



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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**SPD502-SPD506  
 and  
 SPD502SMS - SPD506SMS**

**5 AMP  
 200-600 Volts  
 40 nsec  
 HYPER FAST RECTIFIER**

**DESIGNER'S DATA SHEET**

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

**SPD5** \_\_\_\_\_

├── Screening<sup>2/</sup> = None  
     TX = TX Level  
     TXV = TXV Level  
     S = S Level

└── Package  
     \_\_\_\_ = Axial Leaded  
     SMS = Surface Mount Square Tab

**Voltage**  
 02 = 200 V  
 03 = 300 V  
 04 = 400 V  
 05 = 500 V  
 06 = 600V

**Features:**

- Hyper Fast Recovery: 40 nsec Max.
- PIV to 600 Volts
- Low Forward Voltage Drop
- Void Free Construction
- Hermetically Sealed Surface Mount Package
- For High Efficiency Applications
- Single Chip Construction
- TX, TXV, and S-Level Screening Available<sup>2/</sup>

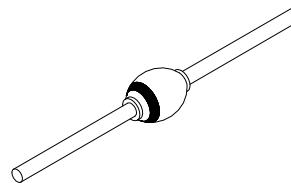
Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SPD502	$V_{RRM}$	200	Volts
	SPD503		300	
	SPD504	$V_{RWM}$	400	
	SPD505		500	
	SPD506	$V_R$	600	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_o$	5	Amps
Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ ; Allow Junction to Reach Equilibrium between Pulses, $T_A = 25^\circ\text{C}$ )		$I_{FSM}$	100	Amps
Operating & Storage Temperature		Top & Tstg	-65 to +175	°C
Maximum Thermal Resistance	Junction to Lead, $L=3/8''$	$R_{\theta JL}$	15	°C/W
	Junction to End Tab	$R_{\theta JE}$	10	

Notes:

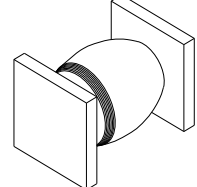
<sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability – Contact Factory.

<sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flows Available on Request.

**Axial Leaded**



**SMS**



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

**DATA SHEET #: RH0105D**

**DOC**



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**SPD502-SPD506  
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Electrical Characteristics	Symbol	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 5 \text{ A dc}$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)	$V_F$	1.6	Vdc
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 5 \text{ A dc}$ , $T_A = -55^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)	$V_F$	1.75	Vdc
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)	$I_R$	10	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 100^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)	$I_R$	1	mA
<b>Junction Capacitance</b> ( $V_R = 10 \text{ Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1 \text{ MHz}$ )	$C_J$	50	pF
<b>Reverse Recovery Time</b> ( $I_F = 500 \text{ mA}$ , $I_R = 1 \text{ A}$ , $I_{RR} = 0.25 \text{ A}$ , $T_A = 25^\circ\text{C}$ )	$t_{rr}$	40	nsec

**Case Outline: (Axial)**

DIMENSIONS		
DIM	MIN	MAX
A	.140"	.170"
B	.160"	.230"
C	.047"	.053"
D	1.00"	---

**Case Outline: Surface Mount Square Tab**

DIMENSIONS		
DIM	MIN	MAX
A	.172"	.180"
B	.195"	.270"
C	.020"	.035"
D	.002"	---