

Technical Data
Datasheet 4308 REV. C

Silicon Carbide Single Phase Full Wave Bridge

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

FEATURES:

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

MAXIMUM RATINGS

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

RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	1200	Volts
MAXIMUM DC OUTPUT CURRENT (With $T_C = 65\text{ }^\circ\text{C}$) WHEN USED AS A BRIDGE	I_O	10	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT (t = 8.3ms, Sine) per leg, $T_C = 25\text{ }^\circ\text{C}$	I_{FRM}	30	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT (t = 10 μ s, pulse) per leg, $T_C = 25\text{ }^\circ\text{C}$	I_{FSM}	100	Amps
MAXIMUM JUNCTION CAPACITANCE ($V_f=5\text{V}$) per leg	C_J	450	pF
MAXIMUM POWER DISSIPATION, $T_C = 25\text{ }^\circ\text{C}$	P_d	30	W
MAXIMUM THERMAL RESISTANCE, Junction to Case (Connected as a BRIDGE)	$R_{\theta JC}$	1.0	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +175	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

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

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**Technical Data
Datasheet 4308 REV. C**

Note: The following curves are for individual legs of the bridge.

Figure 1. Forward Characteristics

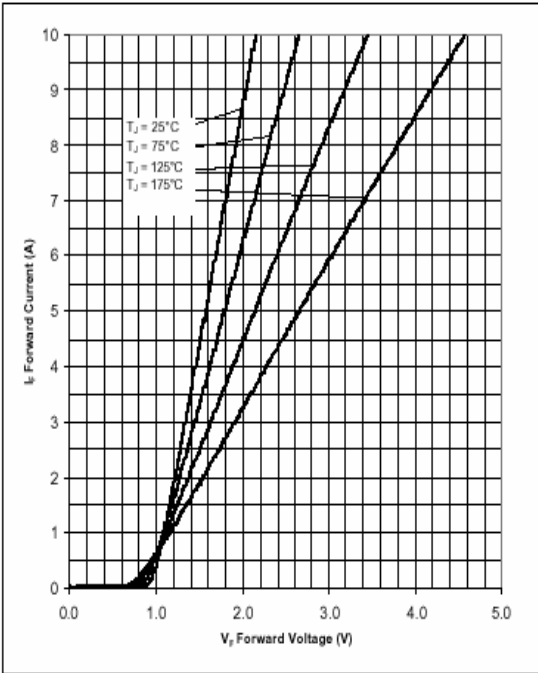
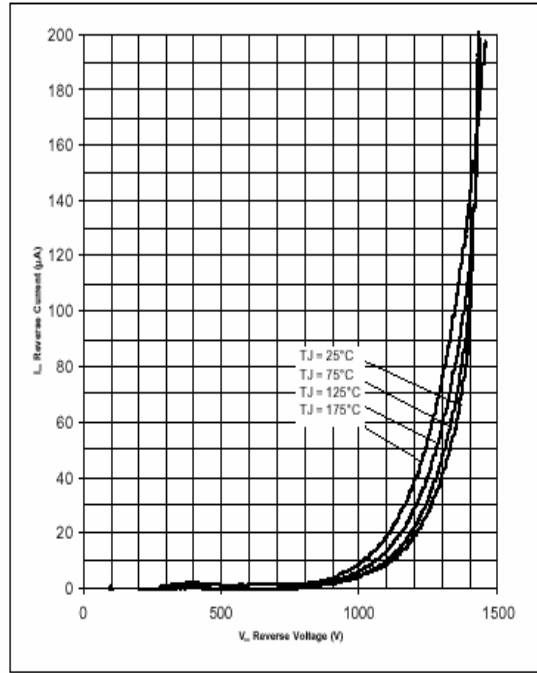
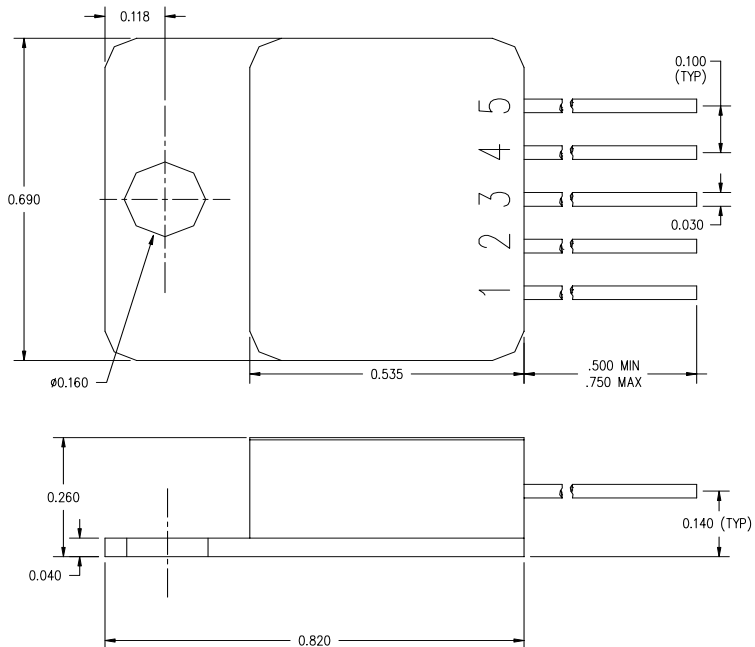
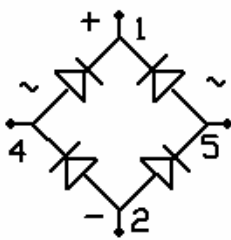


Figure 2. Reverse Characteristics



MECHANICAL DIMENSIONS (inches)

MO-078



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Technical Data
Datasheet 4308 REV. C

PINOUT TABLE

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