

TECHNICAL DATA  
DATA SHEET 5437, REV. -

## HERMETIC SILICON CARBIDE RECTIFIER

**DESCRIPTION:** A 600-VOLT, 24 AMP COMMON CATHODE POWER SILICON CARBIDE RECTIFIER IN A CERAMIC HERMETIC LCC-5 PACKAGE.

**EQUIVALENT TO SSDI SSR24C60CT**

**FEATURES:**

- NO RECOVERY TIME OR REVERSE RECOVERY LOSSES
- NO TEMPERATURE INFLUENCE ON SWITCHING BEHAVIOR
- AVAILABLE SCREENED TO S LEVEL => SHD620051PYS

**MAXIMUM RATINGS**

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

RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	600	Volts
MAXIMUM DC OUTPUT CURRENT FOR BOTH LEGS TOGETHER	$I_o$	24	Amps
MAXIMUM DC OUTPUT CURRENT EACH LEG	$I_o$	12	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT PER LEG ( $t = 8.3\text{ms}$ , Sine) per leg, $T_C = 25^\circ\text{C}$	$I_{FRM}$	50	Amps
MAXIMUM POWER DISSIPATION, $T_C = 25^\circ\text{C}$	$P_d$	79	W
MAXIMUM THERMAL RESISTANCE, BOTH LEGS TOGETHER	$R_{\theta JC}$	1.9	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE*	Top, Tstg	-55 to 200	$^\circ\text{C}$

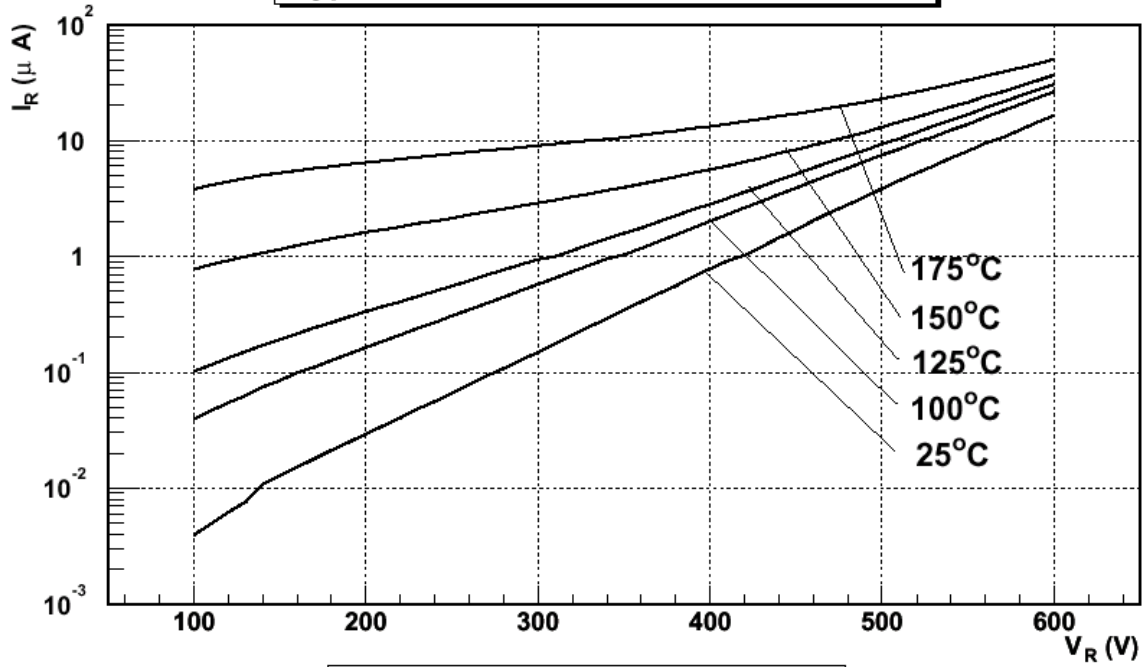
\* Note: SiC semiconductors will handle at or above this operating and storage temperature. However, extended operational use of the packaged device above 175C may reduce its future performance. All qualification testing and screening per MIL-PRF-19500 will only be performed to 175C.

**ELECTRICAL CHARACTERISTICS**

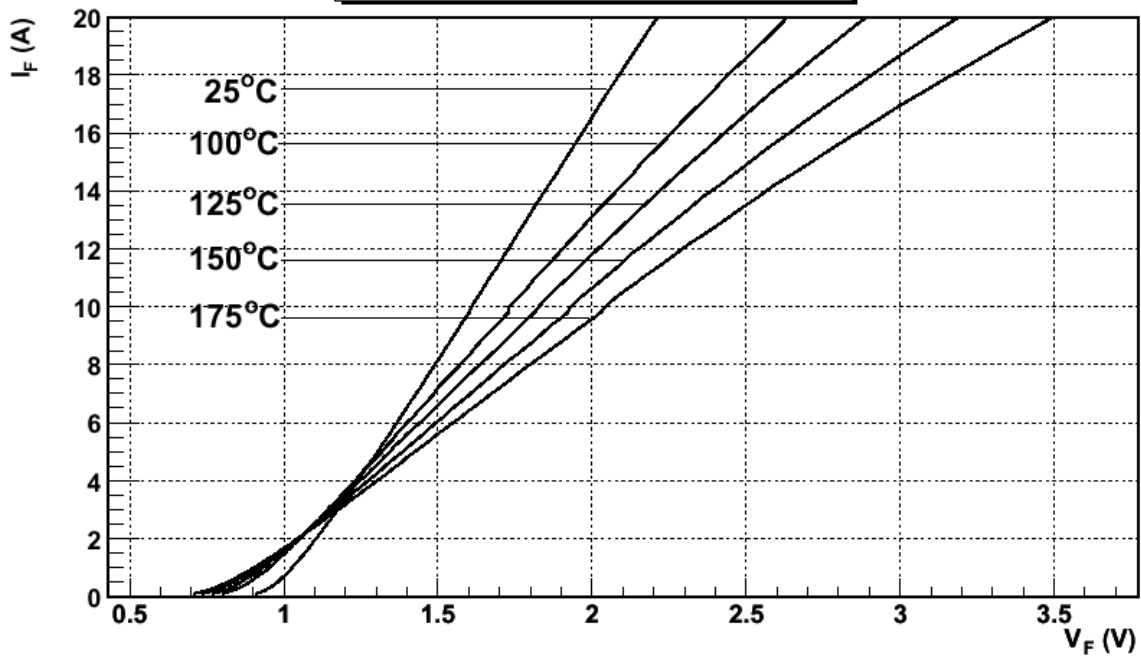
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP, Pulsed, $V_F$ , $T_J = 25^\circ\text{C}$ $I_F = 6\text{A}$ $I_F = 12\text{A}$	1.20 1.50	1.38 1.70	Volts
MAXIMUM FORWARD VOLTAGE DROP, Pulsed, $V_F$ , $T_J = 150^\circ\text{C}$ $I_F = 6\text{A}$ $I_F = 12\text{A}$	1.35 1.85	1.55 2.15	Volts
MAXIMUM FORWARD VOLTAGE DROP, Pulsed, $V_F$ , $T_J = -55^\circ\text{C}$ $I_F = 6\text{A}$ $I_F = 12\text{A}$	1.27 1.50	1.40 1.70	Volts
MAXIMUM REVERSE CURRENT ( $I_r$ @ 600V PIV PER LEG) $T_J = 25^\circ\text{C}$ $T_J = 150^\circ\text{C}$	1 5	200 1000	$\mu\text{A}$
JUNCTION CAPACITANCE $C_T$ ( $V_r = 5\text{V}$ ) per leg	$C_T$	280 350	pF
TOTAL CAPACITIVE CHARGE ( $V_R = 10\text{V}$ $I_F = 12\text{A}$ $di/dt = 200\text{A}/\mu\text{s}$ $T_J = 25^\circ\text{C}$ ) This is design information only	$Q_C$ per leg	35 N/A	nC

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**Typical Reverse Current Characteristics**



**Typical Forward Characteristics**



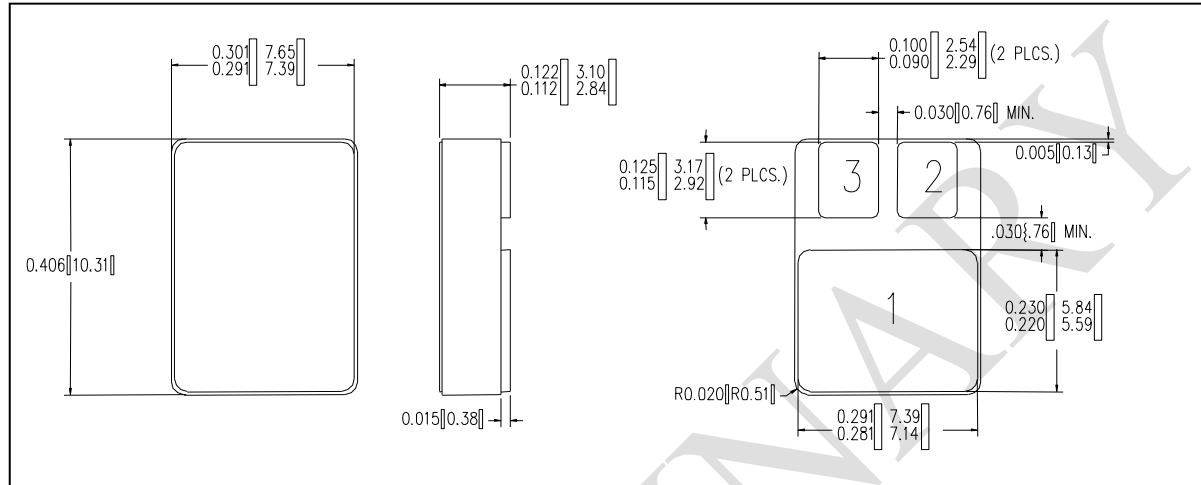
# SENSITRON

## SEMICONDUCTOR

### TECHNICAL DATA

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#### MECHANICAL DIMENSIONS: IN Inches / mm

**LCC-5**

#### PINOUT TABLE

DEVICE TYPE	PIN 1	PIN 2	PIN 3
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.

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