

TECHNICAL DATA, PROVISIONAL DATA ONLY  
DATA SHEET 4183, Rev. -

## HERMETIC SILICON CARBIDE RECTIFIER

**DESCRIPTION:** A 1200-VOLT, 20 AMP POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC SHD-3 HIGH PROFILE PACKAGE

**FEATURES:**

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

**MAXIMUM RATINGS**

ALL RATINGS ARE @  $T_C = 25^\circ\text{C}$  UNLESS OTHERWISE SPECIFIED.

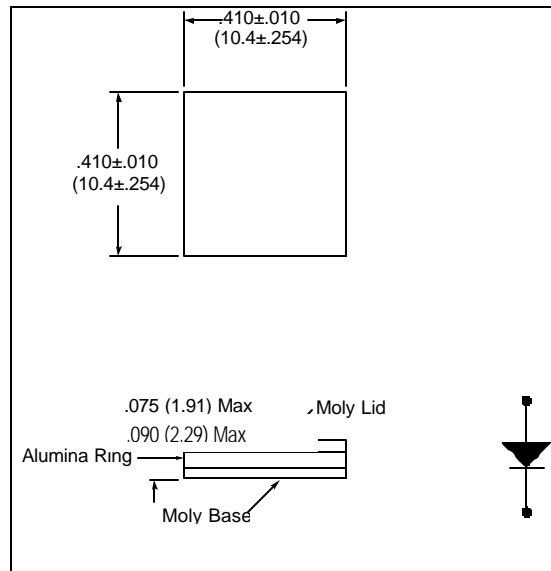
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT	$I_O$	20	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT ( $t = 8.3\text{ms}$ , Sine)	$I_{FRM}$	80	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT ( $t = 10\mu\text{s}$ , pulse)	$I_{FSM}$	400	Amps
MAXIMUM JUNCTION CAPACITANCE ( $V_r = 400\text{V}$ )	$C_T$	130	pF
MAXIMUM POWER DISSIPATION	$P_d$	40	W
MAXIMUM THERMAL RESISTANCE (Junction to Case)	$R_{\theta JC}$	0.90	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	$T_{op}$ , $T_{stg}$	-55 to +200	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**

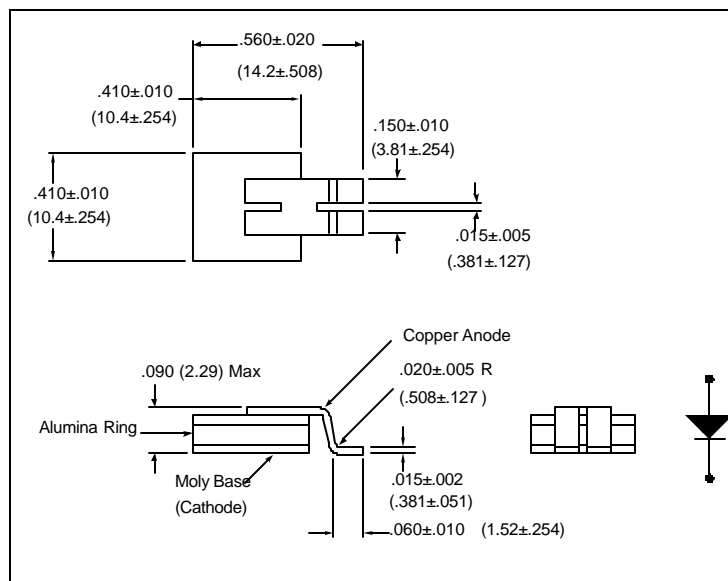
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP $I_f = 20\text{ A}$ , $T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	1.60 2.50	1.80 3.00	Volts
MAXIMUM REVERSE CURRENT $PIV = 1200\text{V}$ , $T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	0.02 0.04	0.40 2.00	mA
TOTAL CAPACITIVE CHARGE ( $V_R = 1200\text{V}$ , $I_F = 20\text{A}$ , $di/dt = 500\text{A}/\mu\text{s}$ and $T_J = 25^\circ\text{C}$ ) $Q_C$	100	N/A	nC

MECHANICAL DIMENSIONS: In Inches / mm

**SHD-3 (High Profile)**



**SHD-3B (High Profile)**



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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