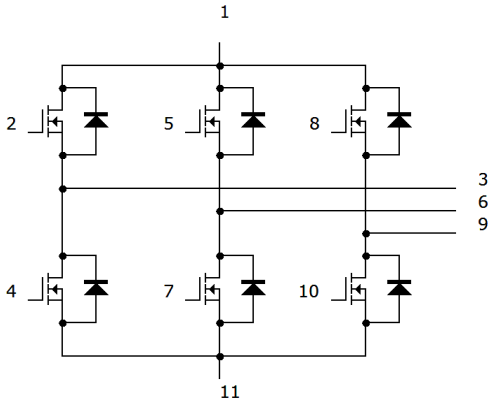
TECHNICAL DATA
DATA SHEET 5411, REV. -

1200 VOLT, 30 AMP THREE PHASE SILICON CARBIDE MOSFET BRIDGE

FEATURES:

- 80mΩ typical on-resistance
- Isolated base plate
- Aluminum Nitride substrate
- Light Weight Low Profile Standard Package
- High Temperature Engineering Plastic Shell Construction

Schematic Diagram:



MAXIMUM RATINGS ALL RATINGS ARE @ T_C = 25 °C UNLESS OTHERWISE SPECIFIED.

RATING	SYMBOL	MAX	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	1200	V
CONTINUOUS DRAIN CURRENT	I_D	30	A
CONTINUOUS DRAIN CURRENT, T_C = 100 ^{O}C	I_D	19	A
PULSED DRAIN CURRENT (t ≤10μs, dc ≤1%)	$I_{D,}$ pulse	90	A
GATE - SOURCE VOLTAGE	V_{GSS}	-5 to 25	V
MAXIMUM POWER DISSIPATION, T_C = 25 ^{O}C (PER MOSFET)	P_d	125	W
MAXIMUM THERMAL RESISTANCE	$R_{\theta JC}$	1.0	°C/W
MAXIMUM STORAGE TEMPERATURE RANGE	Tstg	-55 to 150	°C
MAXIMUM OPERATING TEMPERATURE RANGE	Top	-55 to 150	°C

ELECTRICAL CHARACTERISTICS

ALL RATINGS ARE @ T_C = 25 °C UNLESS OTHERWISE SPECIFIED.

CHARACTERISTIC	MIN	TYP	MAX	UNITS
DRAIN - SOURCE BREAKDOWN VOLTAGE (VGS = 0V, ID = 0.1mA)	1200			V
ZERO GATE VOLTAGE DRAIN CURRENT (VDS = 1200V, VGS = 0V)			100	µA
GATE - SOURCE LEAKAGE CURRENT (VGS = +20V, VDS = 0V)			250	nA
GATE THRESHOLD VOLTAGE (VDS = VGS, ID = 1mA)		2.5	4.0	V
STATIC DRAIN – SOURCE ON - STATE RESISTANCE (VGS = 18V, ID = 10A) Tj = 150^{0}C		80 110	110 140	mΩ
TRANSCONDUCTANCE (VDS = 20V, ID = 20A)		7.3		S
INPUT CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		1915		pF
OUTPUT CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		120		pF
REVERSE TRANSFER CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		13		pF
Turn-on delay time (VDD = 800V, VGS = +20V/0V, ID = 20A, RG = 2.5Ω)		13		ns
Rise time (VDD = 800V, VGS = +20V/0V, ID = 20A, RG = 2.5Ω)		24		ns
Turn-off delay time (VDD = 800V, VGS = +20V/0V, ID = 20A, RG = 2.5Ω)		40		ns
Fall time (VDD = 800V, VGS = +20V/0V, ID = 20A, RG = 2.5Ω)		38		ns
Total gate charge (VDD = 800V, VGS = 20V, ID = 20A)		91		nC
Gate - Source charge (VDD = 800V, VGS = 20V, ID = 20A)		24		nC
Gate - Drain charge (VDD = 800V, VGS = 20V, ID = 20A)		43		nC
FORWARD VOLTAGE (Vgs = -5V, Is = 10A)		3.5		V
FORWARD VOLTAGE (Vgs = -2V, Is = 10A)		3.1		V
REVERSE RECOVERY TIME (If = 20A, Vr = 800V, di/dt = 100A/µs, VGS = -5V)		220		ns
REVERSE RECOVERY CHARGE (If = 20A, Vr = 800V, di/dt = 100A/µs, VGS = -5V)		142		nC
PEAK REVERSE RECOVERY CURRENT (If = 20A, Vr = 800V, di/dt = 100A/µs, VGS = -5V)		2.3		A

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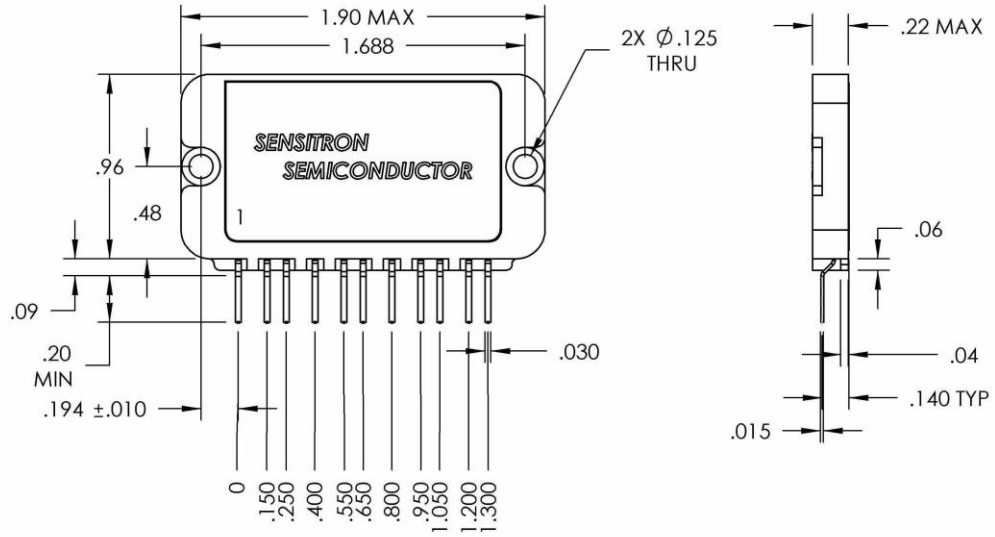
Mechanical Outline:

Package: EPAK1



NOTES:

1. TOLERANCE UNLESS OTHERWISE NOTED:
   .XX = ±.010
   .XXX = ±.005
2. MAXIMUM MOUNTING TORQUE = 4 IN-LB
3. PRE-TORQUE BOTH FASTENERS TO 2 IN-LB MAX BEFORE APPLYING FINAL TORQUE.
4. CONTACT FACTORY FOR THERMAL INTERFACE MATERIAL SUGGESTIONS AND COMPATIBILITY.