TECHNICAL DATA
DATA SHEET4179, REV. C

HERMETIC SILICON CARBIDE RECTIFIER

DESCRIPTION: A 1200-VOLT, 20 AMP POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC SMD-0.5 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.

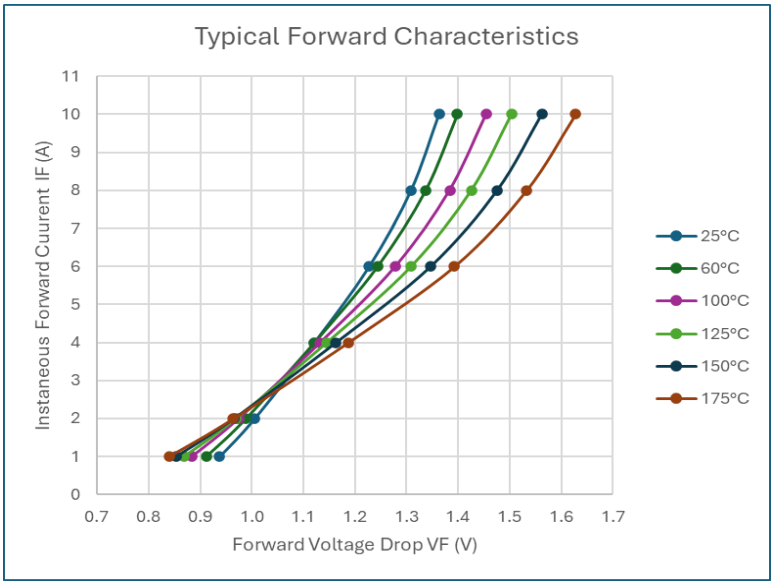
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ T_C = 65 ^{O}C, for Dual Package)	I_O	20	Amps
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ T_C = 65 ^{O}C, for Single Package)	I_O	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG (t = 8.3ms, Sine) per leg, T_C = 25 ^{O}C	I_{FRM}	25	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG (t = 10μs, Pulse) per leg, T_C = 25 ^{O}C	I_{FSM}	250	Amps
MAXIMUM POWER DISSIPATION, T_C = 25 ^{O}C (for dual package)	P_d	53	W
MAXIMUM THERMAL RESISTANCE, Junction to Case (PER PACKAGE) (PER LEG)	$R_{\theta JC}$	2.8 5.6	°C/W
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE*	Top, Tstg	-55 to +175	°C

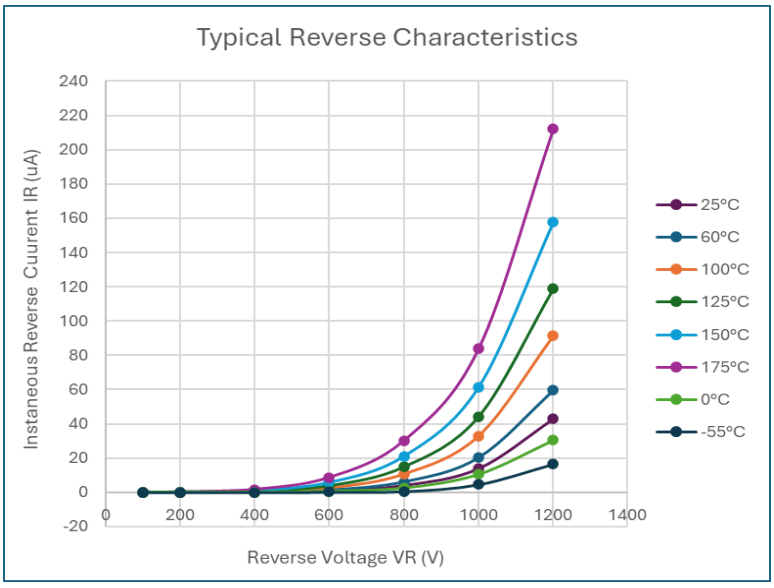
***** Note: SiC semiconductors will handle at or above this operating and storage temperature. However, extended operational use of the packaged device above 175C may reduce its future performance. All qualification testing and screening per MIL-PRF-19500 will only be performed to 175C.

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC			TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP, Pulsed (I_f = 10 A PER LEG)					
	T_J = 25 °C	V_f	1.50	1.80	Volts
	T_J = 125 °C		1.65	1.95	
MAXIMUM REVERSE CURRENT (I_r @ 600V PIV PER LEG)					
	T_J = 25 °C	I_r	0.05	0.20	mA
	T_J = 125 °C		0.15	0.80	
JUNCTION CAPACITANCE per leg	(V_r =5V)	C_T	350	N/A	pF
(Vr =100V)			100		
TOTAL CAPACITIVE CHARGE per leg (V_R=800V I_F=10A di/dt=200A/μs) Q_C			52	N/A	nC

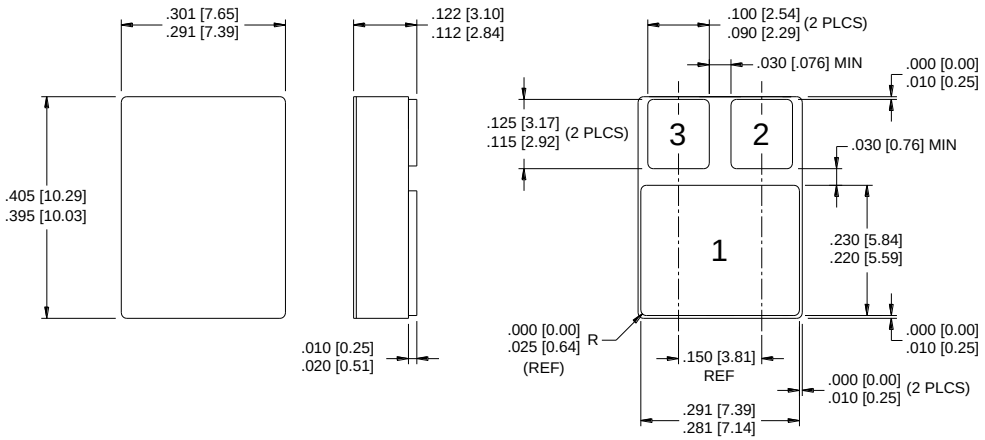
TYPICAL CHARACTERISTICS:





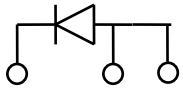
TECHNICAL DATA
DATA SHEET4179, REV. C

MECHANICAL DIMENSIONS: IN Inches / mm

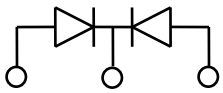


SMD-0.5

SINGLE



COMMON CATHODE



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

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.

PART ORDERING INFORMATION:

SHD620112PXX X

Screening Level (blank is no screening):

Suffix	Screened in Accordance with:
blank	No screening level
S	MIL-PRF-19500, TXV Level
SS	MIL-PRF-19500, S Level

QCI (blank is no QCI):

Suffix	Inspection in Accordance with:
blank	No QCI
Q	MIL-PRF-19500 QCI

TECHNICAL DATA
DATA SHEET4179, REV. C