



**Solid State Devices, Inc.**

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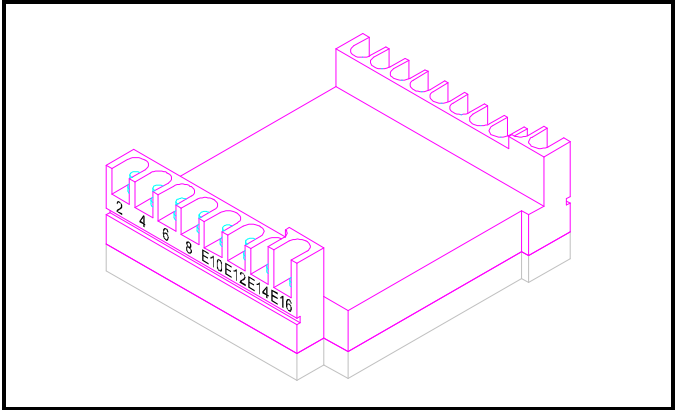
**SPA547-01**

**HYPERFAST HIGH VOLTAGE  
DIODE BRIDGE ASSEMBLY  
10.5 kV / 1.5A**

**Designer's Data Sheet**

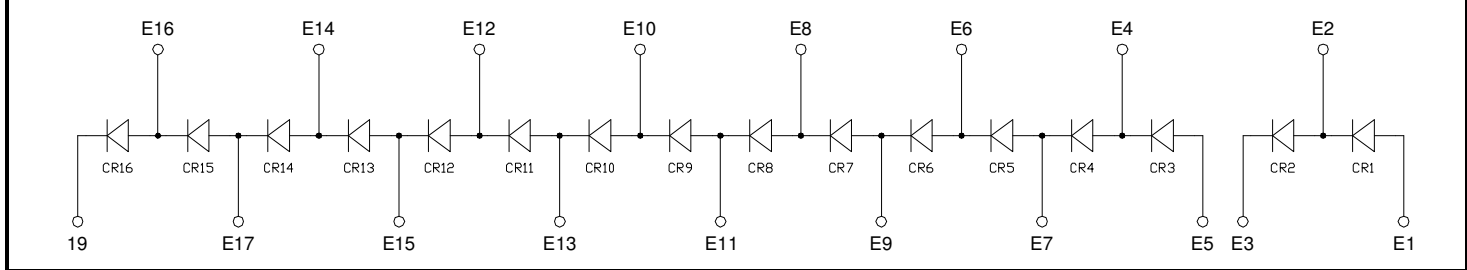
**FEATURES:**

- 100kHz Operation
- Airborne Application up to 50,000 ft
- High Efficiency
- Low EMI / Corona Discharge
- Thermally Conductive Aluminum Base Plate
- Helicoil Mounting Inserts
- ESS Screening Available. Consult Factory.
- Exterior Surfaces Sandblasted to Promote Adhesion of Encapsulation in Subsequent Assembly



MAXIMUM RATINGS (Per Leg, Unless Otherwise Specified)	Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	$V_{RRM}$ $V_R$	3,000	Volts
Half Wave Rectified Forward Current Averaged Over Fully Cycle (Resistive Load, 60 Hz, Sine Wave, $T_C = 100^\circ\text{C}$ )	$I_O$	0.8	Amps
Peak Surge Current ( $T_C = 55^\circ\text{C}$ , 8.3 ms Pulse, Superimposed on Rated Current at Rated Voltage)	$I_{FSM}$	40	Amps
Maximum Individual Partial Discharge ( $V = 15\text{kV}$ , $t = 1\text{min}$ , All Terminals in Common to Base)		10	pC
Maximum Dielectric Voltage	$V_{DIEL}$	15,000	Volts
Operating Temperature Range (Base plate)	$T_{OP\ BASE}$	-45 to +100	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance (Per Diode) Junction to Case	$R_{\theta JC}$	15	$^\circ\text{C/W}$

**Electrical Schematic**



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



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# SPA547-01

ELECTRICAL CHARACTERISTICS (Per Leg)	Symbol	Max	Unit
<b>Max Instantaneous Forward Voltage Drop</b> ( $I_F = 1.0 \text{ Adc}$ , $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	8.2	V
<b>Max Reverse Leakage Current</b> ( $V_R = 3\text{kV}$ , $T_C = 25^\circ\text{C}$ )	$I_{R1}$	1	$\mu\text{A}$
<b>Max Reverse Leakage Current</b> ( $V_R = 3\text{kV}$ , $T_C = 100^\circ\text{C}$ )	$I_{R2}$	50	$\mu\text{A}$
<b>Maximum Junction Capacitance</b> ( $f = 1 \text{ MHz}$ , $V_R = 100 \text{ V}$ , $T_C = 25^\circ\text{C}$ )	$C_J$	12	pF
<b>Maximum Pin to Ground Capacitance</b> ( $f = 1 \text{ MHz}$ , $V_R = 100 \text{ V}$ , $T_C = 25^\circ\text{C}$ )	$C_B$	30	pF
<b>Maximum Reverse Recovery Time</b> ( $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{RR} = 0.25\text{A}$ , $T_C = 25^\circ\text{C}$ )	$t_{RR}$	40	nsec

### NOTES:

1. Maximum forward voltage measured with instantaneous forward pulse of 300  $\mu\text{sec}$  minimum.
2. For information on curves, contact the Factory Representative for Engineering Assistance

