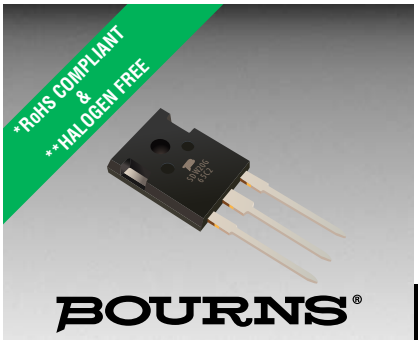


BOURNS®

Features

- High efficiency with low power loss
- Low reverse leakage current
- High peak forward surge current (I_{FSM})
- Reduced EMI
- Maximum operating T_J up to 175 °C
- Epoxy compound is flame retardant to the UL 94V-0 standard
- RoHS compliant*, Pb free and halogen free**

Applications

- Switched-Mode Power Supplies (SMPS)
- Power Factor Correction (PFC)
- PV inverters
- DC-DC converters
- Telecommunications
- Motor drives

BSDW20G65C2 Silicon Carbide Schottky Diode

General Information

Bourns® Model BSDW20G65C2 Silicon Carbide (SiC) Schottky Diode provides excellent current carrying capacity. This advanced, high efficiency power component is suitable for applications such as converters requiring a high peak forward surge capability, a very low forward voltage drop, reduced thermal resistance and low power loss.

Bourns offers Silicon Carbide Schottky Diodes for rectification applications in assorted styles. The Model BSDW20G65C2 is available in a TO247-3 package, well-suited for high frequency Switched-Mode Power Supplies.

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Absolute Maximum Ratings (@ T_J = 25 °C Unless Otherwise Noted)

Parameter	Symbol	BSDW20G65C2	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Average Forward Current (Square Wave Pulse, D = 0.5, T_{mb} ≤114 °C, dual diodes conducting, Fig. $Zth_{(J-mb)}$)	$I_{F(AV)}$	20	A
Repetitive Peak Forward Current (Square Wave Pulse, D = 0.5, T_{mb} ≤119 °C, t_p = 25 µs, per diode, Fig. $Zth_{(J-mb)}$)	I_{FRM}	20	A
Non-Repetitive Peak Forward Surge Current (10 ms, Single Sine-Wave Pulse)	I_{FSM}	60	A
Total Power Dissipation (dual diodes conducting, per device)	P_{tot}	157.8	W
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature	T_{STG}	-55 to +175	°C

Thermal Characteristics

Parameter		Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Thermal Resistance	Junction to Ambient	$R_{θ(J-A)}$	In ambient air		60		°C/W
	Junction to Mounting Base	$R_{θ(J-mb)}$	Transient thermal impedance curves, per diode		1.37	1.75	
			Transient thermal impedance curves, per device		0.75	0.95	

Electrical Characteristics (@ T_J = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 10 A, T_J = 25 °C, per diode I_F = 10 A, T_J = 175 °C, per diode		1.45 2.0	1.7 2.3	V
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C, per diode V_R = 650 V, T_J = 175 °C, per diode		0.5 25	50 250	µA
Recovered Charge	Q_r	dI_F/dt = 500 A/µs, V_R = 400 V, I_F = 10 A, per diode		14.5		nC
Diode Capacitance	C_d	V_R = 1 V, f = 1 MHz, per diode		328		pF
Capacitance Stored Energy	E_c	V_R = 400 V		3.8		µJ

WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*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.

Specifications are subject to change without notice.

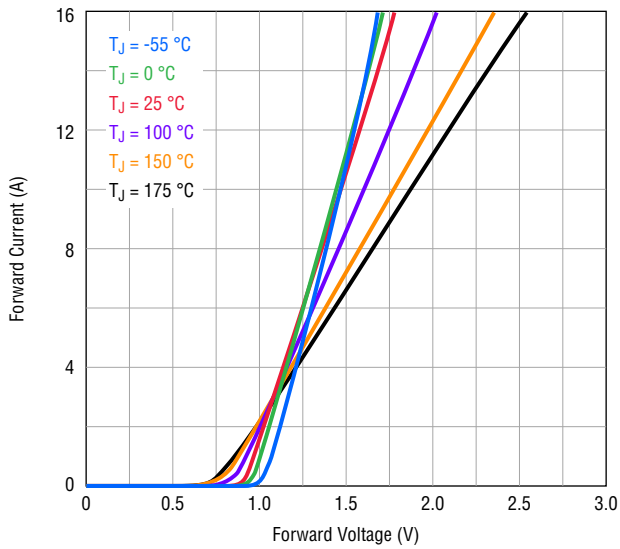
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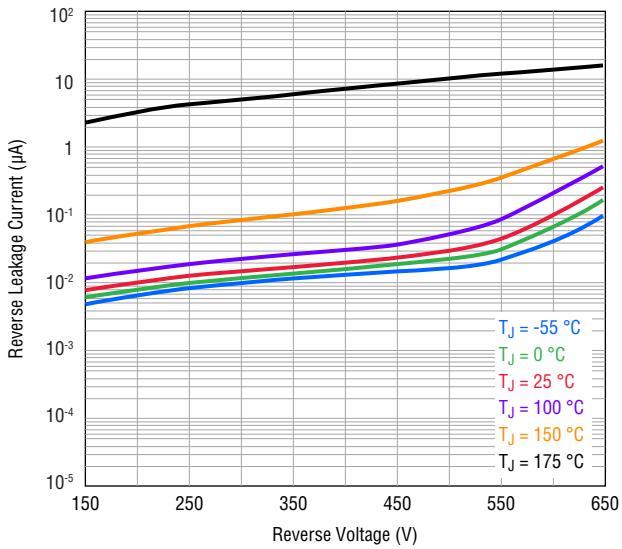
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Rating and Characteristic Curves (T_J = 25 °C unless otherwise noted)

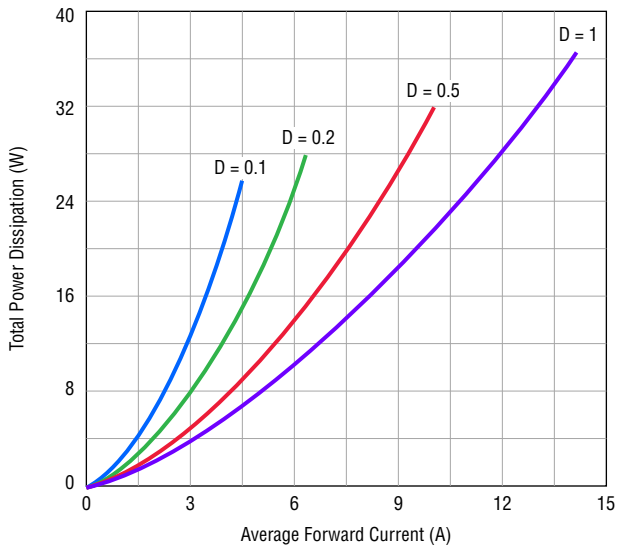
Typical Forward Characteristics, per Diode



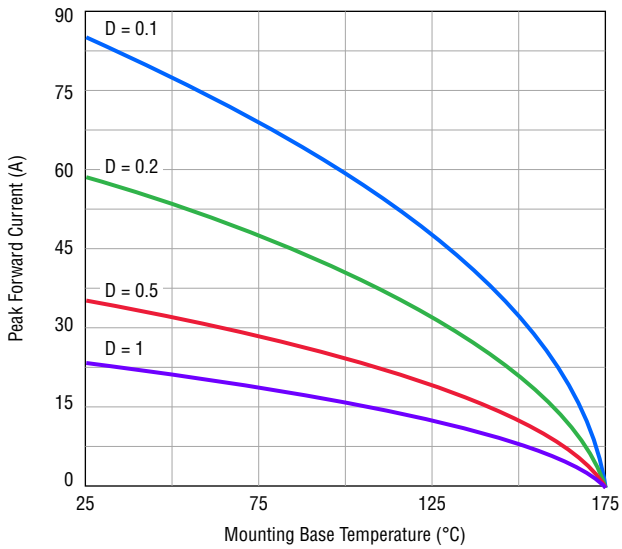
Typical Reverse Characteristics, per Diode



Forward Power Dissipation, per Diode



Forward Current Derating, per Diode

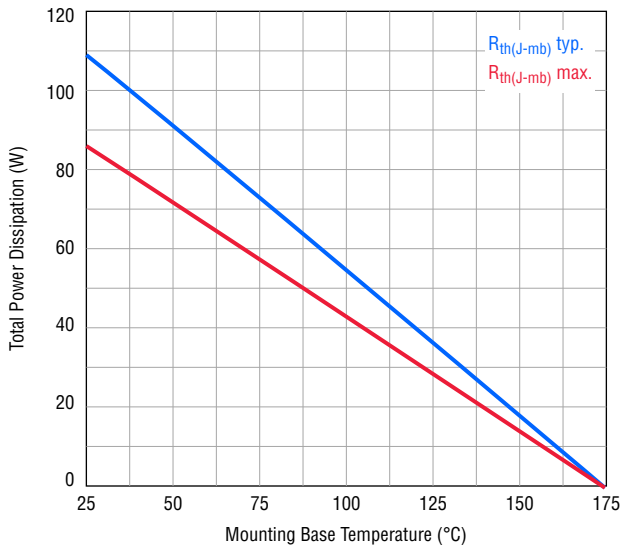


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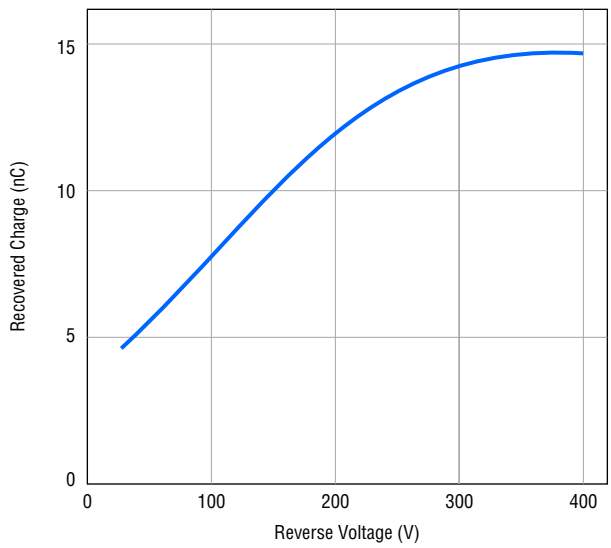
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Rating and Characteristic Curves (Continued)

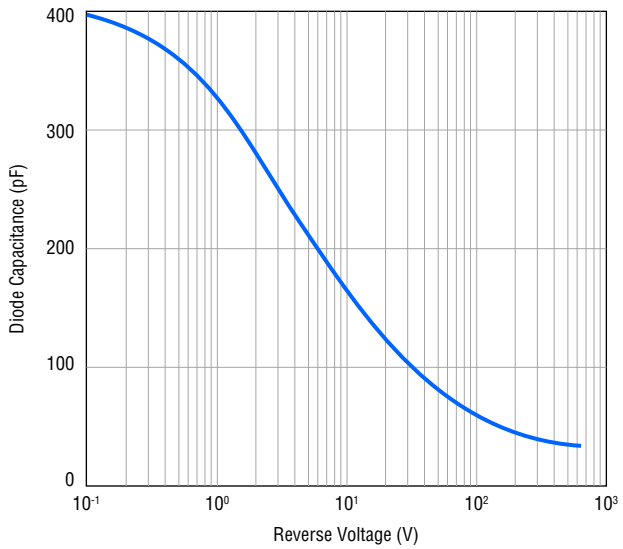
Power Derating, per Diode



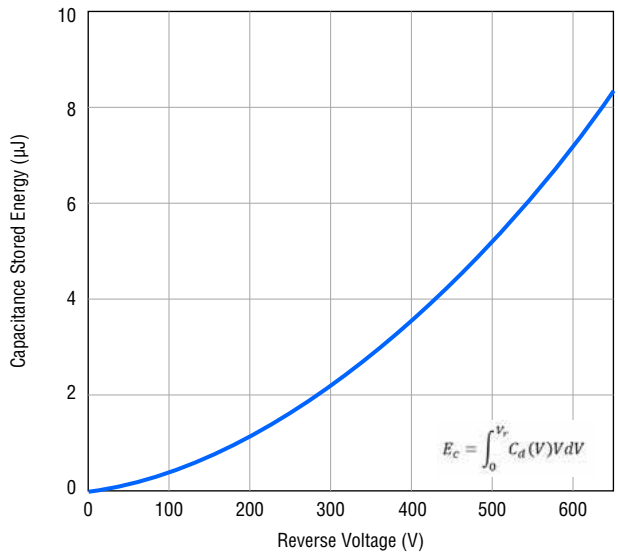
Typical Recovered Charge vs V_R, per Diode



Typical Diode Capacitance vs V_R, per Diode



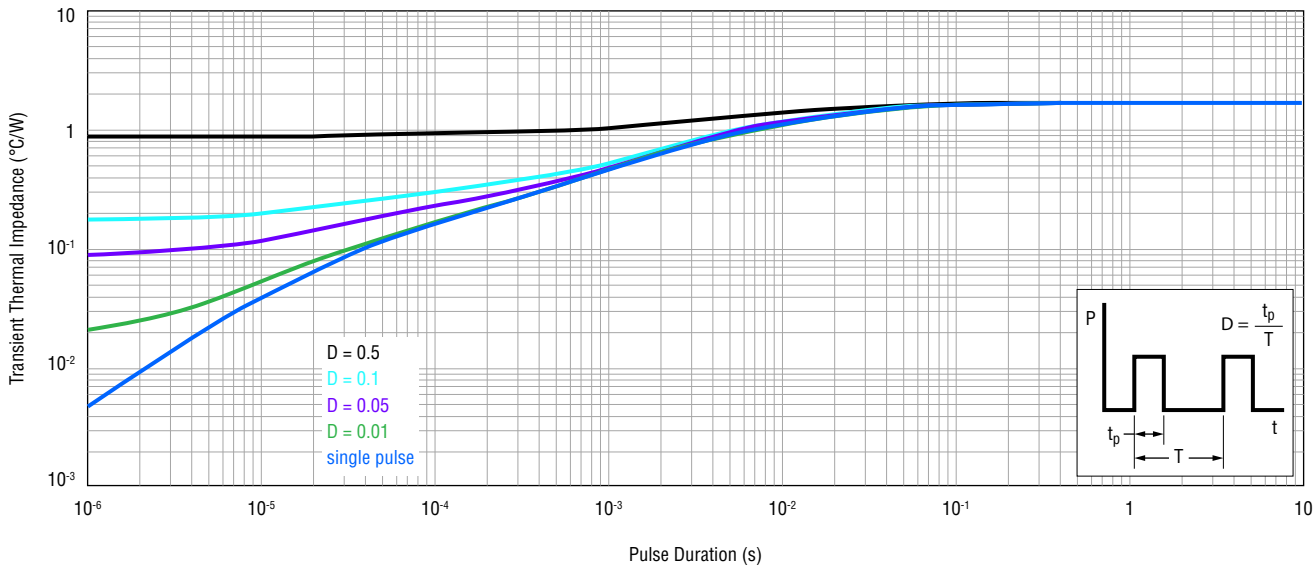
Typical Capacitance Stored Energy vs V_R, per Diode



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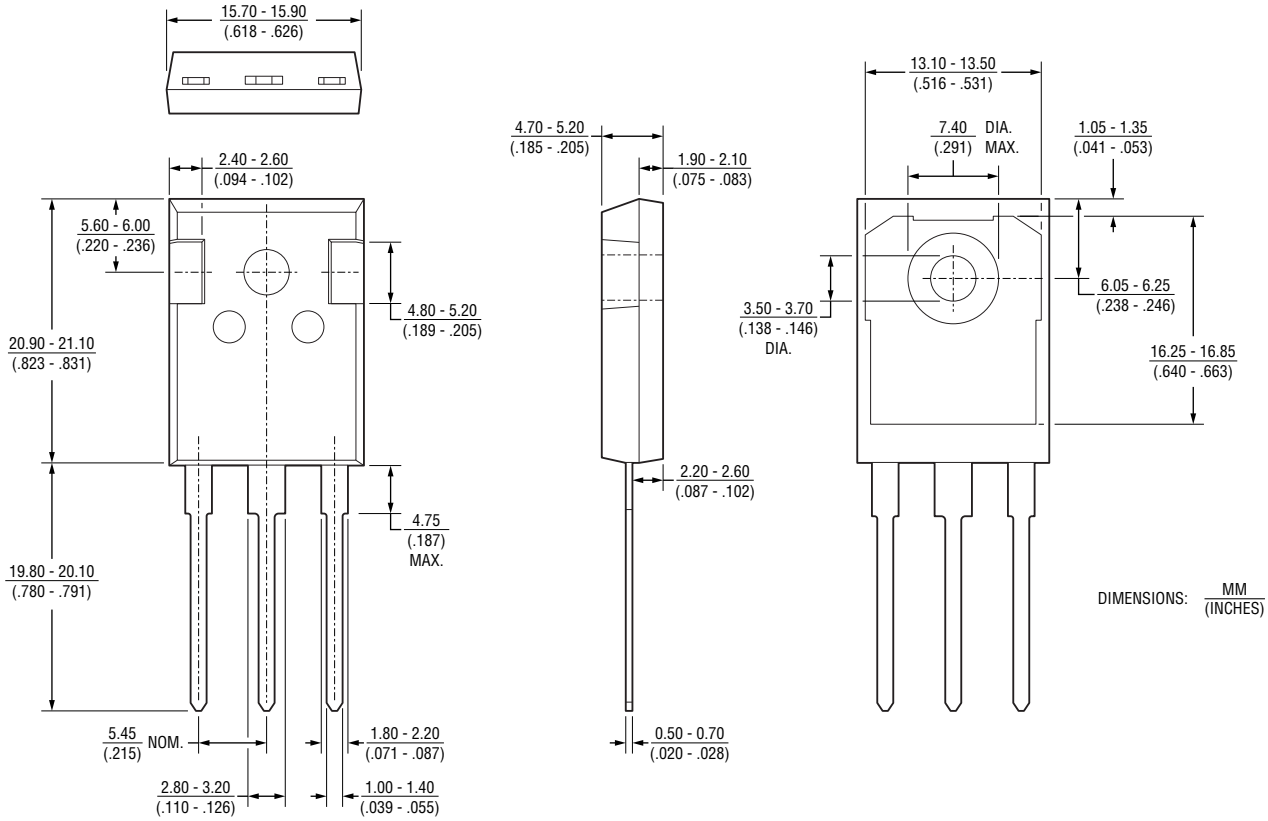
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Transient Thermal Impedance, $Zth_{(J\text{-}mb)}$, per Diode



Product Dimensions

Package Version: TO247N-3



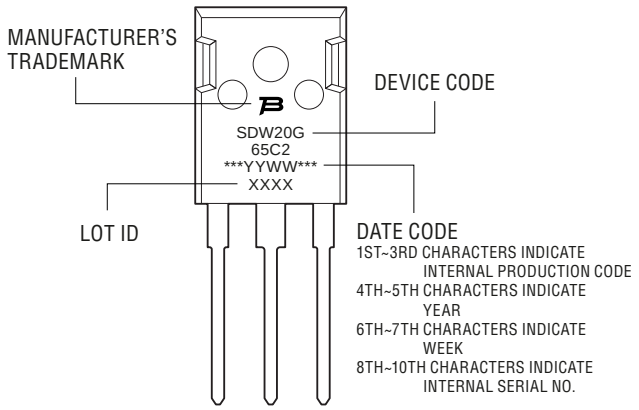
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BSDW20G65C2 Silicon Carbide Schottky Diode

BOURNS®

Typical Part Marking



Environmental Specifications

ESD Classification (HBM).....3B

How to Order

B SD W 20 G 65 C 2

Manufacturer
B = Bourns

Product Type
SD = SiC Diodes

Package Code
W = TO247-3

Current Rating
20 = 20 A

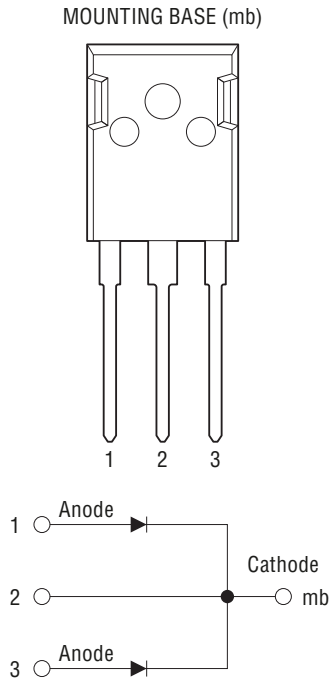
Device Type
G = General V_F

Nominal Voltage
65 = 650 V

Configuration
C = Common Cathode

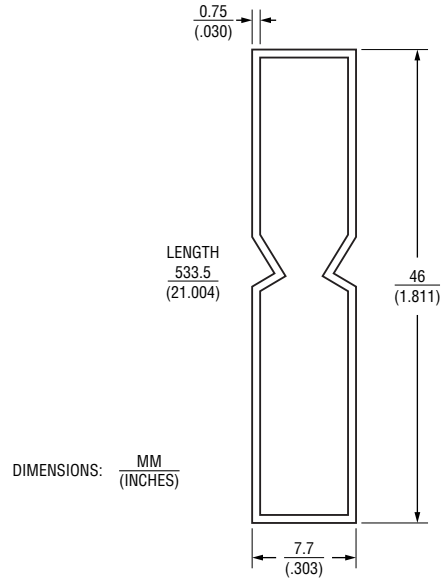
Version Number

Pin Information



Packaging Specifications

30 pcs./tube



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