

Product brief

HybridPACK™ DSC S2

High power density meets proven package

Infineon's new HybridPACK™ DSC S2 expands the HybridPACK™ DSC (Double Sided Cooling) module family, of which over 3.5 Million modules are already being used today in various hybrid and plug-in hybrid vehicles since the introduction in 2017. The HybridPACK™ DSC family consists out of three variants of automotive qualified power modules:

- > DSC S1 (FF400R07A01E3_S6): 705 V/400 A/Half Bridge
- > DSC S2 (FF450R08A03P2): 750 V/450 A/Half Bridge
- > DSC L (FS200R07A02E3_S6): 705V/200 A/Full Bridge

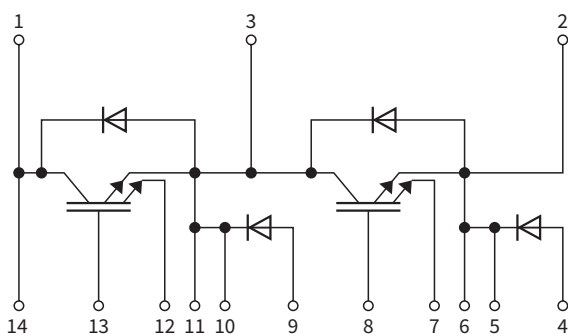
The HybridPACK™ DSC S2 offers superior thermal performance and enables highest power density combined with short circuit ruggedness and increased blocking voltage for highest reliability. Additionally, it is featuring Infineon's EDT2 technology for excellent light load power losses and superior efficiency. It targets inverter designs up to 75 kW (Infineon estimation).

Thanks to the integrated isolation the modules can be directly attached to a cooler without external isolation. The integrated on-chip current and temperature sensors allow a continuous monitoring on chip state and thus enabling faster reaction time for die protection.

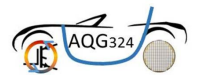
Applications

- > Main inverter
- > Hybrid and battery electric vehicles
- > Commercial, construction and agriculture vehicles

Block diagram



RoHS



Key features FF450R08A03P2

Electrical

- > $I_{c,nom}$ 450 A
- > Blocking voltage 750 V
- > $T_{vj,op} = 150^{\circ}C$, short-time extended operation @ $175^{\circ}C$
- > On-chip Current Sensor
- > On-chip temperature sensor
- > Low inductive design
- > Low switching losses

Mechanical

- > Double sided cooling package
- > 2.5 kV AC 1 min insulation
- > RoHS compliant

Key benefits FS650R08A4P2

- > **High current density** enabling very **compact** and **cost efficient** inverter designs
- > **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
- > **Superior thermal performance**
- > Optimized for automotive applications with **DC link voltages up to 450 V** and gate driver voltage level of -8 V/15 V
- > Automotive qualified according **AQG 324**

HybridPACK™ DSC S2

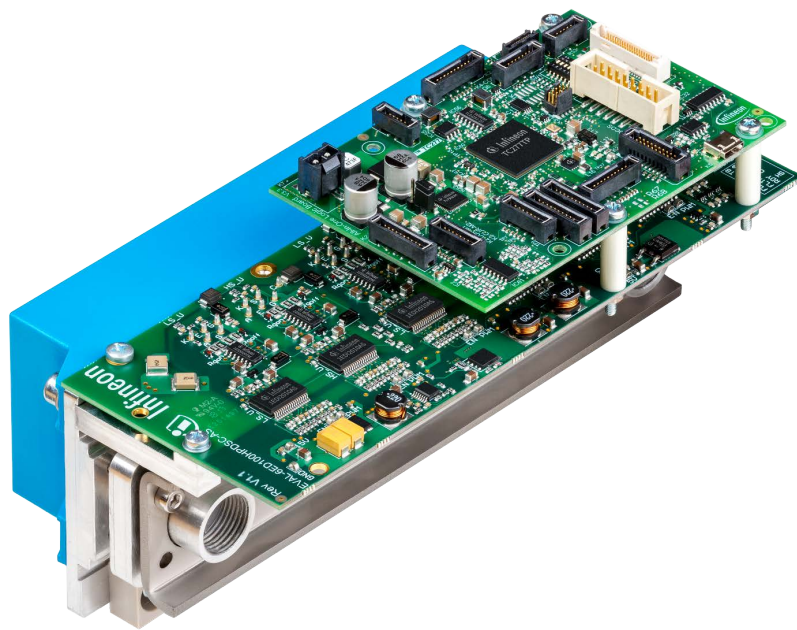
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Evaluation KIT HYBRIDPACK™ DSC S2

The new Evaluation Kit for HYBRIDPACK™ DSC S2 is based on the Evaluation Kit for HybridPACK™ DSC S1 (HybridKIT™ DSC), offering an easy switch and scalability.

More details on: www.infineon.com/cms/en/product/evaluation-boards/kit-hybridpack-dsc-s2/

- › All-in-one: Provides complete set up with power stage, gate driver board and logic board
- › Supports inverter designers for a faster time-to-market
- › Enables a fast evaluation of the IGBT module
- › Offers a reference design



Product family

Type	Description	Characteristics	OPN
FF450R08A03P2	HybridPACK™ DSC S2 (EDT2)	750 V/450 A/Half Bridge	FF450R08A03P2XKSA1
FF400R07A01E3_S6	HybridPACK™ DSC S1 (IGBT3)	705 V/400 A/Half Bridge	FF400R07A01E3S6XKSA2
FS200R07A02E3_S6	HybridPACK™ DSC L (IGBT3)	705 V/200 A/Full Bridge	FS200R07A02E3S6BKSA2
KIT HYBRIDPACK DSC S2	Evaluation Kit for FF450R08A03P2 including Power stage, Logic Board and Gate Driver Board		KITHYBRIDPACKDSCS2TOBO1

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