



**Solid State Devices, Inc.**

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**SPA612 Series**

**150 A / 600 V  
 THREE PHASE BRIDGE  
 RECTIFIER ASSEMBLY**

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information**<sup>1/</sup>

**SPA612**

┌───┐ ┌───┐ ┌───┐ **Screening**<sup>2/</sup>  
 │ │ │ │ │ │  
 └───┘ └───┘ └───┘  
 \_\_\_\_\_ = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level

┌───┐ **Recovery Time**  
 │ │  
 └───┘  
 \_\_\_\_\_ = Standard Recovery

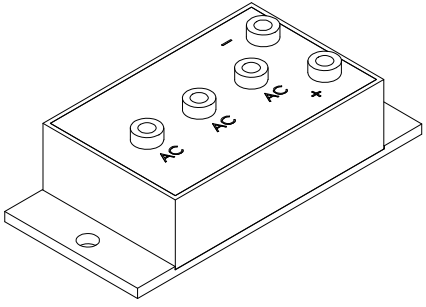
┌───┐ **Voltage/Family**  
 │ │  
 └───┘  
**C = 400 V**  
**D = 500 V**  
**E = 600 V**

- Features:**
- Average Output Current 150 Amps
  - High temperature operation
  - Anodized Aluminum Base
  - High Power density 40 W / sq in
  - TX, TXV & S Level Screening Available
  - Standard, Fast, & Hyper Fast Versions Available. Contact Factory.
  - Higher Voltage Versions Available. Contact Factory.

<b>Maximum Ratings</b> <sup>3/</sup>		<b>Symbol</b>	<b>Value</b>	<b>Units</b>
<b>Peak Inverse Voltage</b>	SPA612C	<b>PIV</b>	400	<b>Volts</b>
	SPA612D		500	
	SPA612E		600	
<b>Average Rectified Output Current</b> (T <sub>C</sub> = Case Temperature)	T <sub>C</sub> = 55°C	<b>I<sub>O1</sub></b>	150	<b>Amps</b>
	T <sub>C</sub> = 100°C	<b>I<sub>O2</sub></b>	100	
	T <sub>C</sub> = 130°C	<b>I<sub>O3</sub></b>	60	
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, T <sub>C</sub> = 25°C)		<b>I<sub>FSM</sub></b>	1000	<b>Amps</b>
<b>Operating &amp; Storage Temperature</b>		<b>T<sub>op</sub> &amp; T<sub>stg</sub></b>	-65 to 150	<b>°C</b>
<b>Maximum Thermal Resistance, Junction to Case</b>		<b>R<sub>θJC</sub></b>	0.4	<b>°C/W</b>

- Notes:**
- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ Screened to MIL-PRF-19500.
- 3/ Unless Otherwise Specified, All Maximum Ratings/Electrical Characteristics @25°C.

**SPA612 Series**





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# SPA612 Series

Electrical Characteristic <sup>3/</sup>		Symbol	Min	Typ	Max	Units
<b>Maximum Forward Voltage Per Leg</b> (T <sub>A</sub> = 25°C, pulsed)	I <sub>F</sub> = 150 A	V <sub>F1</sub>	-	1.08	1.50	<b>Volts</b>
	I <sub>F</sub> = 100 A	V <sub>F2</sub>	-	1.02	1.30	
	I <sub>F</sub> = 60 A	V <sub>F2</sub>	-	0.96	1.05	
<b>Maximum Forward Voltage Per Leg</b> (T <sub>A</sub> = 125°C, pulsed)	I <sub>F</sub> = 150 A	V <sub>F1</sub>	-	0.98	1.20	<b>Volts</b>
	I <sub>F</sub> = 100 A	V <sub>F2</sub>	-	0.93	1.10	
	I <sub>F</sub> = 60 A	V <sub>F2</sub>	-	0.85	0.95	
<b>Reverse Leakage Current</b> (Rated PIV, T <sub>A</sub> = 25°C)		I <sub>R1</sub>	-	5	50	<b>μA</b>
<b>Reverse Leakage Current</b> (Rated PIV,)	T <sub>A</sub> = 100°C	I <sub>R2</sub>	-	50	500	<b>μA</b>
	T <sub>A</sub> = 125°C	I <sub>R3</sub>	-	125	1000	
<b>Isolation Resistance</b>	1500V	R <sub>ISO</sub>	100	---	---	<b>MΩ</b>
<b>Reverse Recovery Time</b> (I <sub>F</sub> = 500 mA, I <sub>R</sub> = 1 A, I <sub>RR</sub> = 250 mA T <sub>A</sub> = 25°C (Measured on discrete rectifiers prior to assembly)		trr	—	2.5	5.0	<b>us</b>

**SPA612 Package Outline:**

