

TECHNICAL DATA, PROVISIONAL DATA ONLY  
DATA SHEET 4179, REV. B

## HERMETIC SILICON CARBIDE RECTIFIER

**DESCRIPTION:** A 1200-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
- SCREENED VERSIONS ARE AVAILABLE

### MAXIMUM RATINGS

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

RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ $T_C = 65^\circ\text{C}$ , for Single Package)	$I_o$	10	Amps
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ $T_C = 65^\circ\text{C}$ , for Dual Package)	$I_o$	20	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT ( $t = 8.3\text{ms}$ , Sine) $T_C = 25^\circ\text{C}$	$I_{FRM}$	50	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURREN ( $t = 10\mu\text{s}$ , pulse) $T_C = 25^\circ\text{C}$	$I_{FSM}$	250	Amps
MAXIMUM POWER DISSIPATION, $T_C = 25^\circ\text{C}$	$P_d$	20	W
MAXIMUM THERMAL RESISTANCE, Junction to Case	$R_{\theta JC}$	1.8	$^\circ\text{C/W}$
MAXIMUM OPERATING TEMPERATURE RANGE	Top	-55 to +200	$^\circ\text{C}$
MAXIMUM STORAGE TEMPERATURE RANGE	Tstg	-55 to +200	$^\circ\text{C}$

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

### ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP ( $I_f = 10\text{A}$ ) $V_f$	$T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	1.6 2.5	Volts
MAXIMUM REVERSE CURRENT (1200V PIV) $I_r$	$T_J = 25^\circ\text{C}$ $T_J = 175^\circ\text{C}$	0.01 0.02	mA
MAXIMUM JUNCTION CAPACITANCE ( $V_r = 400\text{V}$ )	$C_T$	70	PF
TOTAL CAPACITIVE CHARGE ( $V_R = 1200\text{V}$ $I_F = 10\text{A}$ $di/dt = 500\text{A}/\mu\text{s}$ $T_J = 25^\circ\text{C}$ ) $Q_C$		60	nC



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