy and fast assembly** through PressFIT contact technology (solder-less mounting)
- > Automotive qualified according **AQG 324**

HybridPACK™ DC6i FS650R08A4P2 – Upgrade path to DC6 family up to 100kW*



Direct cooling

> Improved heat dissipation through ribbon bond structure



25% smaller size than HybridPACK™ Drive

> Enables very compact inverters



Benchmark current density combined with short circuit ruggedness and increased blocking voltage

> Highest reliability



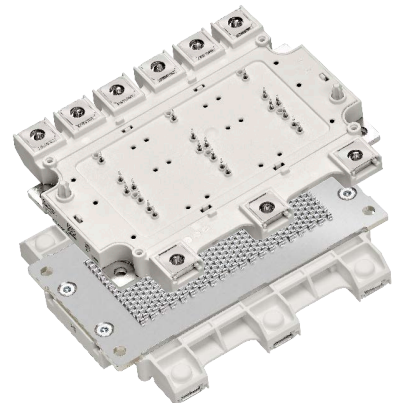
Press-fit for reduced mounting time of signal pins

> Reduced total cost

HybridPACK™ DC6

HybridPACK™ DC6 Wave

HybridPACK™ DC6i



Product family

Type	Description	Electrical characteristics	OPN
FS400R07A3E3	HybridPACK™ DC6	705 V / 400 A	FS400R07A3E3BOMA1
FS400R07A3E3_H6	HybridPACK™ DC6 Wave	705 V / 400 A	FS400R07A3E3H6BPSA1
FS650R08A4P2	HybridPACK™ DC6i	750 V / 650 A	FS650R08A4P2BPSA1

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