

TECHNICAL DATA, PROVISIONAL DATA ONLY  
DATA SHEET 4131, Rev. A

## HERMETIC SILICON CARBIDE RECTIFIER

**DESCRIPTION:** A 1200-VOLT, 10 AMP POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC SHD-4 PACKAGE

**FEATURES:**

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

**MAXIMUM RATINGS**

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

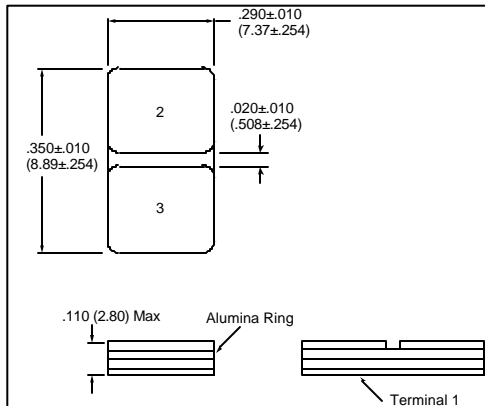
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT PER LEG	$I_O$	5	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 8.3\text{ms}$ , Sine)	$I_{FRM}$	30	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 10\mu\text{s}$ , pulse)	$I_{FSM}$	100	Amps
MAXIMUM JUNCTION CAPACITANCE PER LEG ( $V_r=5\text{V}$ )	$C_T$	450	pF
MAXIMUM POWER DISSIPATION	$P_d$	30	W
MAXIMUM THERMAL RESISTANCE (Junction to Case)	$R_{\theta JC}$	1.20	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +200	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**

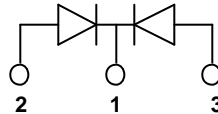
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP $I_f = 5\text{A}$ PER LEG, $T_J=25\text{ }^\circ\text{C}$ $T_J=175\text{ }^\circ\text{C}$	1.65 2.55	1.80 3.00	Volts
MAXIMUM REVERSE CURRENT PIV = 1200V PER LEG, $T_J = 25\text{ }^\circ\text{C}$ $T_J = 175\text{ }^\circ\text{C}$	0.05 0.10	0.40 2.00	mA
TOTAL CAPACITIVE CHARGE PER LEG ( $V_R=1200\text{V}$ , $I_F=5\text{A}$ , $di/dt=500\text{A}/\mu\text{s}$ and $T_J=25\text{ }^\circ\text{C}$ ) $Q_C$	28	N/A	nC

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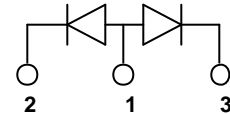
MECHANICAL DIMENSIONS: In Inches / mm



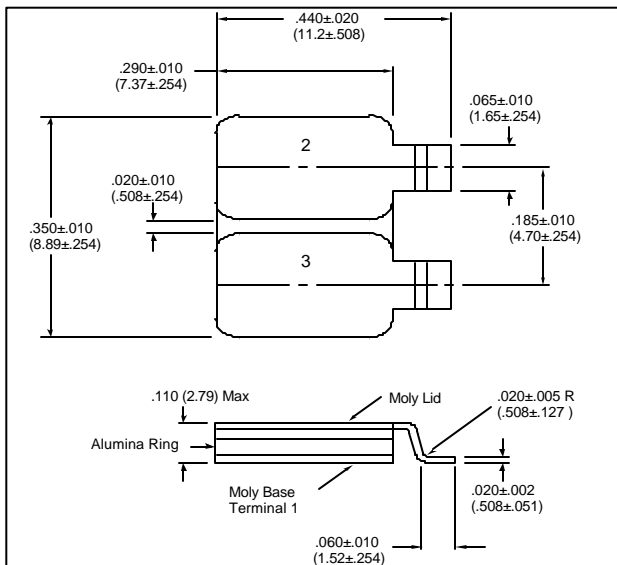
**COMMON CATHODE**



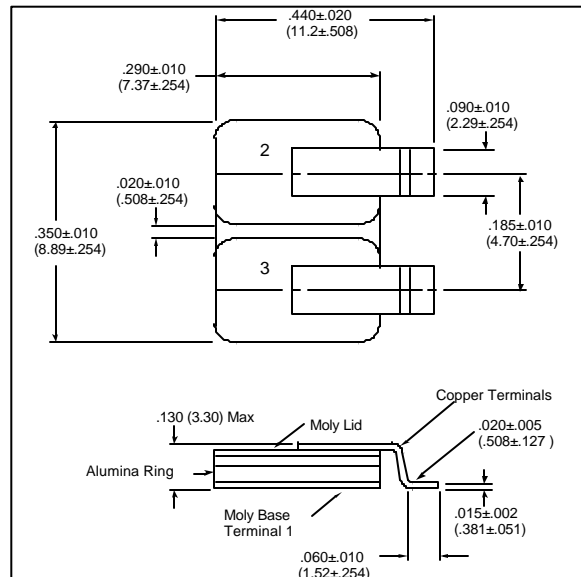
**COMMON ANODE**



**SHD-4**



**SHD-4A**



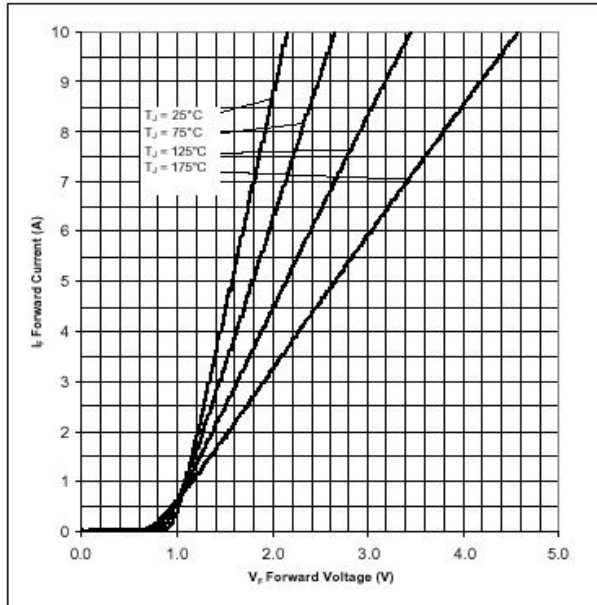
**SHD-4B**

**PINOUT TABLE**

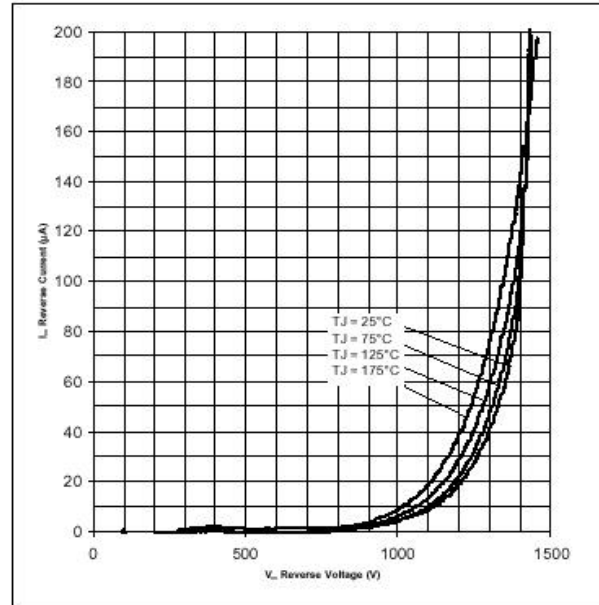
DEVICE TYPE	PIN 1	PIN 2	PIN 3
DUAL RECTIFIER, COMMON CATHODE (P)	COMMON CATHODE	ANODE 1	ANODE 2
DUAL RECTIFIER, COMMON ANODE (N)	COMMON ANODE	CATHODE 1	CATHODE 2

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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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