TECHNICAL DATA,
DATA SHEET 4080, REV. E

HERMETIC SILICON CARBIDE RECTIFIER

DESCRIPTION: A 1200-VOLT, 5 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
- SCREENED VERSIONS ARE AVAILABLE

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 (With Cathode Maintained @ T_C = 65 ^{O}C, Single Package)	I_O	5	Amps
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ T_C = 65 ^{O}C, Dual Package)	I_O	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG (t = 8.3ms, Sine) T_C = 25 ^{O}C	I_{FRM}	30	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG (t = 10μs, pulse) T_C = 25 ^{O}C	I_{FSM}	100	Amps
MAXIMUM POWER DISSIPATION, T_C = 25 ^{O}C	P_d	15	W
MAXIMUM THERMAL RESISTANCE, Junction to Case	$R_{\theta JC}$	2.60	°C/W
MAXIMUM OPERATING TEMPERATURE RANGE	Top	-55 to +175	°C
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE*	Top, Tstg	-55 to +200	°C

***** Note: SiC semiconductors will handle at or above this operating and storage temperature. However, extended operational use of the packaged device above 175C may reduce its future performance. All qualification testing and screening per MIL-PRF-19500 will only be performed to 175C.

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC			TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP (I_f = 5 A)	V_f	T_J = 25 °C	1.6	1.8	
		T_J = 175 °C	2.6	3.0	Volts
MAXIMUM REVERSE CURRENT (1200V PIV)	I_r	T_J = 25 °C	0.05	0.20	
		T_J=150 °C	0.10	1.00	mA
MAXIMUM JUNCTION CAPACITANCE (V_r=5V)		C_T	450		PF
TOTAL CAPACITIVE CHARGE (V_R=1200V I_F=5A di/dt=500A/μs T_J=25°C)		Q_C	28	N/A	nC

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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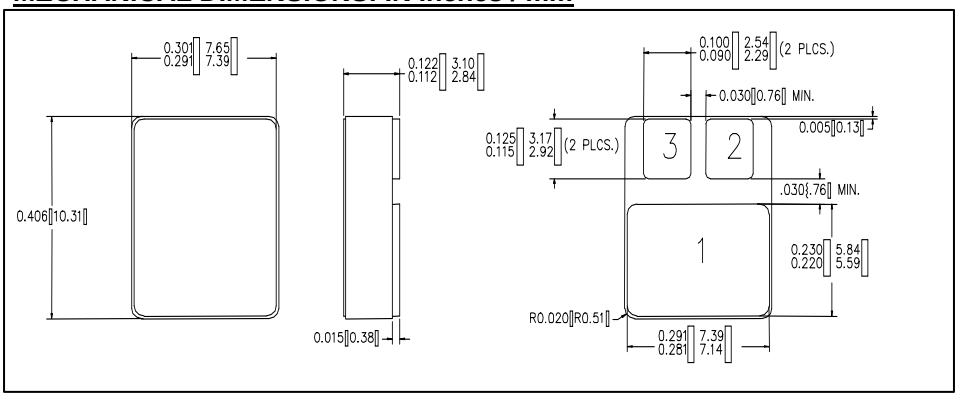
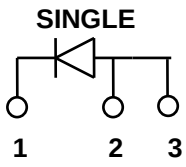
MECHANICAL DIMENSIONS: IN Inches / mm





LCC-5

PINOUT TABLE

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

Figure 1. Forward Characteristics

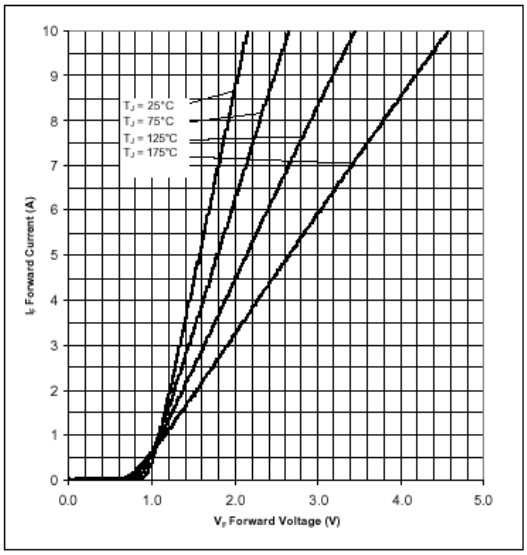


Figure 2. Reverse Characteristics