



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
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**SPD4942 Thru SPD4948 Series**

**1 Amp, 150-200 nsec, 200-1000 V Fast Recovery Rectifier**

**Designer's Data Sheet**

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

**SPD**    **Screening<sup>2/</sup>**  
 — = Not Screened  
 TX = TX Level  
 TXV = TXV  
 S = S Level (for SM, use -S)

**Package Type**  
 — = Axial Leaded  
 SM = Surface Mount Round Tab  
 SMS = Surface Mount Square Tab

**Voltage**  
 4945 = 500V  
 4942 = 200V      4946 = 600V  
 4943 = 300V      4947 = 800V  
 4944 = 400V      4948 = 1000V

- Features:**
- Fast Recovery: 150-200 nsec maximum
  - Low Reverse Leakage Current
  - Single Chip Construction
  - PIV to 1000 Volts
  - Hermetically Sealed
  - High Surge Rating
  - Low Thermal Resistance
  - Replacement for 1N4942 – 1N4948
  - TX, TXV, and Space Level Screening Available<sup>2/</sup>

Maximum Ratings	Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage</b>	SPD4942	200	Volts
	SPD4943	300	
	SPD4944	400	
	SPD4945	500	
	SPD4946	600	
	SPD4947	800	
	SPD4948	1000	
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz, Sine Wave, T <sub>A</sub> = 25 °C)	<b>I<sub>o</sub></b>	1	Amps
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave Superimposed on I <sub>o</sub> , allow junction to reach equilibrium between pulses, T <sub>A</sub> = 25 °C)	<b>I<sub>FSM</sub></b>	25	Amps
<b>Operating &amp; Storage Temperature</b>	<b>T<sub>OP</sub> &amp; T<sub>STG</sub></b>	-65 to +175	°C
<b>Maximum Thermal Resistance</b> Junction to Leads, L-3/8"	<b>R<sub>θJC</sub></b>	35	°C/W

**NOTES:**

- <sup>1/</sup> For Ordering Information, Operating Curves, Price, and Availability- Contact Factory.  
<sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flows Available on Request.





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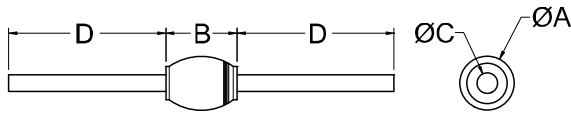
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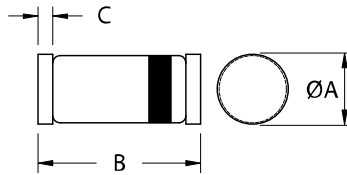
Electrical Characteristics	Symbol	Value	Units
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 1\text{Adc}$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	1.3	$V_{DC}$
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 1\text{Adc}$ , $T_A = -55^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	1.5	$V_{DC}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ minimum pulse)	$I_R$	1.0	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 100^\circ\text{C}$ , 300 $\mu\text{s}$ minimum pulse)	$I_R$	20	$\mu\text{A}$
<b>Reverse Recovery Time</b> ( $I_F = 500\text{ mA}$ , $I_R = 1\text{ Amp}$ , $I_{RR} = 250\text{ mA}$ , $T_A = 25^\circ\text{C}$ )	$t_{RR}$	150	nsec
		200	
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )	$C_J$	20	pF

**CASE OUTLINE:  
Axial**



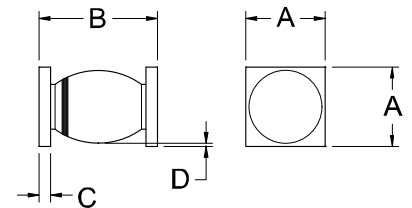
Dimensions		
DIM	MIN	MAX
A	.100"	.150"
B	---	.180"
C	.027"	.033"
D	1.00"	---

**CASE OUTLINE:  
Surface Mount Round Tab**



Dimensions		
DIM	MIN	MAX
A	.095"	.105"
B	.185"	.205"
C	.015"	.035"

**CASE OUTLINE:  
Surface Mount Square Tab**



Dimensions		
DIM	MIN	MAX
A	.134"	.153"
B	.200"	.280"
C	.022"	.028"
D	.002"	---

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

**DATA SHEET #: RF0013E**

**DOC**