PRELIMINARY

SPMQ496-01

SOLID STATE DEVICES, INC.
14005 Stage Road * Santa Fe Springs, Ca 90670
Phone: (562) 404-4474 * Fax: (562) 404-1773

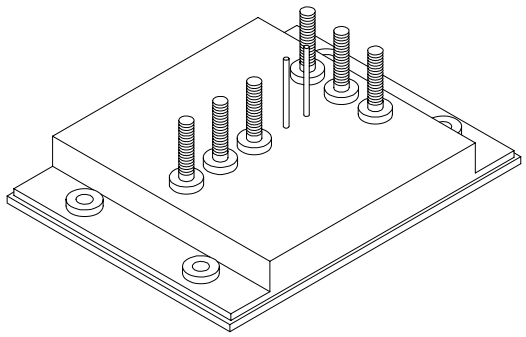
DESIGNER'S DATA SHEET

400 AMP/600 VOLTS IGBT POWER MODULE FOR SPACE APPLICATIONS

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.**
- **Hermetic Sealed Construction for Aerospace Applications.**
- **Excellent Thermal Management.**
- **Full Power Screened Hermetic Discretes.**
- **TX, TXV, and S-Level Screening Available.**
- **Consult Factory for:**
  - **Faster Switching Speeds;**
  - **Other Bridge Configurations and Terminal Styles.**

ASPM

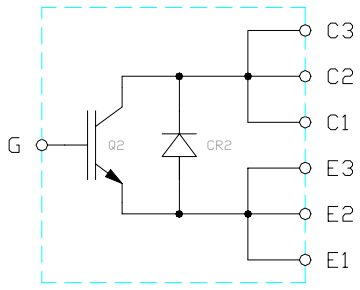


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Collector to Emiter Voltage	V_{CES}	600	Volts
Gate to Collector Voltage	V_{GES}	±20	Volts
Continuous Collector Current $T_B = 25^oC$ $T_B = 90^oC$	I_{C1} I_{C2}	400 200	Amps
Pulse Collector Current 1/	I_{CM}	600	Amps
Clamped Inductive Load Current (T_B = 125 °C, V_{CC} = 480V, V_{GE} = 15V, L = 30uH, R_G = 10Ω	I_{LM}	200	Amps
Reverse Voltage Avalange Energy 1/ (I_C = 200A)	E_{ARV}	5.6	mJ
Operating and Storage Temperature	T_{OP} & T_{STG}	-55 TO +150	°C
Thermal Resistance, Junction to Base	Θ_{JB}	0.14	°C/W
Total Module Dissipation @$T_B = 25^oC$ **Dissipation Derating from $T_B = 25^oC$ to $T_B = 150^oC$**	P_{D1} P_{D2}	1250 10	W W/°C

1/ Pulse Duration Limited by T_{JMAX}; Repetative Rating

ELECTRICAL SCHEMATIC



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

DATA SHEET #: PM0010A

SPMQ496-01

PRELIMINARY

SOLID STATE DEVICES, INC.
14005 Stage Road * Santa Fe Springs, Ca 90670
Phone: (562) 404-4474 * Fax: (562) 404-1773

ELECTRICAL CHARACTERISTICS @ T_J =25°C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	MAX	UNIT
Collector - Emitter Breakdown Voltage (I_{CES} = 250µA, V_{GE} = 0V)		BV_{CES}	600	-	Volts
Gate - Emitter Threshold Voltage (I_C = 5mA, V_{CE} = V_{GE})		$V_{GE(th)}$	2.0	6	Volts
Collector-Emitter Saturation Voltage (I_C = 200A, V_{GE} = 15V)	(T_B = 25°C) (T_B = 90°C)	$V_{CE(sat)2}$ $V_{CE(sat)1}$	- -	3.1 2.5	Volts
Gate-Emitter Leakage Current (V_{GE} = ±20V, V_{CE} = 0V)		I_{GES}	-	2.0	µAmps
Collector Leakage Current (V_{CE} = 480V, V_{GE} = 0V)	(T_B = 25°C) (T_B = 125°C)	I_{CES1} I_{CES1}	- -	225 20	µAmps mAmps
Anti-Parallel Diode Forward Voltage (I_F = 200A, T_B = 25°C)		V_F	-	1.6	Volts
Insulation Resistance (All terminals to Base @1500V)		R_{INSUL1}	1	-	GΩ

PACKAGE OUTLINE: ASPM

Tolerances
(Unless specified):

.XX ±.03
.XXX ±.010