

TECHNICAL DATA  
DATA SHEET 4235, REV. -

## HERMETIC SILICON CARBIDE RECTIFIER

**DESCRIPTION:** A 300-VOLT, 20 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

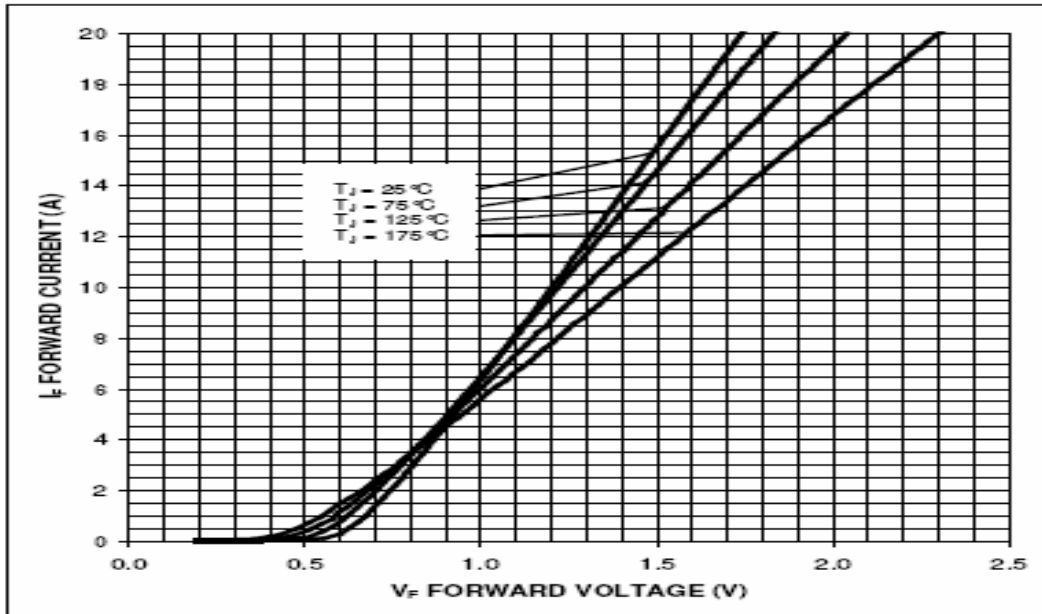
### MAXIMUM RATINGS

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

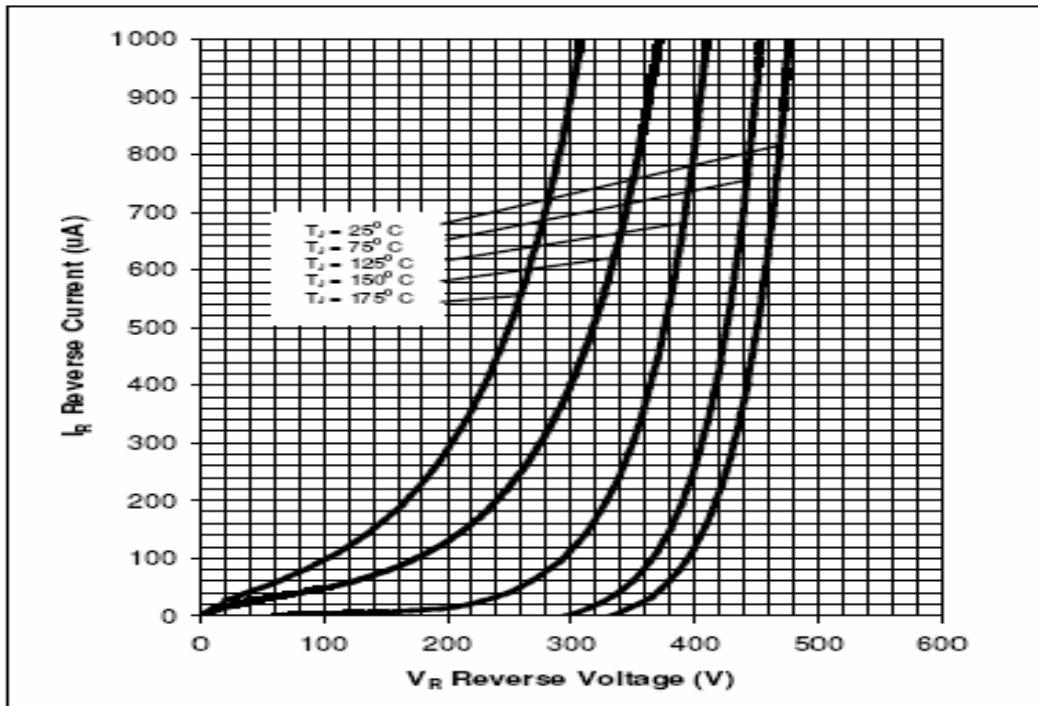
RATING	SYMB OL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	300	Volts
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ $T_C = 65^\circ\text{C}$ , for Dual Package)	$I_O$	20	Amps
MAXIMUM DC OUTPUT CURRENT (With Cathode Maintained @ $T_C = 65^\circ\text{C}$ , for Single Package)	$I_O$	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 8.3\text{ms}$ , Sine) per leg, $T_C = 25^\circ\text{C}$	$I_{FRM}$	40	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 10\mu\text{s}$ , Pulse) per leg, $T_C = 25^\circ\text{C}$	$I_{FSM}$	200	Amps
MAXIMUM JUNCTION CAPACITANCE ( $V_r = 5\text{V}$ ) per leg	$C_T$	660	PF
MAXIMUM POWER DISSIPATION, $T_C = 25^\circ\text{C}$	$P_d$	40	W
MAXIMUM THERMAL RESISTANCE, Junction to Case (PER DUAL PACKAGE)	$R_{\theta JC}$	4.6	$^\circ\text{C/W}$
MAXIMUM OPERATING TEMPERATURE RANGE	$T_{op}$	-55 to +175	$^\circ\text{C}$
MAXIMUM STORAGE TEMPERATURE RANGE	$T_{stg}$	-55 to +175	$^\circ\text{C}$

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**Figure 1. Forward Characteristics**



**Figure 2. Reverse Characteristics**



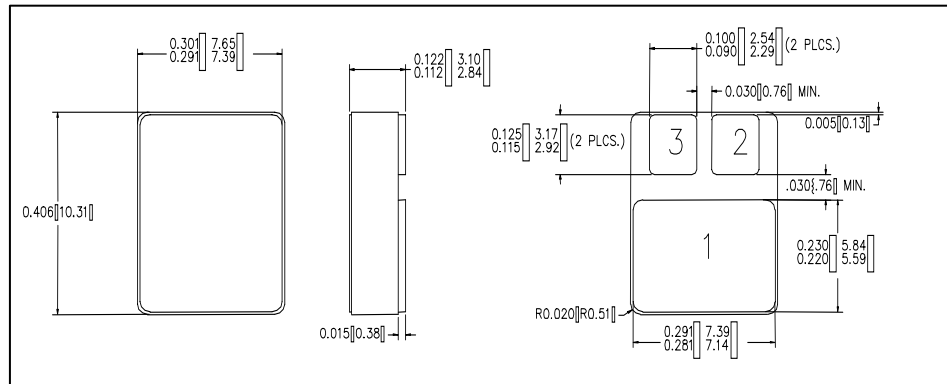
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**ELECTRICAL CHARACTERISTICS**

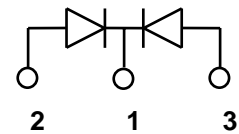
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP, Pulsed ( $I_f = 5$ Amps) (PER LEG) $T_J = 25\text{ }^\circ\text{C}$ $V_f$ $T_J = 175\text{ }^\circ\text{C}$	0.90 1.00	1.20 1.30	Volts
MAXIMUM FORWARD VOLTAGE DROP, Pulsed ( $I_f = 10$ Amps) (PER LEG) $T_J = 25\text{ }^\circ\text{C}$ $V_f$ $T_J = 175\text{ }^\circ\text{C}$	1.20 1.40	1.40 1.80	Volts
MAXIMUM REVERSE CURRENT ( $I_r$ @ 300V PIV) (PER LEG) $T_J = 25\text{ }^\circ\text{C}$ $I_r$ $T_J = 175\text{ }^\circ\text{C}$	0.05 1.00	0.25 2.00	MA
TOTAL CAPACITIVE CHARGE ( $V_R=300\text{V}$ $I_F=10\text{A}$ $di/dt=500\text{A}/\mu\text{s}$ $T_J=25^\circ\text{C}$ ) $Q_C$ per leg	11.5	N/A	NC

**MECHANICAL DIMENSIONS: In Inches / mm**

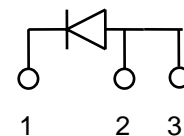
**LCC-5**



**COMMON CATHODE**



**SINGLE**



**PINOUT TABLE**

DEVICE TYPE	PIN 1	PIN 2	PIN 3
SINGLE RECTIFIER	CATHODE	ANODE	ANODE
DUAL, COMMON CATHODE	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.

**TECHNICAL DATA**

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