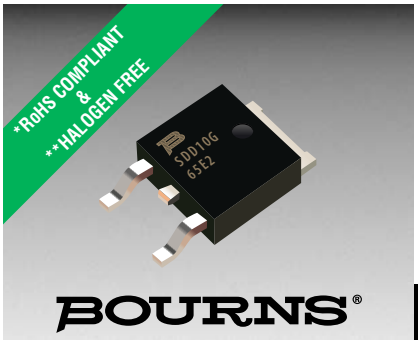


BOURNS®

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

BSDD10G65E2 Silicon Carbide Schottky Diode

General Information

Bourns® Model BSDD10G65E2 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 BSDD10G65E2 is available in a TO252 (DPAK) 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	BSDD10G65E2	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Average Forward Current (Square Wave Pulse, D = 0.5, T_{mb} ≤140 °C, Fig. $Zth_{(J-mb)}$)	$I_{F(AV)}$	10	A
Repetitive Peak Forward Current (Square Wave Pulse, D = 0.5, T_{mb} ≤140 °C, t_p = 25 µs, Fig. $Zth_{(J-mb)}$)	I_{FRM}	20	A
Non-Repetitive Peak Forward Surge Current (10 ms, Single Sine-Wave Pulse)	I_{FSM}	55	A
Total Power Dissipation	P_{tot}	136.3	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	$R_{\theta(J-A)}$	In ambient air		50		°C/W
	Junction to Mounting Base	$R_{\theta(J-mb)}$	Transient thermal impedance curves		0.9	1.1	

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 I_F = 10 A, T_J = 175 °C		1.45 2.0	1.7 2.3	V
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C V_R = 650 V, T_J = 175 °C		0.5 25	50 250	µA
Recovered Charge	Q_r	dI_F/dt = 500 A/µs, V_R = 400 V, I_F = 10 A		14.5		nC
Diode Capacitance	C_d	V_R = 1 V, f = 1 MHz		323		pF
Capacitance Stored Energy	E_c	V_R = 400 V		3.4		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.

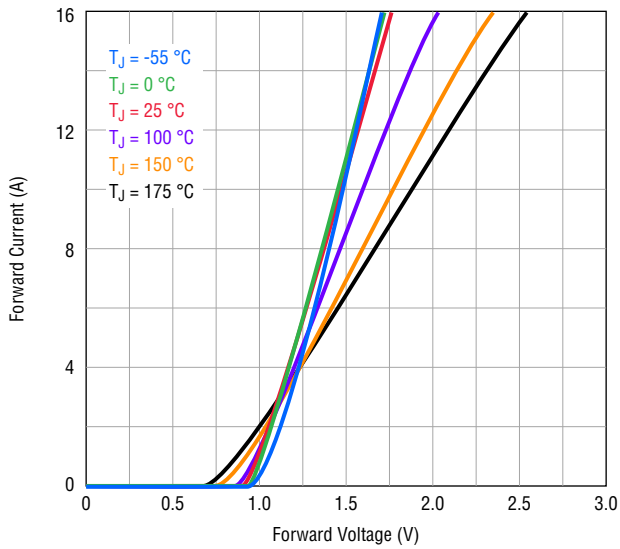
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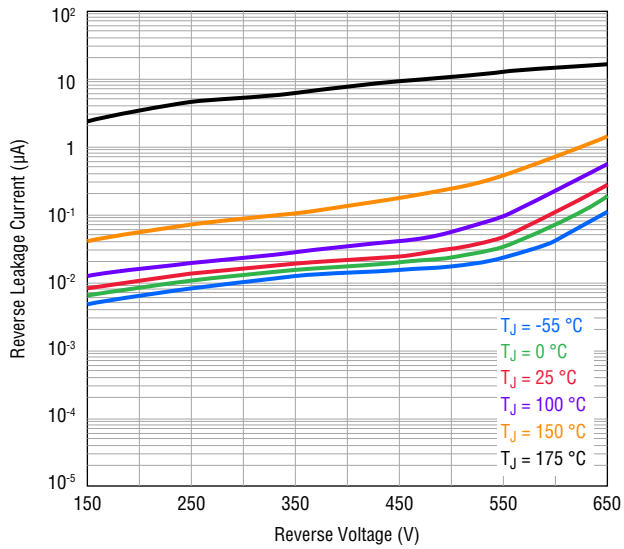
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Rating and Characteristic Curves (T_J = 25 °C unless otherwise noted)

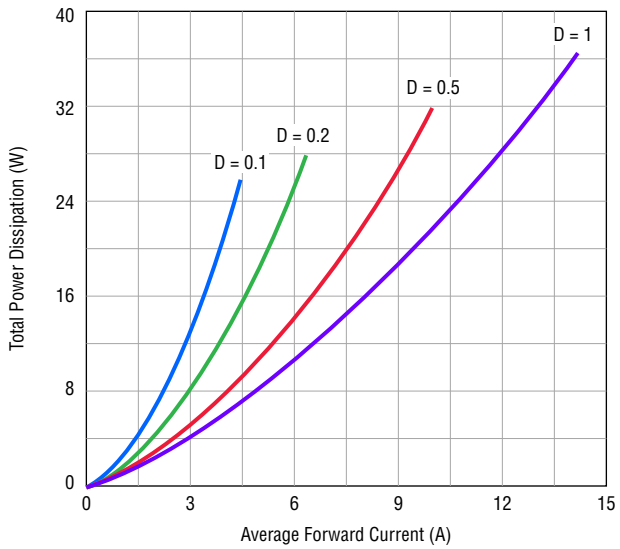
Typical Forward Characteristics



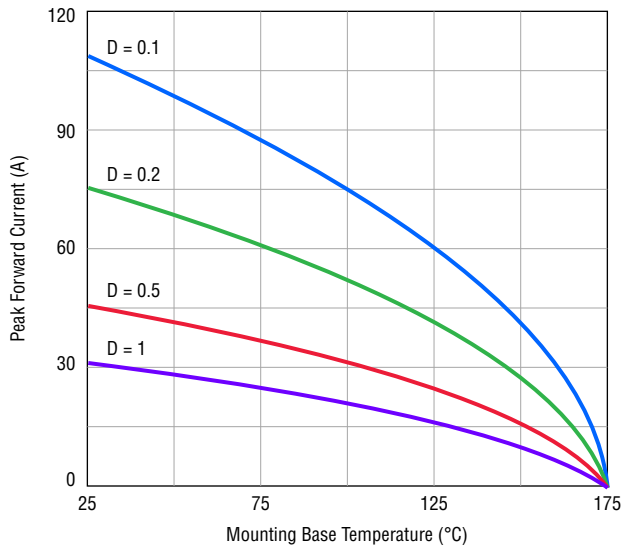
Typical Reverse Characteristics



Forward Power Dissipation



Forward Current Derating

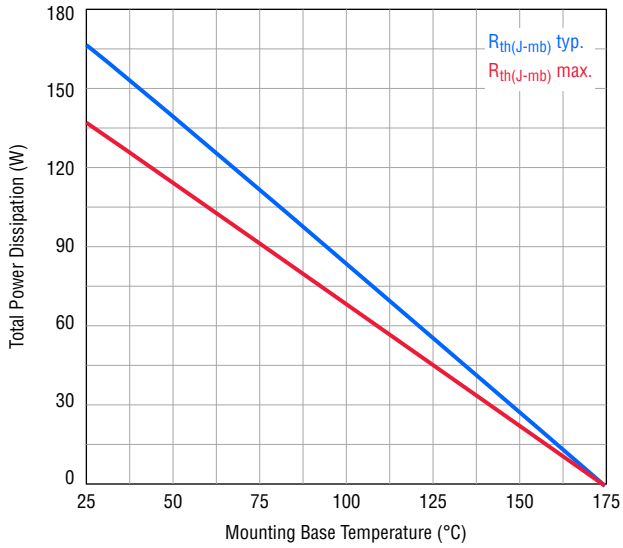


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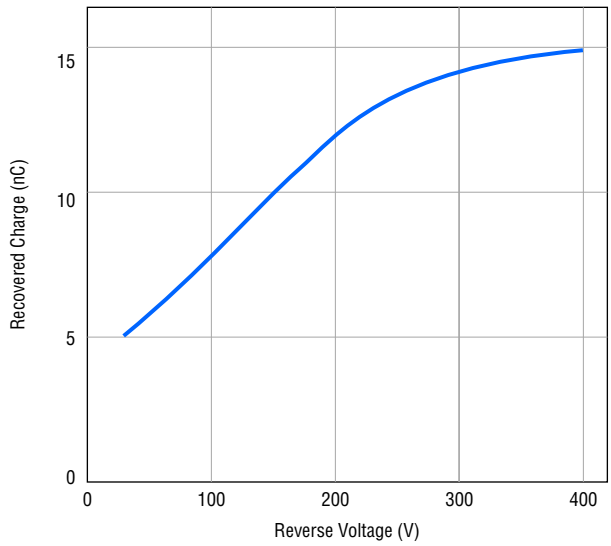
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Rating and Characteristic Curves (Continued)

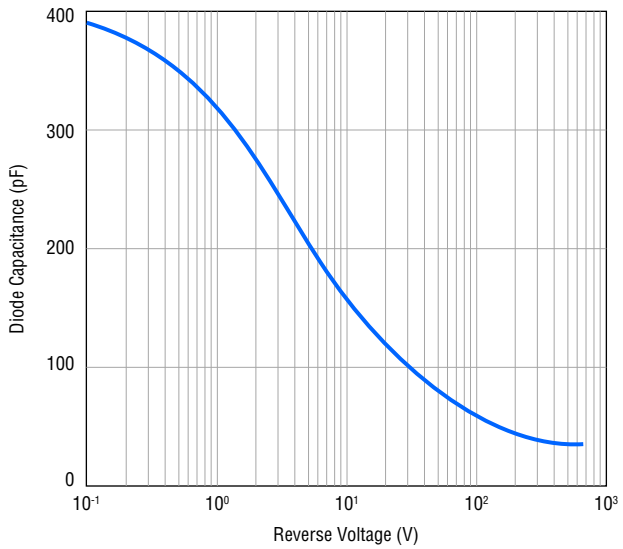
Power Derating



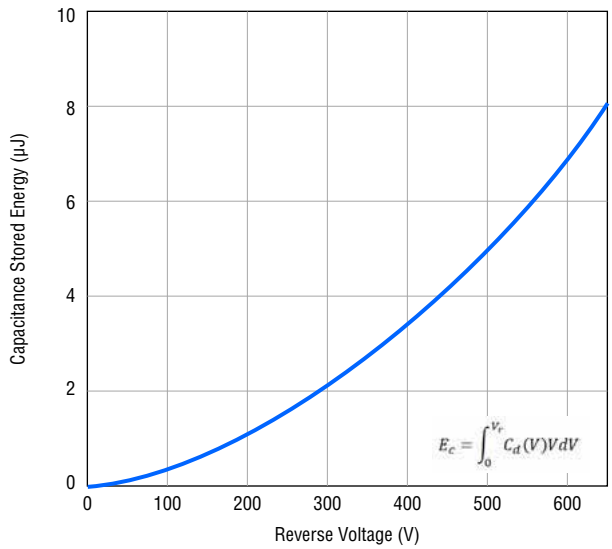
Typical Recovered Charge vs V_R



Typical Diode Capacitance vs V_R



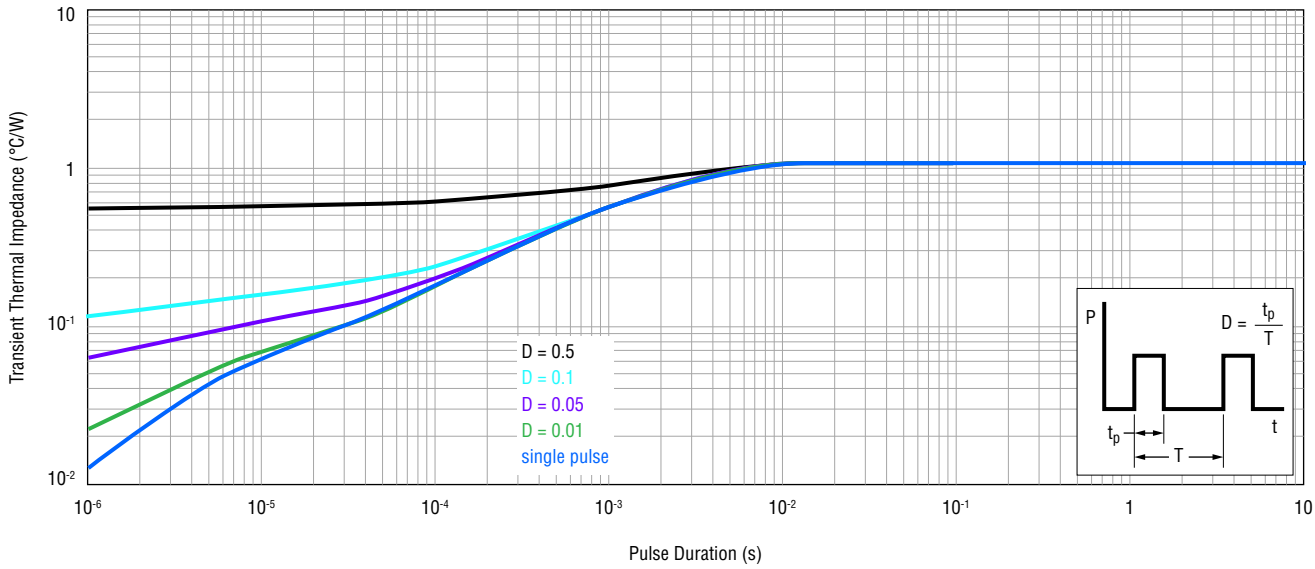
Typical Capacitance Stored Energy vs V_R



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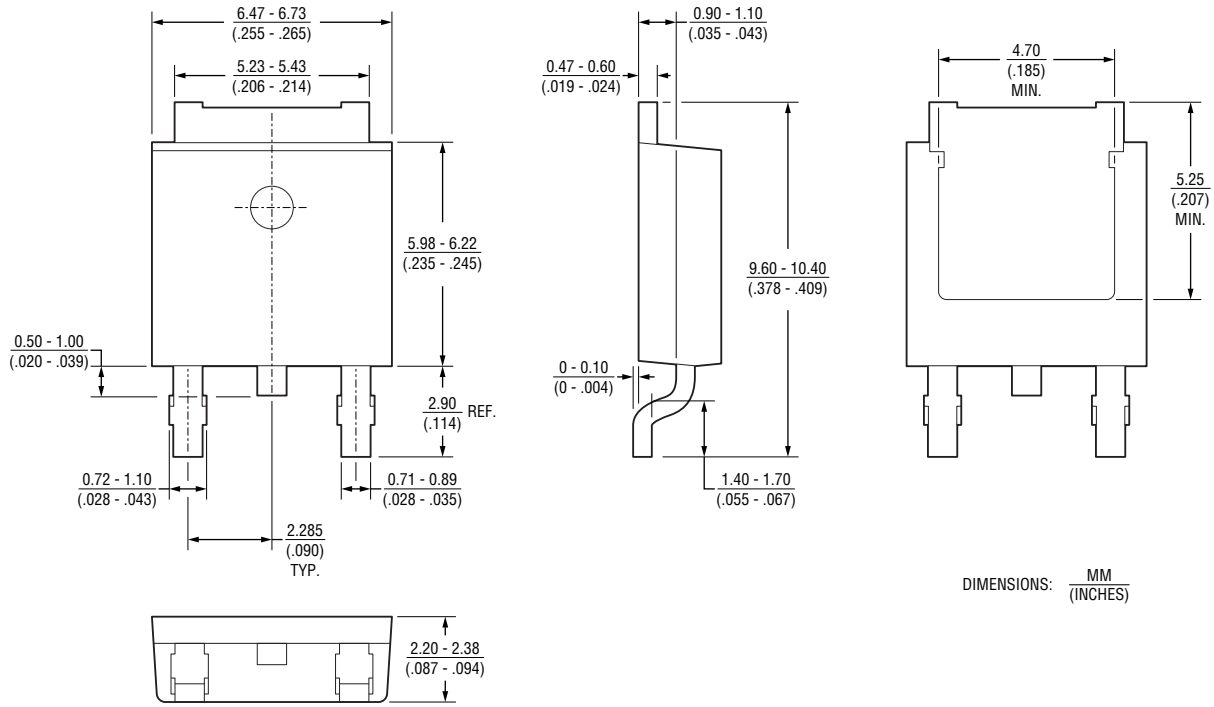
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Transient Thermal Impedance, $Zth_{(J\text{-}mb)}$



Product Dimensions

Package: TO252 (DPAK)



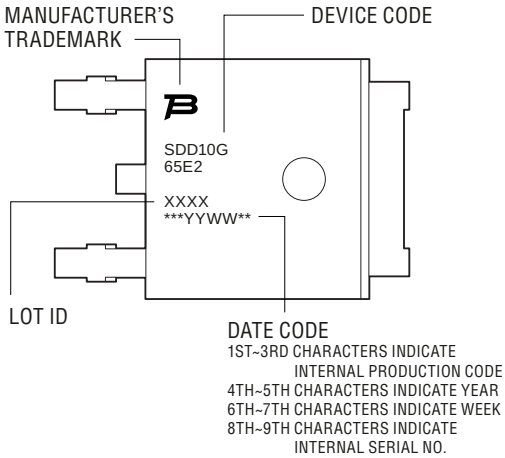
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BSDD10G65E2 Silicon Carbide Schottky Diode

BOURNS®

Typical Part Marking



Environmental Specifications

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

How to Order

B	SD	D	10	G	65	E	2

Manufacturer
B = Bourns

Product Type
SD = SiC Diodes

Package Code
D = TO252

Current Rating
10 = 10 A

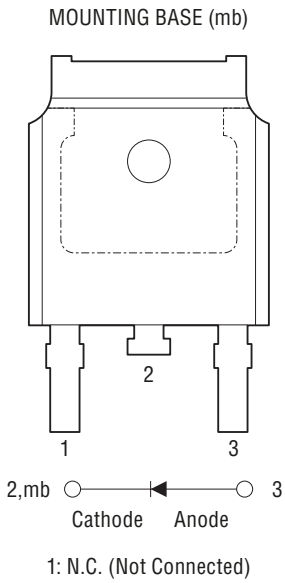
Device Type
G = General V_F

Nominal Voltage
65 = 650 V

Configuration
E = Single Diode

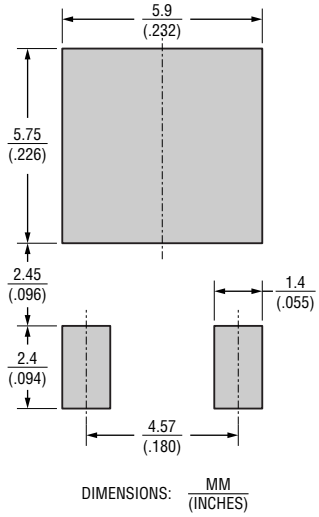
Version Number

Pin Information



1: N.C. (Not Connected)

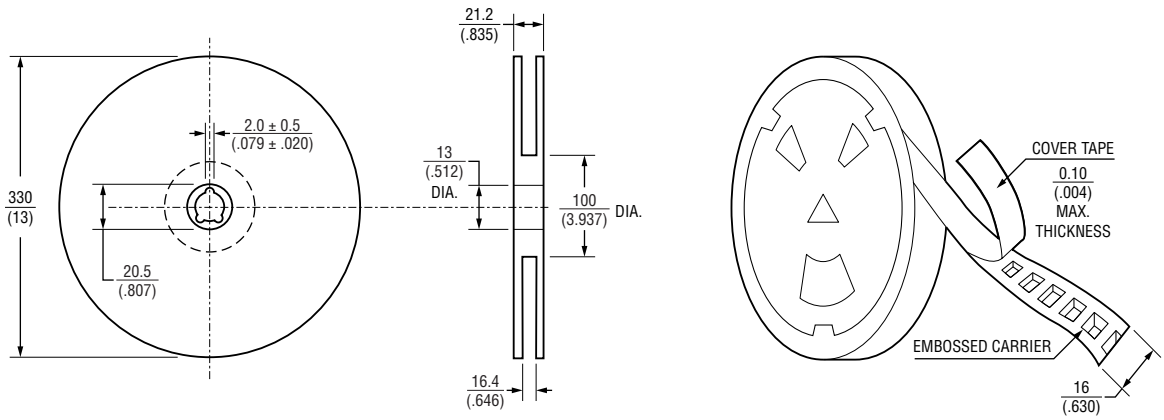
Recommended Footprint

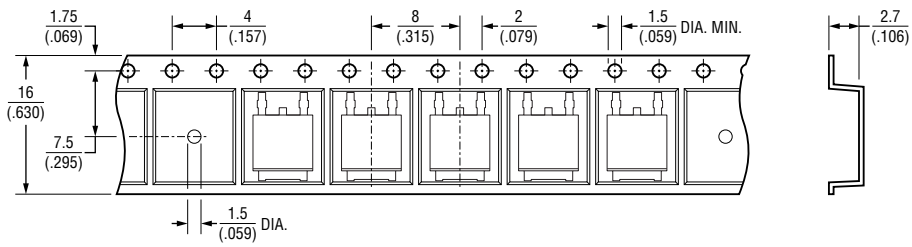


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Packaging Specifications





DIMENSIONS: MM / (INCHES)

USER DIRECTION OF FEED

QTY: 2,500 PCS PER REEL

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117
Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877
Email: eurocus@bourns.com

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