

Reference board for 1200 V CoolSiC™ MOSFET in TO-263-7

REF-SIC-D2PAK-MC

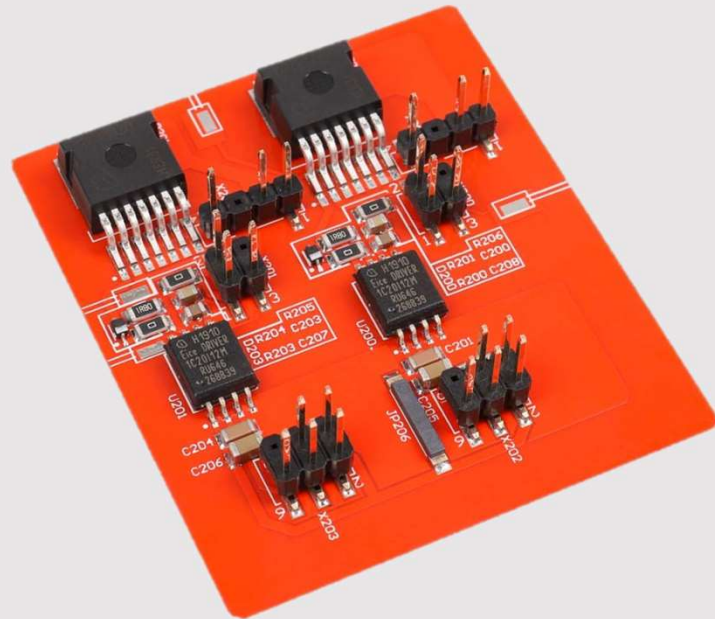
November 2023



Reference board for 1200 V CoolSiC™ MOSFET for motor control and drives



REF-SIC-D2PAK-MC - Top side



Main Features

- **IMBG120R030M1H**: 1200 V CoolSiC™ Silicon Carbide (SiC) Trench MOSFET
- **1EDC20I12MH** 1200V high side gate driver IC
 - Active Miller Clamping function
 - Core-less transformer based galvanic isolation
 - 0 V turn-off gate voltage
- Utilizing Insulated Metal Substrate (IMS)
- All components Surface Mounted Devices (SMD)

Customer Benefits

- None parasitic turn on with miller clamping
- Very low switching losses
- Benchmark gate threshold voltage, $V_{GS(th)} = 4.5 \text{ V}$
- Robust body diode for hard commutation
- Sense pin for optimized switching performance

Applications

Motor control



Industrial Drives



Drives



Ordering information

Sales Code: **REF-SIC-D2PAK-MC**

OPN: **REFSICD2PAKMCTOBO1**

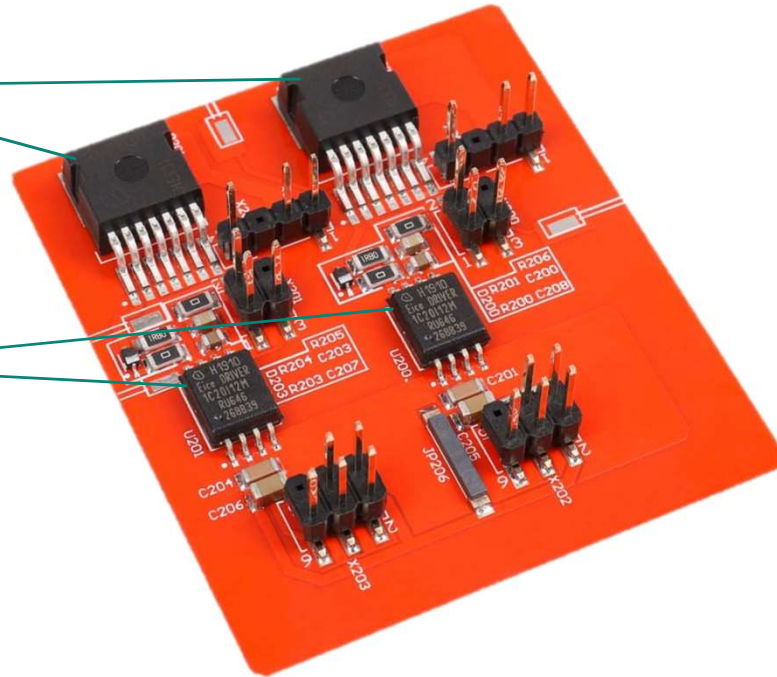
Reference board for 1200 V CoolSiC™ MOSFET for motor drives and controls



Infineon products

IMBG120R030M1H
CoolSiC™ MOSFET

1EDC20I12MH
EiceDRIVER™ Gate driver



Features

1200 V 30 mΩ SiC MOSFET in TO-263-7 package

1200 V high side gate driver IC with galvanic isolation, active Miller and short circuit clamping

Infineon's 1200 V CoolSiC™ MOSFET - optimized to combine performance with reliability



Key features

3 μ s short-circuit withstand time

Benchmark gate threshold voltage, $V_{GS(th)} = 4.5$ V

Robust against parasitic turn-on, 0 V turn-off gate voltage can be applied

Package creepage and clearance distances, > 6.1 mm

Sense pin for optimized switching performance

IMBG120R030M1H

The **CoolSiC™ 1200 V** SiC Trench MOSFET in TO-263-7 package combines the low power losses of CoolSiC™ technology with .XT interconnection technology in a new 1200V optimized SMD package. Hence, enabling top efficiency and passive cooling potential in applications such as drives, chargers and industrial power supplies.

- › Higher efficiency, frequency and power density
- › Reduction of cooling effort, system complexity and costs
- › SMD enables direct interaction into PCB, with natural convection cooling without extra heatsink



Infineon's 1200 V EiceDRIVER™ with galvanic isolation, Miller clamp and short circuit clamping



Key features

Active Miller Clamping function

Recognized under UL1577 with
 $V_{ISO} = 3000 \text{ V}$ for 1 s

1200V coreless transformer
isolated gate driver ICs

300 mil wide-body package for 8
mm creepage distance

2 A rail-to-rail outputs

1EDC20I12MH

EiceDRIVER™ 1200 V high side gate driver IC with typical 4.4 A source and 4.1 A sink currents, active Miller and short circuit clamping for IGBT Modules. The wide-body DSO-8 package offers UL-certified galvanic isolation. With its characteristics it is ideally suited for AC and brushless DC motor drive, High voltage DC/DC-converter and DC/AC-inverter, industrial heating and welding, SMPS, UPS-systems and solar applications.



Key featured products of the reference board design

REF-SiC-D2PAK-MC



| Sales Code | Product Type | Link to product page |
|----------------|----------------------------|---------------------------------------|
| IMBG120R030M1H | 1200 V CoolSiC™ MOSFET | <u>IMBG120R030M1H</u> |
| 1EDC20I12MH | EiceDRIVER™ gate driver IC | <u>1EDC20I12MH</u> |

Disclaimer

Product images are for illustrative purposes only and may differ from the actual products.

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