Technical Data
Datasheet 4288 REV. –

SILICON CARBIDE 3-PHASE FULL WAVE BRIDGE

DESCRIPTION: 1200-VOLT, 5 AMP POWER SILICON CARBIDE 3-PHASE FULL WAVE BRIDGE IN A HERMETIC 5-PIN TO-258 (MO-078) PACKAGE.

FEATURES:

- NO RECOVERY TIME OR REVERSE RECOVERY LOSSES
- NO TEMPERATURE INFLUENCE ON SWITCHING BEHAVIOR

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 T_C = 65 ^{O}C) PER LEG	I_O	5	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT (t = 8.3ms, Sine) per leg, T_C = 25 ^{O}C	I_{FRM}	30	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT (t = 10μs, pulse) per leg, T_C = 25 ^{O}C	I_{FSM}	100	Amps
MAXIMUM JUNCTION CAPACITANCE (V_r=5V) per leg	C_T	450	pF
MAXIMUM POWER DISSIPATION, T_C = 25 ^{O}C	P_d	60	W
MAXIMUM THERMAL RESISTANCE, Junction to Case	$R_{\theta JC}$	0.6	°C/W
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +175	°C

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP (I_f = 5 A PER LEG) V_f T_J=25 °C	1.65	1.80	
T_J=150 °C	2.55	3.00	Volts
MAXIMUM REVERSE CURRENT (1200V PIV PER LEG) I_r T_J = 25 °C	0.05	0.20	
T_J = 150 °C	0.10	1.00	mA
TOTAL CAPACITANCE CHARGE (V_R=1200V, I_F=5A, di/dt=500A/μs and T_J=25°C) Q_C per leg	28	N/A	nC

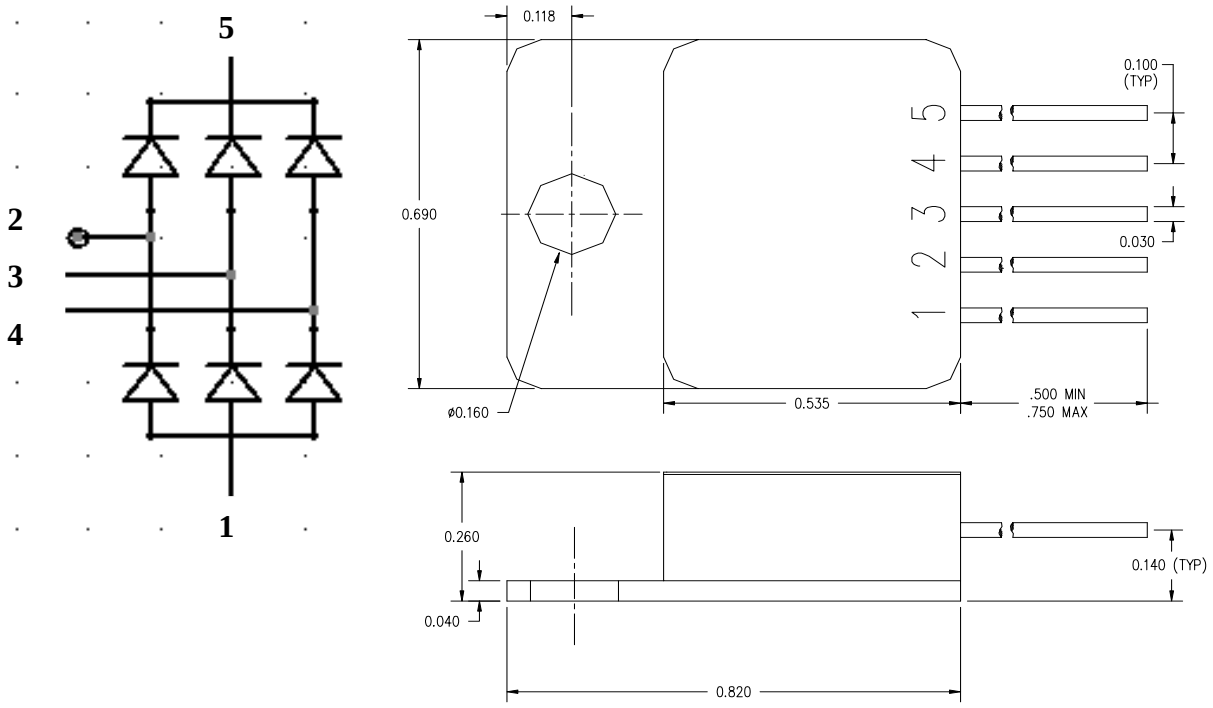
Application Note: Customers should be aware that at the current stage of technical development of SiC, the reverse avalanche capabilities of the device are limited.

Customer designs will need to accommodate these limitations and avoid exposure of the device to this and other potentially damaging conditions in their applications.

SENSITRON

Technical Data
Datasheet 4288, Rev. –

MECHANICAL DIMENSIONS (inches) (MO-078)



PINOUT TABLE

DEVICE TYPE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5
3-PHASE FULL WAVE BRIDGE	DC(-)	AC(1)	AC(2)	AC(3)	DC(+)

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Technical Data
Datasheet 4288 REV. –

Forward and Reverse Characteristics of Individual Diode

Figure 1. Forward Characteristics

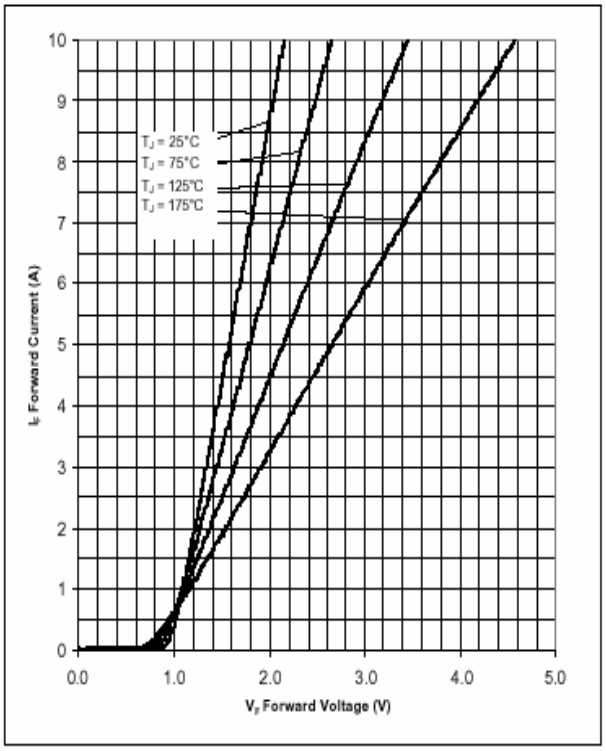
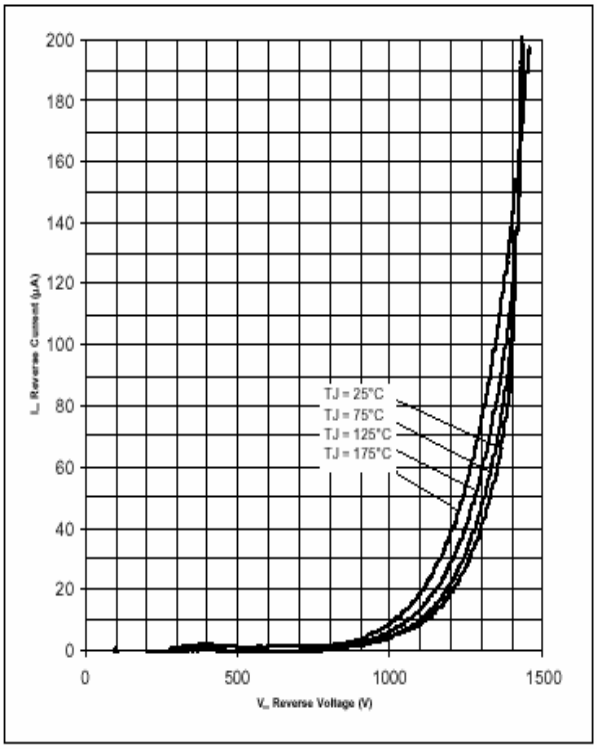


Figure 2. Reverse Characteristics



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