



**THE DATASHEET OF
IDDD12G65C6XTMA1**





Silicon carbide CoolSiC™ Schottky diodes

Selection guide

www.infineon.com/sic

Silicon carbide

Improve efficiency and solution costs

Silicon carbide (SiC) devices belong to the so-called wide bandgap semiconductor group, which offers a number of attractive characteristics for high voltage power semiconductors when compared to commonly used silicon (Si). In particular, the much higher breakdown field strength and thermal conductivity of silicon carbide allow developing devices which by far outperform the corresponding silicon-based ones, and enable efficiency levels unattainable otherwise. Infineon's portfolio of SiC devices covers 600 V and 650 V to 1200 V Schottky diodes as well as the revolutionary CoolSiC™ MOSFET.

Advantages of silicon carbide over silicon devices

The differences in material properties between silicon carbide and silicon limit the fabrication of practical silicon unipolar diodes (Schottky diodes) to a range up to 100-150 V, with a relatively high on-state resistance and leakage current. In SiC, Schottky diodes can reach a much higher breakdown voltage. Infineon is the world's first SiC discrete power supplier. Infineon offers products up to 1200 V in discrete packages and up to 1700 V in modules.

Features

- > No reverse-recovery charge
- > Purely capacitive switching
- > High operating temperature ($T_{j,max} = 175^{\circ}\text{C}$)

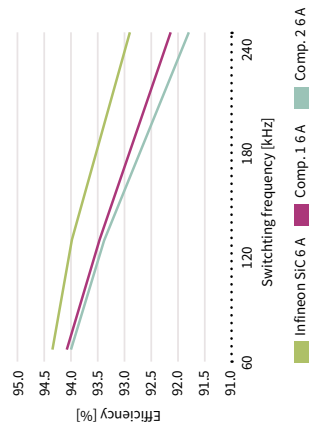
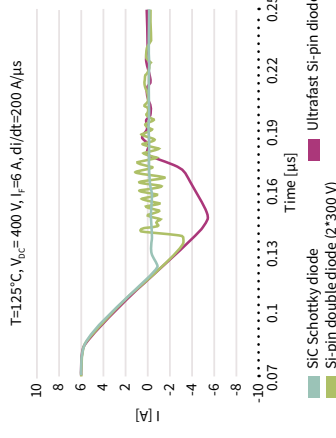
Advantages

- > Low turn-off losses
- > Reduction of CoolMOS™ SJ MOSFET or IGBT turn-on loss
- > Switching losses independent from load current, switching speed and temperature

Benefits

- > System efficiency improvement compared to Si-based diodes
- > Reduced cooling requirements
- > Enabling higher frequency/increased power density
- > Higher system reliability due to lower operating temperature
- > Reduced EMI

- > Server power supply
- > Motor drives
- > Telecom power supply
- > Solar
- > UPS
- > EV charging
- > Energy storage
- > PC power supply
- > Lighting
- > CAV
- > Industrial welding



Infineon is the world's first SiC discrete power supplier. Our 10 years of experience enable Infineon to deliver the world's most reliable SiC discrete power products. With over 10 years pioneering experience, Infineon's latest CoolSiC™ Schottky diodes offer the highest quality, efficiency and reliability.

Silicon carbide portfolio

CoolSiC™ Schottky diodes 650 V G6

ACTIVE & PREFERRED

I_F [A]	TO-220 R2L	Double DPAK
4	IDH04G65C6	IDDD04G65C6
6	IDH06G65C6	IDDD06G65C6
8	IDH08G65C6	IDDD08G65C6
10	IDH10G65C6	IDDD10G65C6 *
12	IDH12G65C6	IDDD12G65C6 *
16	IDH16G65C6	IDDD16G65C6
20	IDH20G65C6	IDDD20G65C6



*For more information on the product, contact our product support

CoolSiC™ Schottky diodes 600 V G3

ACTIVE

I_F [A]	TO-220 R2L
3	IDH03SG60C
4	IDH04SG60C
5	IDH05SG60C
6	IDH06SG60C
8	IDH08SG60C
9	IDH09SG60C
10	IDH10SG60C
12	IDH12SG60C

*For more information on the product, contact our product support

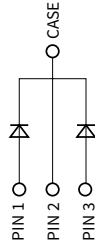
CoolSiC™ Schottky diodes 650 V G5

ACTIVE

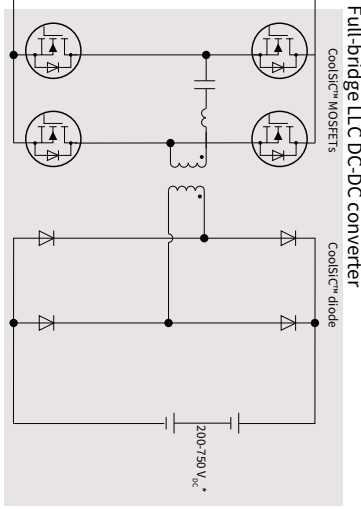
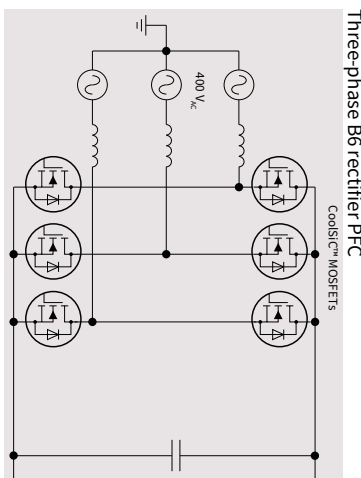
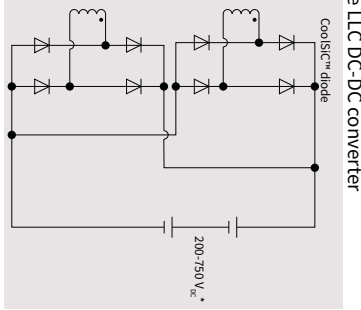
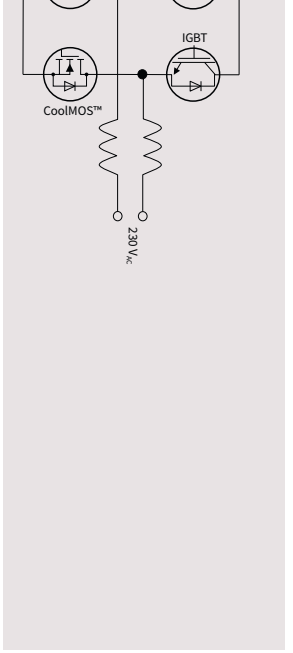
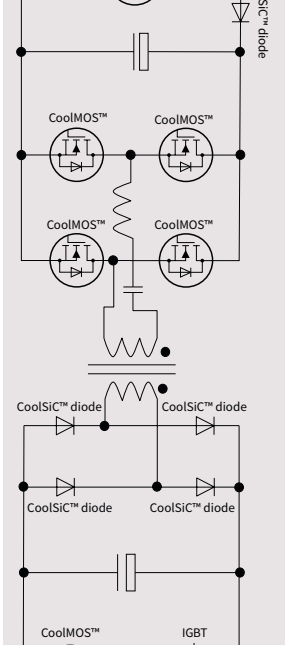
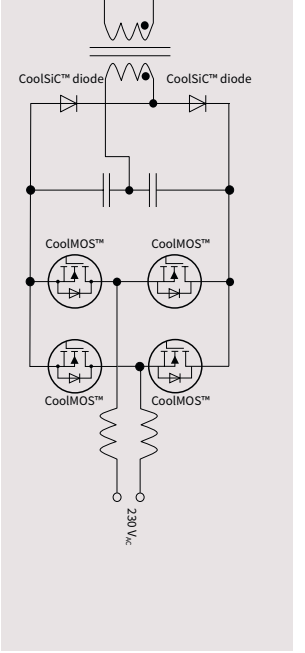
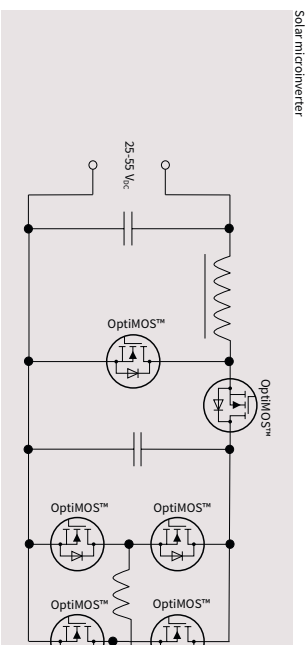
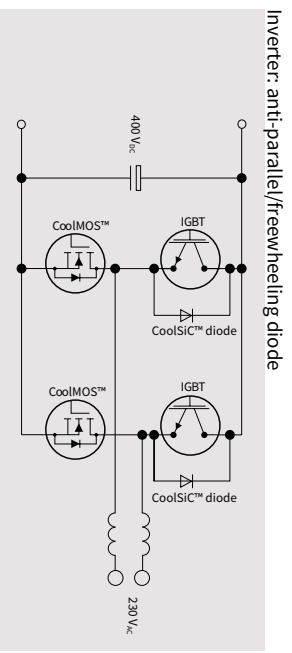
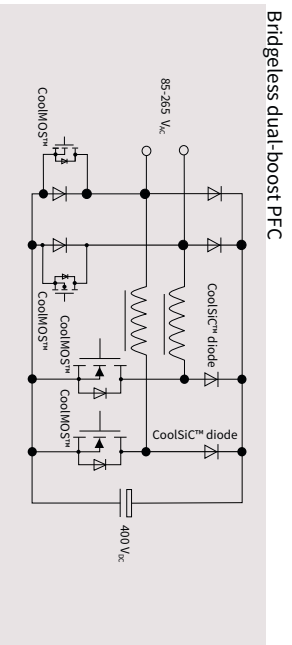
I_F [A]	TO-220 R2L	TO-247 Dual Die	D ² PAK R2L	ThinPAK 8x8
2	IDH02G65C5		IDK02G65C5	IDL02G65C5
3	IDH03G65C5		IDK03G65C5	
4	IDH04G65C5		IDK04G65C5	IDL04G65C5
5	IDH05G65C5		IDK05G65C5	
6	IDH06G65C5		IDK06G65C5	IDL06G65C5
8	IDH08G65C5		IDK08G65C5	IDL08G65C5
9	IDH09G65C5		IDK09G65C5	
10	IDH10G65C5	IDW10G65C5	IDK10G65C5	IDL10G65C5
12	IDH12G65C5	IDW12G65C5	IDK12G65C5	IDL12G65C5
16	IDH16G65C5	IDW16G65C5		
20	IDH20G65C5	IDW20G65C5B	IDW20G65C5	
24		IDW24G65C5B		
30/32		IDW32G65C5B	IDW30G65C5	
40		IDW40G65C5B	IDW40G65C5	



*„B“ in product name refers to dual die
with the common-cathode configuration.



and topologies



Where to buy

Infiniteon distribution partners and sales offices:
www.infineon.com/wheretobuy



Mobile product catalog
Mobile app for iOS and Android.

Service hotline

Infiniteon offers its toll-free 0800/4001 service hotline as one central number, available 24/7 in English, Mandarin and German.

- > Germany 0800 951 951 951 (German/English)
- > China, mainland 4001 200 951 (Mandarin/English)
- > India 000 800 4402 951 (English)
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- > Direct access +49 89 234-0 (interconnection fee, German/English)

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