**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 °C UNLESS OTHERWISE SPECIFIED.

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

**ELECTRICAL CHARACTERISTICS**

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

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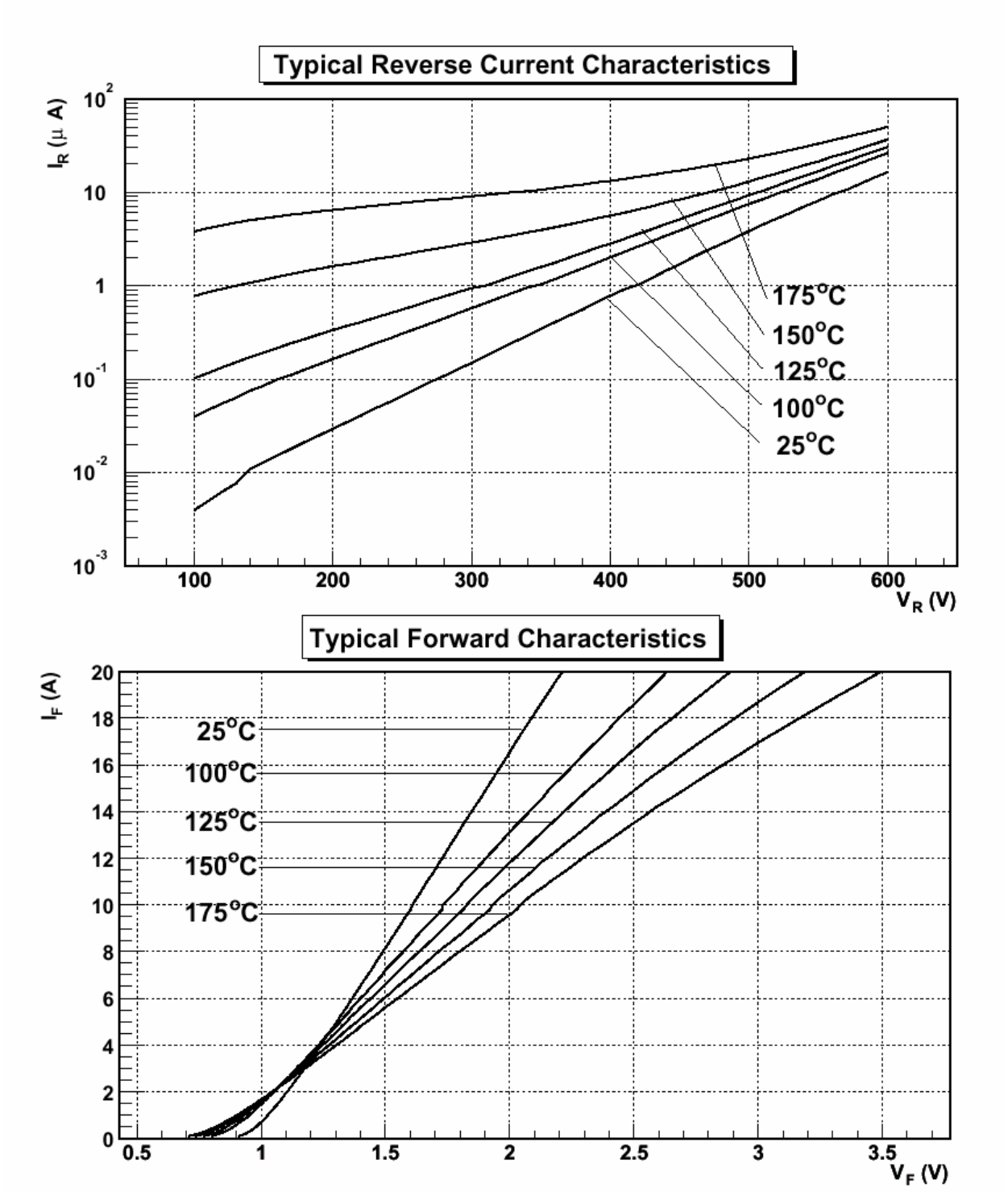

***SENSITRON***
***SEMICONDUCTOR***

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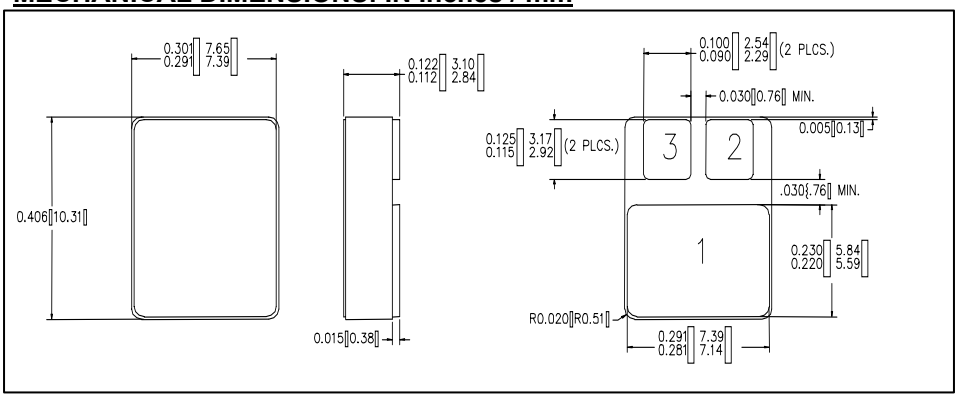
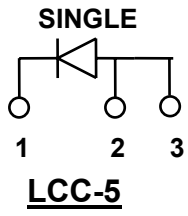
**MECHANICAL DIMENSIONS: IN Inches / mm**




**LCC-5**

## 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.