



PRELIMINARY

**SOLID STATE DEVICES, INC.**

14830 Valley View Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-7855 \* Fax: (562) 404-1773

**SPD48SM & SMS  
thru  
SPD51SM & SMS**

**200 mAMP  
50 - 125 VOLTS  
5 nsec  
HYPER FAST  
RECTIFIER**

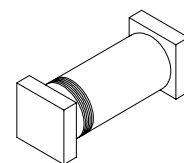
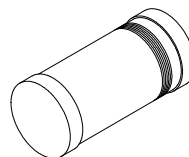
**Designer's Data Sheet**

**FEATURES:**

- **Hyper Fast Recovery: 5 nsec maximum**
- **Subminiature Surface Mount Package**
- **Square Tab Mounting (Round Tabs Available)**
- **Hermetically Sealed**
- **Planar Passivated Chip**
- **For High Efficiency Applications**
- **Replaces 1N4148 - 1N4151 types**
  
- **TX, TXV, and Space Level Screening Available**

**SURFACE MOUNT  
ROUND TAB  
"SM"**

**SURFACE MOUNT  
SQUARE TAB  
"SMS"**



<b>Maximum Ratings</b>		<b>SYMBOL</b>	<b>VALUE</b>	<b>UNITS</b>
<b>Peak Repetitive Reverse and DC Blocking Voltage</b>	<b>SPD48SM &amp; SMS</b>	$V_{RRM}$ $V_{RWM}$ $V_R$	<b>50</b>	<b>Volts</b>
	<b>SPD49SM &amp; SMS</b>		<b>75</b>	
	<b>SPD50SM &amp; SMS</b>		<b>100</b>	
	<b>SPD51SM &amp; SMS</b>		<b>125</b>	
<b>Average Rectified Forward Current</b> (Resistive Load, 60Hz, Sine Wave, $T_A = 25^\circ\text{C}$ )		<b><math>I_o</math></b>	<b>200</b>	<b>mAmps</b>
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$ )		<b><math>I_{FSM}</math></b>	<b>4</b>	<b>Amps</b>
<b>Operating and Storage Temperature</b>		<b><math>T_{OP} \&amp; T_{STG}</math></b>	<b>-65 TO +200</b>	<b><math>^\circ\text{C}</math></b>
<b>Maximum Thermal Resistance</b> Junction to End Tab		<b><math>R_{\theta JE}</math></b>	<b>0.35</b>	<b><math>^\circ\text{C}/\text{mW}</math></b>

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

**DATA SHEET #: RH0085C**

# SPD48SM & SMS thru SPD51SM & SMS

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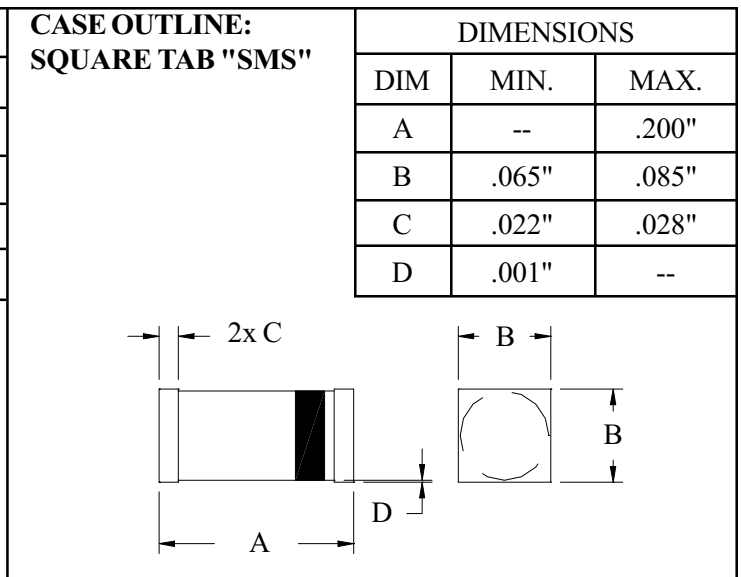
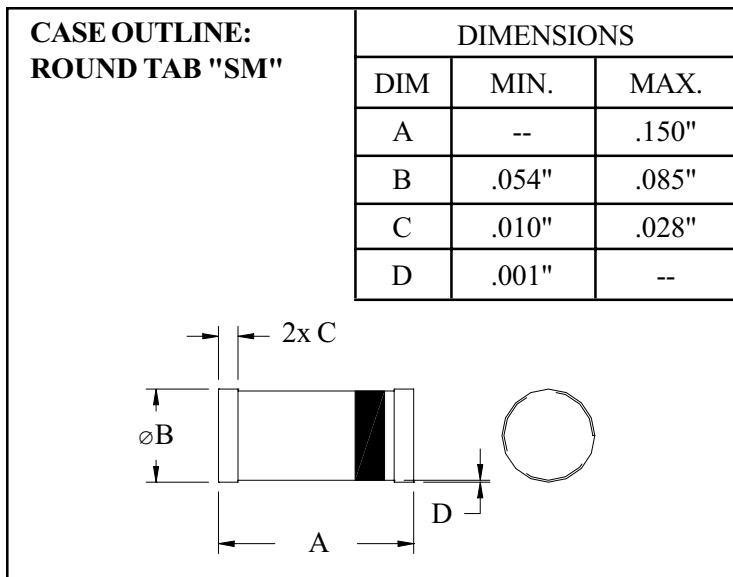


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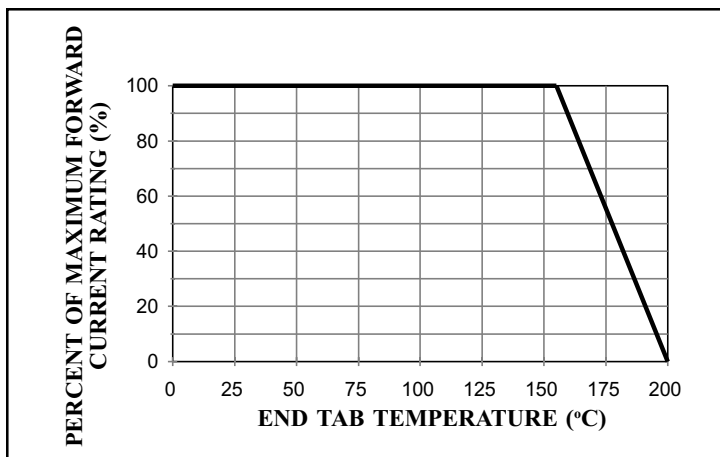
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Electrical Characteristics		SYMBOL	MAXIMUM	UNITS
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , 300 - 500 $\mu\text{s}$ Pulse)	$I_F = 10 \text{ mA}_{\text{DC}}$	$V_{F1}$	<b>1.0</b>	$V_{\text{DC}}$
	$I_F = 100 \text{ mA}_{\text{DC}}$		<b>1.2</b>	
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = -55^\circ\text{C}$ , 300 - 500 $\mu\text{s}$ Pulse)	$I_F = 10 \text{ mA}_{\text{DC}}$	$V_{F2}$	<b>1.1</b>	$V_{\text{DC}}$
	$I_F = 100 \text{ mA}_{\text{DC}}$		<b>1.3</b>	
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ minimum Pulse)		$I_{R1}$	<b>400</b>	<b>nA</b>
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 100^\circ\text{C}$ , 300 $\mu\text{s}$ minimum Pulse)		$I_{R2}$	<b>40</b>	$\mu\text{A}$
<b>Junction Capacitance</b> ( $V_R = 10 \text{ V}_{\text{DC}}$ , $T_A = 25^\circ\text{C}$ , $f = 1 \text{ MHz}$ )		$C_J$	<b>2.8</b>	<b>pF</b>
<b>Reverse Recovery Time</b> ( $I_F = 50 \text{ mA}$ , $I_R = 100 \text{ mA}$ , $I_{\text{RR}} = 25 \text{ mA}$ , $T_A = 25^\circ\text{C}$ )		$t_{\text{RR}}$	<b>5</b>	<b>nsec</b>



### TYPICAL OPERATING CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise specified)



### FORWARD VOLTAGE

