

SPMQ461-01

200 AMP, 600 VOLTS HALF BRIDGE IGBT POWER MODULE FOR SPACE APPLICATIONS

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPMQ461- 01 S

L Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Voltage

01 = 600 Volts

FEATURES:

- High current switching for motor drives and inverters for space applications
- Push-pull configuration with freewheeling diodes
- Low saturation voltage at high currents
- Low mechanical stress design
- Hermetically sealed construction for aerospace applications
- Excellent thermal management
- Full power screened hermetic devices
- Non punch-through (NPT) IGBT technology
- Low switching losses
- Easy to parallel for higher current capacity
- TX, TXV, and S-level screening available ^{2/}
- Consult factory for other bridge configurations and terminal styles

MAXIMUM RATINGS ^{3/}	SYMBOL	VALUE	UNIT
Collector to Emitter Voltage, per leg	V_{CES}	600	Volts
Gate to Collector Voltage	V_{GES}	± 20	Volts
Continuous Collector Current, per leg	I_{C1} I_{C2}	200 100	Amps
Pulse Collector Current, per leg ^{4/}	I_{CM}	300	Amps
Clamped Inductive Load Current, per leg $T_B = 125^\circ\text{C}$, $V_{CC} = 480\text{V}$, $V_{GE} = 15\text{V}$, $L = 30\mu\text{H}$, $R_G = 10\Omega$	I_{LM}	100	Amps
Reverse Voltage Avalanche Energy, per leg ^{4/}	E_{ARV}	5.6	mJ
Operating and Storage Temperature	T_{OP} & T_{STG}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction to Base, per leg	θ_{JB}	0.28	$^\circ\text{C/W}$
Total Module Dissipation, per leg @ $T_B = 25^\circ\text{C}$ Dissipation Derating from $T_B = 25^\circ\text{C}$ to $T_B = 150^\circ\text{C}$, per leg	P_{D1} P_{D2}	625 5	W $\text{W}/^\circ\text{C}$

NOTES:

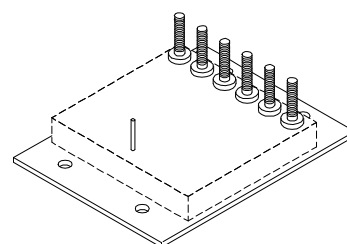
^{1/} For ordering information, price, operating curves, and availability- contact factory.

^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

^{3/} Unless otherwise specified, all electrical characteristics @ 25°C .

^{4/} Pulse duration limited by T_{JMAX} ; repetitive rating.

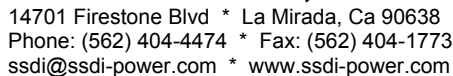
ASPM



NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: PM0002C

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ELECTRICAL CHARACTERISTICS (per leg) ^{3/}

Technical drawing of a 6-pin vacuum tube socket, showing side, top, and circuit views with dimensions and labels.

Side View Dimensions:

- Overall height: 3.00
- Top flange thickness: .39 MAX
- Flange width: .062
- Base thickness: .96

Labels:

- COMPONENT ENVELOPE
- Sn63Pb37 COATED OVER Ni PLATING COPPER TERMINAL Ø.040
- Ni PLATED BeCu TERMINAL 6 PLACES
- Ni PLATED CuMo BASE

Top View Dimensions:

- Overall width: 2.300
- Pin pitch (center-to-center): 1.200
- Pin diameter: 4x Ø.156
- Pin diameter (bottom): 5x .35 (=1.75)
- Pin diameter (bottom): .28
- Pin diameter (bottom): .88
- Pin diameter (bottom): .70
- Pin diameter (bottom): .25

Labels:

- G
- C21 C22 E2 E1 C12 C11
- #4-40 UNC-2A Ø.250 SHOULDER 6 PLACES

Circuit Diagram:

The circuit diagram shows a 6-pin vacuum tube socket with pins labeled C11, C12, E1, E2, C21, and C22. The internal connections are as follows:

- C11 is connected to C21.
- C12 is connected to C22.
- E1 is connected to E2.
- Q1 and Q2 are connected to E1 and E2.
- CR1 and CR2 are connected to C11 and C12.
- G is connected to the common ground.

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