

**TECHNICAL DATA**  
**DATA SHEET 4077, REV. D**

**HERMETIC SILICON CARBIDE RECTIFIER**

**DESCRIPTION:** A 600-VOLT, 10 AMP POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC LCC-5 PACKAGE

**FEATURES:**

- NO RECOVERY TIME OR REVERSE RECOVERY LOSSES
- NO TEMPERATURE INFLUENCE ON SWITCHING BEHAVIOR
- AVAILABLE SCREENED TO ANY REQUIRED LEVEL

**MAXIMUM RATINGS**

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

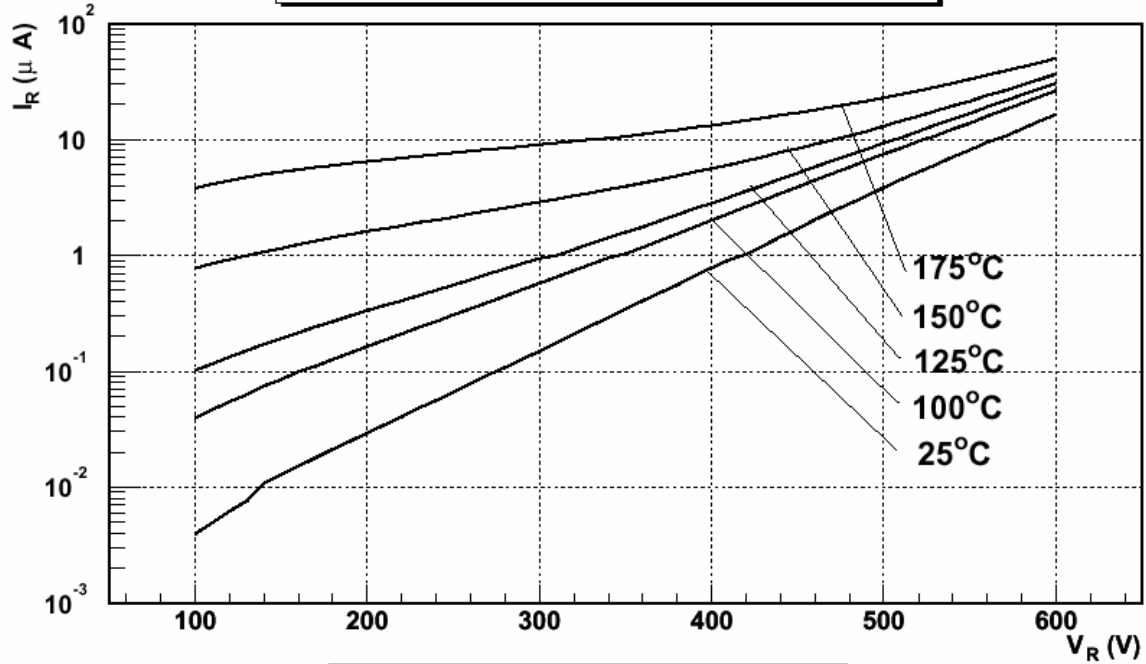
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	600	Volts
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ $T_C = 65^\circ\text{C}$ )	$I_O$	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 8.3\text{ms}$ , Sine) $T_C = 25^\circ\text{C}$	$I_{FRM}$	50	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 10\mu\text{s}$ , Pulse) $T_C = 25^\circ\text{C}$	$I_{FSM}$	250	Amps
MAXIMUM JUNCTION CAPACITANCE ( $V_f = 5\text{V}$ )	$C_T$	350	pF
MAXIMUM POWER DISSIPATION, $T_C = 25^\circ\text{C}$	$P_d$	20	W
MAXIMUM THERMAL RESISTANCE, Junction to Case	$R_{\theta JC}$	3.5	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +175	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**

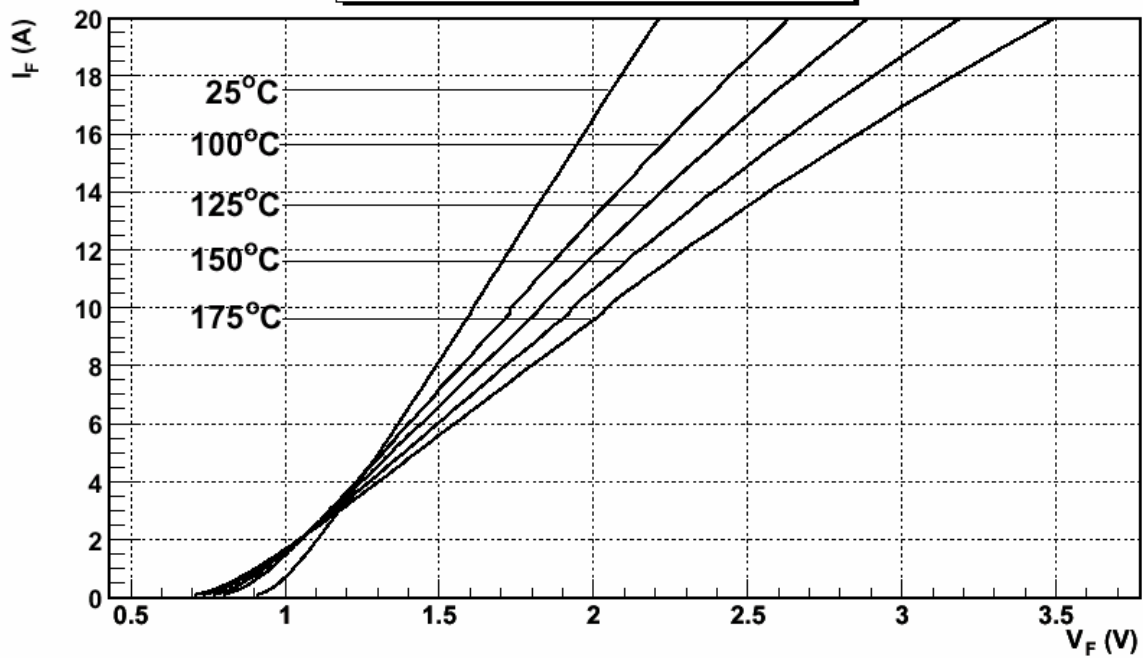
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP, Pulsed ( $I_f = 10\text{A}$ ) $T_J = 25^\circ\text{C}$ $V_f$ $T_J = 150^\circ\text{C}$	1.65 1.85	1.75 1.95	Volts
MAXIMUM FORWARD VOLTAGE DROP, Pulsed ( $I_f = 6\text{A}$ ) $T_J = 25^\circ\text{C}$ $V_f$ $T_J = 150^\circ\text{C}$	1.35 1.50	1.45 1.60	Volts
MAXIMUM REVERSE CURRENT ( $I_r @ 600\text{V PIV}$ ) $T_J = 25^\circ\text{C}$ $I_r$ $T_J = 150^\circ\text{C}$	0.04 0.08	0.15 0.50	mA
TOTAL CAPACITIVE CHARGE ( $V_R=600\text{V}$ $I_F=10\text{A}$ $di/dt=500\text{A}/\mu\text{s}$ $T_J=25^\circ\text{C}$ ) $Q_C$	40	N/A	nC

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**Typical Reverse Current Characteristics**



**Typical Forward Characteristics**



# SENSITRON

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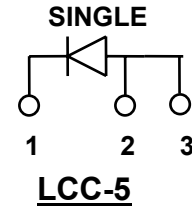
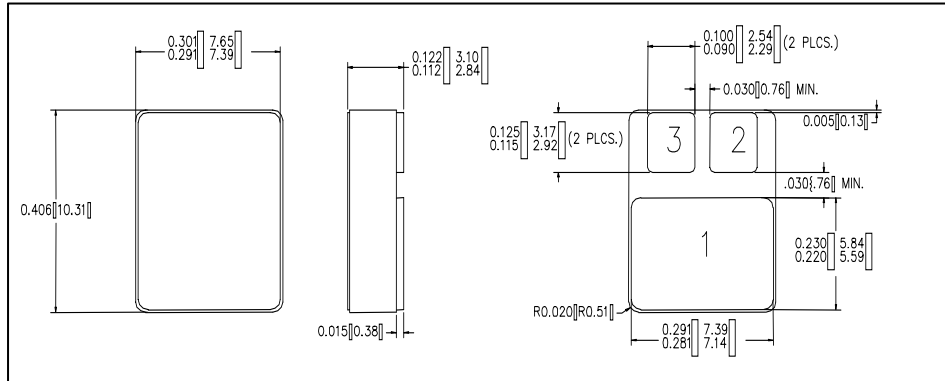
## SEMICONDUCTOR

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#### MECHANICAL DIMENSIONS: IN Inches / mm



#### PINOUT TABLE

DEVICE TYPE	PIN 1	PIN 2	PIN 3
SINGLE RECTIFIER	CATHODE	ANODE	ANODE

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.

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