

Technical Data  
Datasheet 5015, Rev -

## HIGH VOLTAGE SILICON CARBIDE SINGLE PHASE FULL WAVE BRIDGE

**DESCRIPTION:** 2500-VOLT, 20 AMP POWER SILICON CARBIDE SINGLE PHASE FULL WAVE BRIDGE

**FEATURES:**

- NO RECOVERY TIME OR REVERSE RECOVERY LOSSES
- NO TEMPERATURE INFLUENCE ON SWITCHING BEHAVIOR
- 15000-VOLT HI-POT CAPABILITY

**MAXIMUM RATINGS**

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

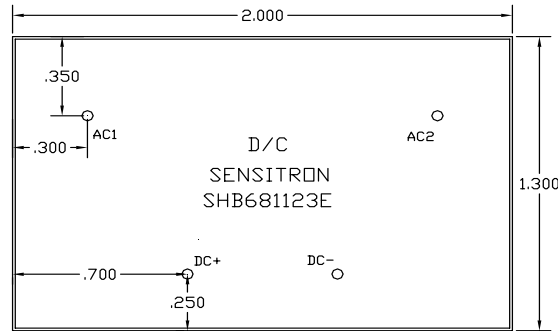
RATING	SYMBOL	MAX.	UNITS
PEAK INVERSE VOLTAGE	PIV	2500	Volts
MAXIMUM DC OUTPUT CURRENT (With $T_C = 65\text{ }^\circ\text{C}$ ) WHEN USED AS A BRIDGE	$I_O$	20	Amps
MAXIMUM REPETITIVE FORWARD SURGE CURRENT (t = 8.3ms, Sine) per leg, $T_C = 25\text{ }^\circ\text{C}$	$I_{FRM}$	80	Amps
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT (t = 10 $\mu$ s, pulse) per leg, $T_C = 25\text{ }^\circ\text{C}$	$I_{FSM}$	250	Amps
MAXIMUM JUNCTION CAPACITANCE ( $V_r=5V$ ) per leg	$C_T$	700	pF
MAXIMUM POWER DISSIPATION, $T_C = 25\text{ }^\circ\text{C}$	$P_d$	400	W
MAXIMUM THERMAL RESISTANCE, Junction to Case	$R_{\theta JC}$	0.2	$^\circ\text{C/W}$
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**

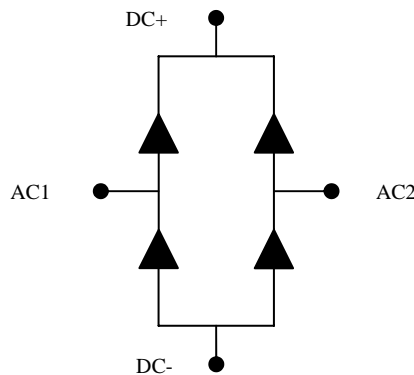
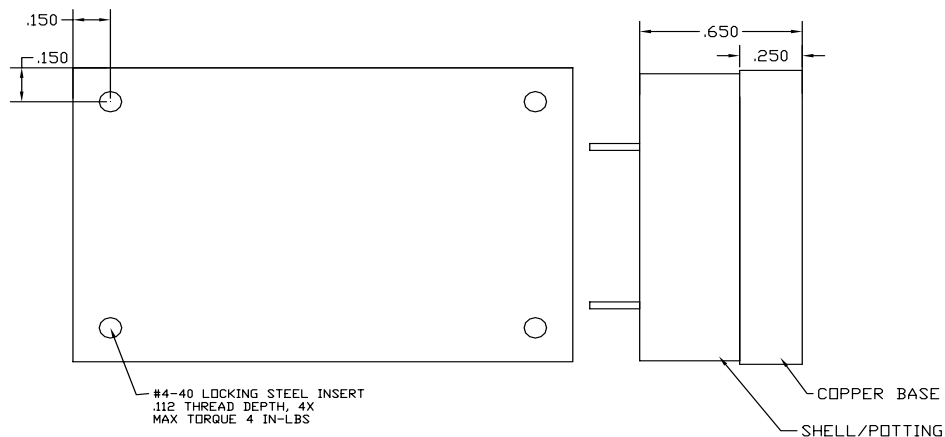
CHARACTERISTIC	TYP	MAX.	UNITS
MAXIMUM FORWARD VOLTAGE DROP ( $I_f = 20A$ PER LEG) $V_f$ $T_J=25\text{ }^\circ\text{C}$ $T_J=150\text{ }^\circ\text{C}$	5.0 7.5	5.50 9.00	Volts
MAXIMUM REVERSE CURRENT (2500V PIV PER LEG) $I_r$ $T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	0.05 0.10	0.40 2.00	mA
TOTAL CAPACITANCE CHARGE ( $V_R=2500V$ , $I_f=5A$ , $di/dt=500A/\mu s$ and $T_J=25\text{ }^\circ\text{C}$ ) $Q_C$ per leg	60	N/A	nC

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**MECHANICAL DIMENSIONS (inches)**



**SCB-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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