



## Product brief

# Automotive CoolSiC™ EasyPACK™ 1B

## Robust SiC-Technology meets flexible half bridge concept

The new EasyPACK™ 1B, 7.33 mΩ halfbridge module FF08MR12W1MA1\_B11A combines the new CoolSiC™ Automotive Trench-MOSFET 1200V technology, a NTC temperature sensor and the PressFIT contact technology. With the full automotive qualification, the field of applications for CoolSiC™ is now extended to high voltage automotive applications with high efficiency and switching frequency requirements, such as HV/HV DC-DC step-up converters, multiphase inverters and fast-switching auxiliary drives like fuel-cell compressors.

The trench MOSFET structure enables a higher cell density compared to planar structures, leading to best-in-class figure of merit. As a result, trench MOSFETs can be operated at lower gate-oxide field strengths for higher reliability. Infineon's first-generation CoolSiC™ automotive MOSFET technology is optimized for lowest possible conduction losses, especially under partial load conditions. Combined with the low switching losses of silicon carbide MOSFETs, this enables losses in inverter operation to be reduced by around 60 percent compared to silicon IGBTs.

In addition to optimizing performance, Infineon focuses on reliability, thus testing CoolSiC automotive MOSFETs with the aim of achieving high short-circuit, cosmic ray, and gate-oxide robustness, which is key for designing efficient and reliable high-voltage applications in electric cars.

Moreover, the FF08MR12W1MA1\_B11A product layout allows low inductive designs. Additionally, Infineon's PressFIT contact technology enables solder-less mounting for our customers, saving time and money for their assembly process.

### Applications

- › Hybrid and battery electric vehicles
- › Commercial, construction and agriculture vehicles
- › HV/HV DC-DC converter
- › Main inverter
- › Auxiliary drives

### Key features

- › High gate threshold voltage preventing parasitic turn-on ( $V_{th} = 4.4 \text{ V}$ )
- › IGBT compatible driving voltage ( $V_{GS} = -5/+15 \text{ V}$ )
- › Intrinsic diode with low reverse recovery
- ›  $R_{DS(on)} = 7.33 \text{ m}\Omega$  (typical)
- › Low stray inductance 5 nH
- › Blocking voltage 1200 V
- › Low switching losses
- › Low  $Q_g$  and  $C_{rss}$
- ›  $T_{vjop} = 150^\circ\text{C}$
- › Integrated NTC temperature sensor
- › RoHS compliant

### Key benefits

- › **Easy system assembly** (PressFIT contact technology for solder-less mounting)
- › **Easy design** (Integrated module solution with optimized thermal management)
- › **Superior reliability** (gate oxide and cosmic ray robustness)
- › **Flexibility** (half bridge concept for flexible inverter design)
- › **Automotive qualified** according to AQC 324



# Automotive CoolSiC™ EasyPACK™ 1B

Robust SiC-Technology meets flexible half bridge concept

## Our customers chose Easy power module because of



**Easy system assembly**  
Easy mounting (PressFIT™)



**Easy design**  
Integrated module solution with optimized thermal management



**Reliability**  
Integrated isolation



**Flexibility**  
Platform for different topologies

## Our customers chose Infineon Easy module because of



**High volume manufacturing experience**  
Over 50 million EasyPACK™ sold



**Seamless traceability**  
Given for every individual module



**Quality excellence**  
Quality clearly seen as industry benchmark by automotive world

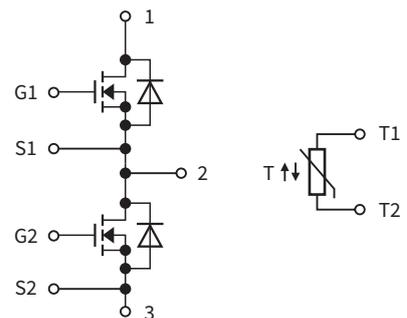


**Technical advance and support**  
Market innovator with extensive local technical support

## Order information

Type	Description	Electrical characteristics	OPN
FF08MR12W1MA1_B11A	EasyPACK™ 1B	1200 V/150 A/7.33 mΩ	FF08MR12W1MA1B11ABPSA1

## Block diagram



Published by  
Infineon Technologies AG  
81726 Munich, Germany

© 2020 Infineon Technologies AG.  
All Rights Reserved.

### Please note!

This Document is for information purposes only and any information given herein shall in no event be regarded as a warranty, guarantee or description of any functionality, conditions and/or quality of our products or any suitability for a particular purpose. With regard to the technical specifications of our products, we kindly ask you to refer to the relevant product data sheets provided by us. Our customers and their technical departments are required to evaluate the suitability of our products for the intended application.

We reserve the right to change this document and/or the information given herein at any time.

### Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

### Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.