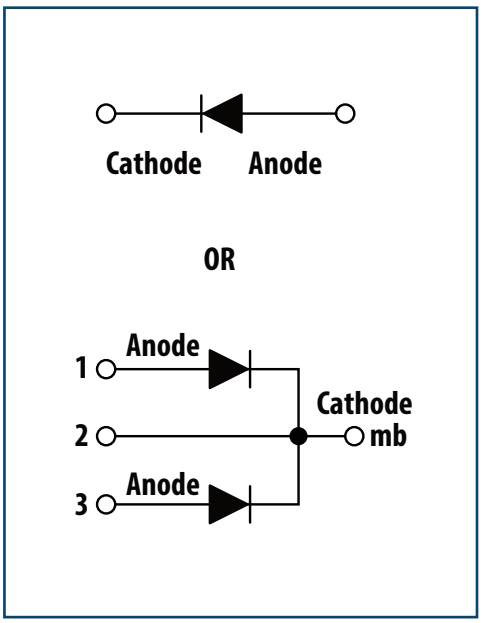
NEW PRODUCT BRIEF

Bourns® Silicon Carbide (SiC) Schottky Barrier Diodes – Model BSD Series

INTRODUCTION

Bourns introduced its first Silicon Carbide (SiC) Schottky Barrier Diodes (SBDs) line designed to provide excellent current carrying capacity. These advanced wide band gap diodes are ideal solutions for high frequency applications such as AC-DC, DC-DC, Switched-Mode Power Supplies (SMPS), photovoltaic inverters and PC computing applications. These applications have a common requirement for high peak forward surge capability, low forward voltage drop, reduced thermal resistance and low power loss, enabling them to meet higher higher efficiency targets.

The BSD Series models are available in commercial grade in an assortment of package options to match a variety of design needs, including TO220-2, TO247-2, TO247-3, TO252, TO263 and DFN8x8.



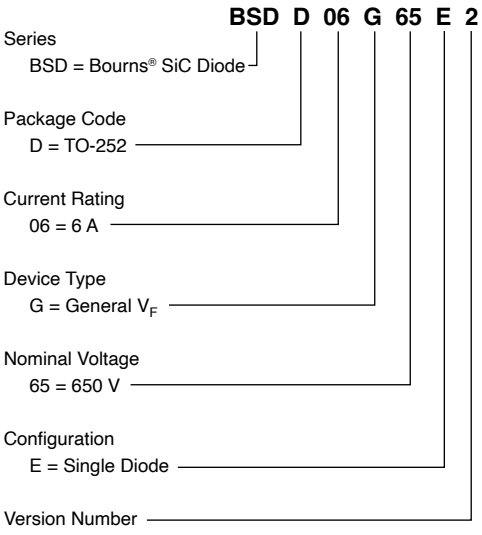
MARKET TRENDS

SiC Schottky Barrier diodes are increasingly used in various applications due to their efficiency and high breakdown voltage advantages compared to traditional silicon diodes. The SiC diode market is expected to grow significantly over the next few years due to the escalating demand for power electronics in next-generation applications such as electric vehicles (EVs), renewable energy systems, and industrial motor drives.

FEATURES

- High efficiency
- Low forward voltage drop
- Low reverse leakage current
- High peak forward surge current (I_{FSM})
- Reduced EMI
- Maximum operating junction temperature (T_J) up to 175 °C
- Epoxy compound is flame retardant to the UL 94V-0 standard
- High power integration with dual diodes that help reduce PCB form factor
- RoHS compliant*, Pb free and halogen free**

HOW TO ORDER EXAMPLE



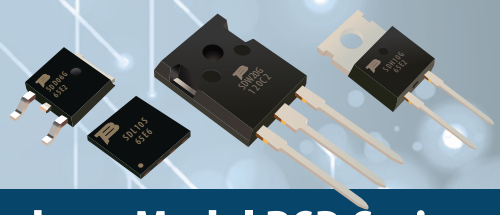
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
**Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

APPLICATIONS

Offering the higher efficiency, faster switching speeds and high temperature tolerance required by a broad range of industries and applications, SiC SBDs are expected to be widely adopted in automotive, telecom, industrial, aerospace and defense, and in renewable energy markets.

The sixteen models released by Bourns target some of today's highest volume applications such as solar inverters, motor drives, Uninterruptible Power Supplies (UPS), base stations, smart grids and other designs that demand high efficiency power conversion. Additional Bourns® SiC SBD benefits for these applications include reduced size, weight and losses that enable designers to achieve an advanced degree of system-level miniaturization.

NEW PRODUCT BRIEF



Bourns® Silicon Carbide (SiC) Schottky Barrier Diodes – Model BSD Series

Product Overview

Model Number	Package	$I_{F(AV)}$ Max. (A)	$I_{O(AV)}$ Max. (A)	T_J Max. (°C)	V_{RRM} Max. (V)	Q_r Typ. (nC)	V_F Typ. @ T_J = 25 °C, $I_{F(av)}$ (V)
BSDD06G65E2	TO252	6	—	175	650	9	1.45
BSDD05G120E2	TO252	5	—	175	1200	11	1.42
BSDD08G65E2	TO252	8	—	175	650	12	1.45
BSDD10G65E2	TO252	10	—	175	650	14.5	1.45
BSDD10S65E6	TO252	10	—	175	650	24	1.29
BSDB10S65E6	TO263	10	—	175	650	24	1.29
BSDL10S65E6	DFN8x8	10	—	175	650	24	1.29
BSDH06G65E2	TO220-2	6	—	175	650	9	1.45
BSDH08G65E2	TO220-2	8	—	175	650	12	1.45
BSDH10G65E2	TO220-2	10	—	175	650	14.5	1.45
BSDH10G120E2	TO220-2	10	—	175	1200	22	1.42
BSDH10S65E6	TO220-2	10	—	175	650	24	1.29
BSDV10G120E2	TO247-2	10	—	175	1200	22	1.42
BSDW20G65C2	TO247-3	—	20	175	650	14.5	1.45
BSDW20S65C6	TO247-3	—	20	175	650	24	1.29
BSDW20G120C2	TO247-3	—	20	175	1200	22	1.42

SiC Schottky Barrier Diode Product Portfolio

V_{RRM} $I_{(AV)}$ Type	TO220-2	TO247-2	TO247-3	TO252 (DPAK)	TO263 (DPAK)	DFN8x8
650 V, 6 A, General V_F	BSDH06G65E2	—	—	BSDD06G65E2	—	—
650 V, 8 A, General V_F	BSDH08G65E2	—	—	BSDD08G65E2	—	—
650 V, 10 A, General V_F	BSDH10G65E2	—	—	BSDD10G65E2	—	—
650 V, 10 A, Low V_F	BSDH10S65E6	—	—	BSDD10S65E6	BSDB10S65E6	BSDL10S65E6
1200 V, 5 A, General V_F	—	—	—	BSDD05G120E2	—	—
1200 V, 10 A, General V_F	BSDH10G120E2	BSDV10G120E2	—	—	—	—
650 V, 20 A, General V_F (Dual)	—	—	BSDW20G65C2	—	—	—
650 V, 20 A, Low V_F (Dual)	—	—	BSDW20S65C6	—	—	—
1200 V, 20 A, General V_F (Dual)	—	—	BSDW20G120C2	—	—	—

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