

Product Brief

HybridPACK™ Drive

FS820R08A6P2B (lead type with PinFin baseplate)

The HybridPACK™ Drive is a very compact power module optimized for hybrid and electric vehicle main inverter applications (xEV). The lead type FS820R08A6P2B (820 A/750 V) is a six-pack module optimized for 150 kW inverters. The power module implements the new EDT2 IGBT chip generation, which is an automotive Micro-Pattern Trench-Field-Stop cell design. 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 significantly the system efficiency over a real driving cycle. The chipset was optimized for switching frequencies in the range of 10 kHz.

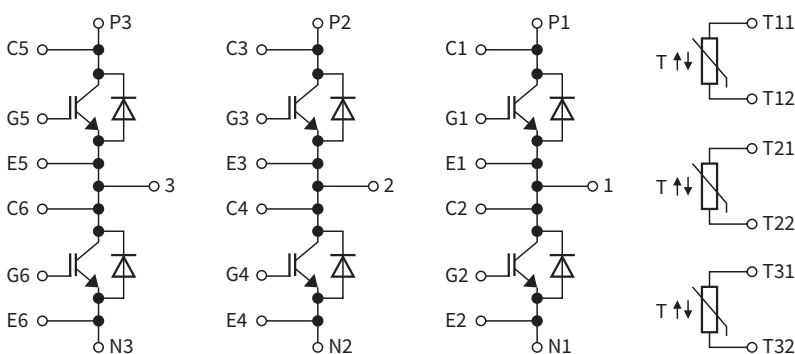
The new power module family HybridPACK™ Drive comes with mechanical guiding elements supporting easy assembly processes for customers. Furthermore, the press-fit pins for the signal terminals avoids time consuming selective solder processes, which provides cost savings on system level and increases system reliability.

The lead type FS820R08A6P2B has a PinFin baseplate for an optimized direct water cooling and thus highest current density. A product derivate with a flat baseplate FS660R08A6P2FB enables cost savings in case lower inverter performances are suitable.

The HybridPACK™ Drive power module comes with high clearance and creepage distances and makes this new module family also well suited for increased system working voltages. Furthermore, the flexible signal pin and power tab concept allows further product variants in the future and thus support best modular inverter approaches.

Key features

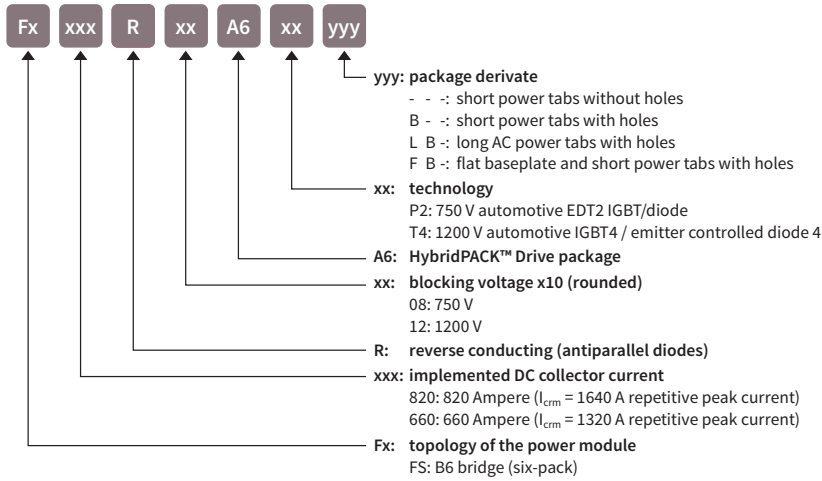
- > Benchmark current density and improved light load power losses for extended EV driving ranges
- > 750 V EDT2 IGBT and diodes chipset for up to $T_{vj} = 175^{\circ}\text{C}$ switching operation
- > Extreme low conduction losses
- > Single digit stray inductance and smooth, efficient switching behavior
- > Short circuit ruggedness up to $T_{vj} = 175^{\circ}\text{C}$ for reliable inverter operation under extreme conditions
- > Press-fit signal pins
- > Mechanical guiding elements for efficient and cost-saving inverter assembly
- > Lead type with PinFin baseplate (direct fluid cooling)
- > Flat baseplate module derivate for optimized cost at lower inverter performance



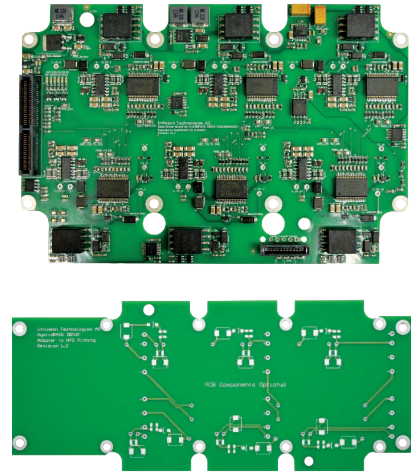
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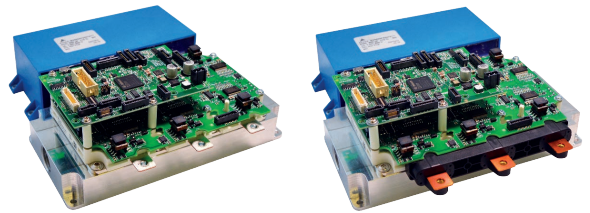
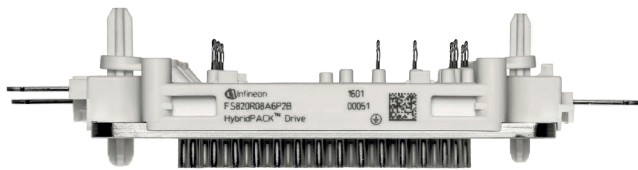
Type designation tree



Evaluation tools for lab testing purpose



Lead type FS820R08A6P2B (PinFin) side view



Evaluation tools (Not regular products. Designed for laboratory testing only.)

Type	Description	Ordering code
HPDRIVE TO HP2 PCB	Adapter PCB HybridPACK™ Drive to HybridPACK™ 2 gate driver boards	SP001292068
EVAL-6ED100HPDRIVE-AS	Gate driver evaluation board for FSxxxR08A6P2xx with EiceDriver Sense/Lite/Boost	SP001386654
HYBRID KIT DRIVE	Inverter evaluation kit with HybridPACK™ Drive FS820R08A6P2B, EiceDriver Sense/Boost, AURIX™ μ Controller, TDK capacitor	SP001464622
HYBRID KIT DRIVE SENSE	Hybrid kit drive with FS820R08A6P2LB (long AC tabs) and LEM current sensor	SP001464626

Product summary

Type	Description	Ordering code	Product status
FS820R08A6P2B	(Lead type) HybridPACK™ Drive 820 A/750 V with PinFin baseplate	SP001499708	In development
FS820R08A6P2	HybridPACK™ Drive 820 A/750 V with PinFin baseplate, power tabs without hole	SP001499702	In development
FS660R08A6P2FB	HybridPACK™ Drive 660 A/750 V with flat baseplate (derivate for lower inverter power)	Coming soon	In development

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