TECHNICAL DATA, PROVISIONAL DATA ONLY
DATA SHEET 4181, Rev. A

HERMETIC SILICON CARBIDE RECTIFIER

DESCRIPTION: A 1200-VOLT, 10 AMP POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC SHD-2 HIGH PROFILE PACKAGE

FEATURES:

- NO RECOVERY TIME OR REVERSE RECOVERY LOSSES
- NO TEMPERATURE INFLUENCE ON SWITCHING BEHAVIOR

MAXIMUM RATINGS ALL RATINGS ARE @ T_C = 25 °C UNLESS OTHERWISE SPECIFIED.

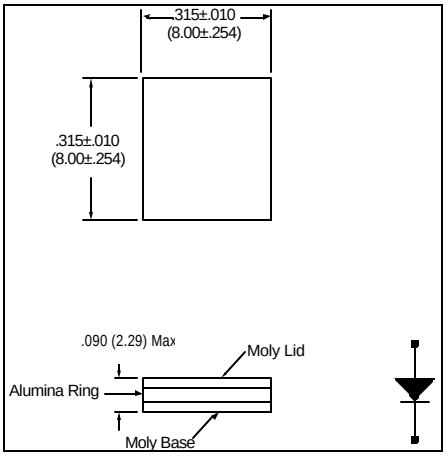
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT	I_O	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT (t = 8.3ms, Sine)	I_{FRM}	50	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT (t = 10µs, pulse)	I_{FSM}	250	Amps
MAXIMUM JUNCTION CAPACITANCE (V_r =400V)	C_T	70	pF
MAXIMUM POWER DISSIPATION	P_d	20	W
MAXIMUM THERMAL RESISTANCE (Junction to Case)	$R_{\theta JC}$	1.80	°C/W
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +200	°C

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP I_f = 10A, T_J=25 °C	1.60	1.80	
T_J=175 °C	2.50	3.00	Volts
MAXIMUM REVERSE CURRENT PIV = 1200V, T_J = 25 °C	0.05	0.40	
T_J = 175 °C	0.10	2.00	mA
TOTAL CAPACITIVE CHARGE (V_R=1200V, I_F=10A, di/dt=500A/µs and T_J=25°C) Q_C	60	N/A	nC

MECHANICAL DIMENSIONS: In Inches / mm

SHD-2 (High Profile)



SHD-2B (High Profile)

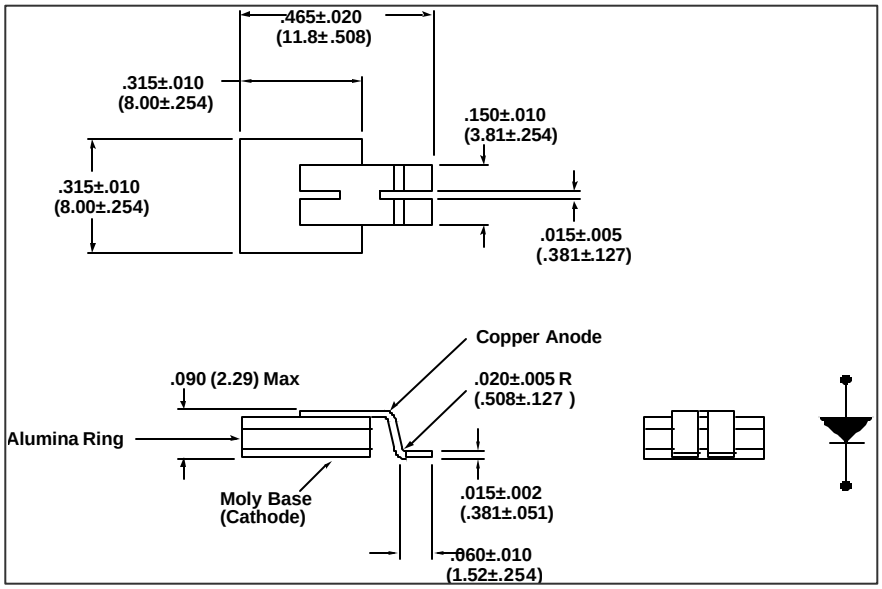


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Figure 1. Forward Characteristics

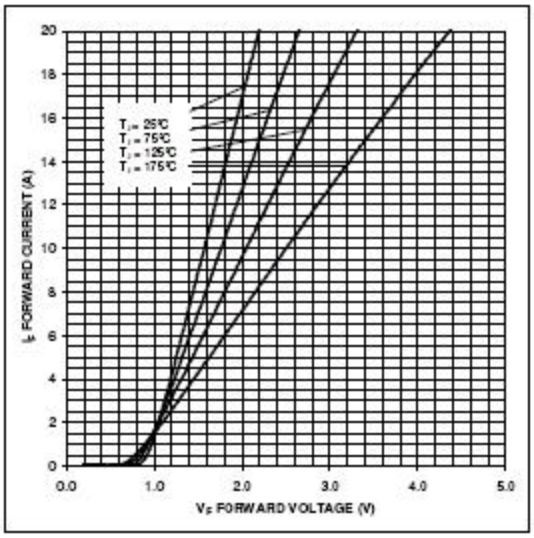
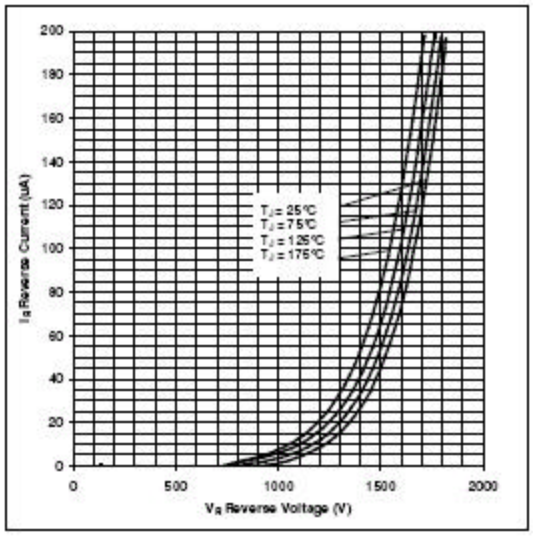


Figure 2. Reverse Characteristics



Application Note: Customers should be aware that at the current stage of technical development of SiC, the reverse avalanche capabilities of the device are limited.

Customer designs will need to accommodate these limitations and avoid exposure of the device to this and other potentially damaging conditions in their applications.

TECHNICAL DATA

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