



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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**SPD6620 thru SPD6625 Series**

**1.5 - 2 AMP  
 ULTRA FAST RECOVERY RECTIFIER  
 200 – 1000 VOLTS  
 30 – 60 nsec**

- FEATURES:**
- Ultra Fast Reverse Recovery Time 30-60 ns Max<sup>4/</sup>
  - PIV to 1000 Volts (1200V Version Available)
  - Hermetically Sealed
  - Low Reverse Leakage Current
  - Rugged Single Chip Construction
  - For High Efficiency Applications
  - Available in Axial, Round Tab & Square Tab Versions
  - Metallurgically Bonded
  - TX, TXV, and S-Level Screening Available<sup>2/</sup>
  - Ruggedized Replacement for 1N6620 thru 1N6625, US

**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

└─ Package Type  
 \_ = Axial Leaded  
 SMS = Surface Mount Square Tab  
 SM = Surface Mount Round Tab<sup>6/</sup>

**Family**

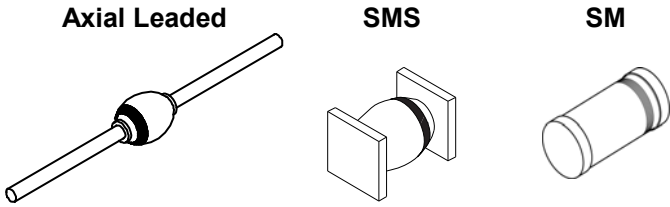
6620 = 200V, 2A	6623 = 800V, 1.5A
6621 = 400V, 2A	6624 = 900V, 1.5A
6622 = 600V, 2A	6625 = 1000V, 1.5A

**MAXIMUM RATINGS <sup>3/</sup>**

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SPD6620	$V_{RRM}$ $V_{RWM}$ $V_R$	200	Volts
	SPD6621		400	
	SPD6622		600	
	SPD6623		800	
	SPD6624		900	
	SPD6625		1000	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_L = 25^\circ\text{C}$ )	SPD6620 thru SPD6622 SPD6623 thru SPD6625	$I_o$	2 1.5	Amps
Peak Surge Current <sup>5/</sup> (8.3 msec Pulse, Half Sine Wave Superimposed on $I_o$ , allow junction to reach equilibrium between pulses, $T_C = 25^\circ\text{C}$ )		$I_{FSM}$	20	Amps
Operating & Storage Temperature		$T_{OP}$ and $T_{STG}$	-65 to +175	$^\circ\text{C}$
Thermal Resistance,	Junction to Lead for Axial, $L = .375"$ Junction to End Tab	$R_{\theta JL}$ $R_{\theta JE}$	38 20	$^\circ\text{C/W}$

**NOTES:**

- <sup>1/</sup> For Ordering Information, Price, and Availability- Contact Factory.
- <sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
- <sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.
- <sup>4/</sup> Recovery Conditions:  $I_F = 0.5$  Amp,  $I_R = 1.0$  Amp rec. to .25 Amp.
- <sup>5/</sup> SPD6625-  $I_{FSM} = 15A$
- <sup>6/</sup> SM Package Available for SPD6620 - SPD6622





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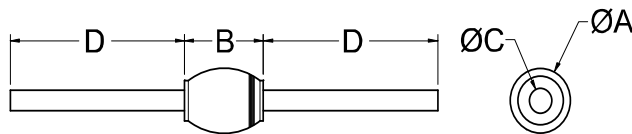
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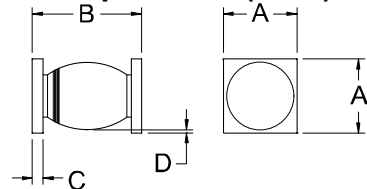
<b>ELECTRICAL CHARACTERISTICS <sup>3/</sup></b>						
<b>CHARACTERISTICS</b>		<b>SYMBOL</b>	<b>VALUE</b>	<b>UNIT</b>		
Instantaneous Forward Voltage Drop (300 $\mu$ s Pulse, $T_A = 25^\circ\text{C}$ )	SPD6620 thru SPD6622 @ 1.2A SPD6623 and SPD6624 @ 1.0A SPD6625 @ 1.0A	$V_{F1}$	1.40 1.55 1.75	Vdc		
	SPD6620 thru SPD6622 @ 2.0A SPD6623 and SPD6624 @ 1.5A SPD6625 @ 1.5A		$V_{F2}$		1.60 1.80 1.95	
Instantaneous Forward Voltage Drop (300 $\mu$ s Pulse, $T_A = -55^\circ\text{C}$ )	SPD6620 thru SPD6622 @ 2.0A SPD6623 and SPD6624 @ 1.5A SPD6625 @ 1.5A	$V_{F3}$	1.80 2.00 2.20	Vdc		
Maximum Reverse Leakage Current (Rated $V_R$ , 300 $\mu$ s Pulse Minimum, $T_A = 25^\circ\text{C}$ )	SPD6620 Thru SPD6624 SPD6625	$I_{R1}$	2.0	$\mu$ A		
Maximum Reverse Leakage Current (Rated $V_R$ , 300 $\mu$ s Pulse Minimum, $T_A = 100^\circ\text{C}$ )	SPD6620 Thru SPD6624 SPD6625	$I_{R2}$	150 200	$\mu$ A		
Junction Capacitance ( $V_R = 10\text{Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )	SPD6620 thru SPD6622 SPD6623 and SPD6624 SPD6625	$C_J$	24 17 13	pf		
Maximum Reverse Recovery Time ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{mA}$ )	SPD6620 thru SPD6622 SPD6623 and SPD6624 SPD6625		$t_{rr}$		30 50 60	ns

<b>DIMENSIONS (inches)</b>				<b>DIMENSIONS (inches)</b>			
DIM.	SPD6620 - SPD6622	SPD6623 - SPD6624	SPD6625	DIM.	SPD6620SMS - SPD6622SMS	SPD6623SMS - SPD6624SMS	SPD6625SMS
A	.100/.128	.100/.120	.115/.128	A	.128/.132	.128/.132	.128/.132
B	.140/.190	.140/.165	.140/.165	B	.190/.240	.190/.230	.190/.230
C	.027/.032	.027/.032	.028/.033	C	.023/.027	.023/.027	.023/.027
D	1.0 Min	1.0 min	1.0 min	D	.001 min	.001 min	.001 min

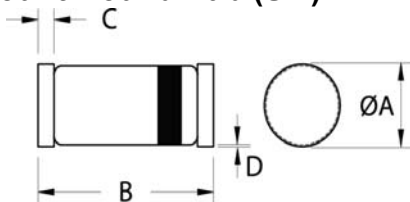
**AXIAL <sup>5/</sup>**



**Surface Mount Square Tab(SMS) <sup>5/</sup>**



**Surface Mount Round Tab (SM) <sup>6/</sup>**



<b>DIMENSIONS (inches)</b> SPD6620SM – SPD6622SM		
DIM.	MIN.	MAX.
A	.095"	.105"
B	.190"	.210"
C	.010"	.030"
D	---	---

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

**DATA SHEET #: RC0102F**

**DOC**