



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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## SDR7PF thru SDR7TF Series

### Designer's Data Sheet

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

SDR9

— — — —

#### Screening <sup>2/</sup>

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

#### Package Type

— = Axial Leaded

SMS = Surface Mount Square Tab

#### Recovery Time

F = Fast Recovery (200 nS max)

#### Voltage/Family

P = 1300V

R = 1400V

T = 1500V

**7.0 AMP  
FAST RECOVERY RECTIFIER  
1300 – 1500 VOLTS**

#### FEATURES:

- PIV to 1500 Volts
- Hermetically Sealed
- Low Reverse Leakage Current
- Single Chip Construction
- Replaces Larger DO-4 Rectifiers
- Low Thermal Resistance
- Available in Axial & Square Tab Versions
- TX, TXV, and S-Level Screening Available<sup>2/</sup>
- Standard, and Ultra Fast Recovery Versions Available- Contact Factory

#### MAXIMUM RATINGS <sup>3/</sup>

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SDR7PF	$V_{RRM}$	1300	Volts
	SDR7RF	$V_{RWM}$	1400	
	SDR7TF	$V_R$	1500	
Average Rectified Forward Current (Resistive Load, 60Hz, Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_o$	7.0	Amps
Peak Surge Current (8.3 ms pulse, half sine wave, superimposed on $I_o$ , allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$ )		$I_{FSM}$	70	Amps
Operating & Storage Temperature		$T_J$ and $T_{STG}$	-65 to +175	$^\circ\text{C}$
Thermal Resistance	Junction to Lead for Axial, L = .125"	$R_{\theta JL}$	8	$^\circ\text{C/W}$
	Junction to End Tab for Surface Mount	$R_{\theta JE}$	4	

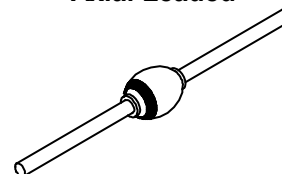
#### NOTES:

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

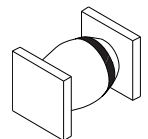
<sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flows Available on Request.

<sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.

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 #: RC0137A**

**DOC**



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ELECTRICAL CHARACTERISTICS <sup>3/</sup>				
CHARACTERISTICS		SYMBOL	MAXIMUM	UNIT
<b>Instantaneous Forward Voltage Drop</b> (pulsed)	$I_F = 7.0 \text{ Adc}, T_A = +25^\circ\text{C}$	$V_{F1}$	1.55	<b>Vdc</b>
	$I_F = 3.0 \text{ Adc}, T_A = +25^\circ\text{C}$	$V_{F2}$	1.30	
	$I_F = 7.0 \text{ Adc}, T_A = -55^\circ\text{C}$	$V_{F3}$	1.65	
<b>Reverse Leakage Current</b> ( $V_R = 80\%$ rated)	$T_A = +25^\circ\text{C}$	$I_{R1}$	2.0	<b><math>\mu\text{A}</math></b>
	$T_A = +100^\circ\text{C}$	$I_{R2}$	80	
<b>Minimum Breakdown Voltage</b> ( $I_R = 50 \mu\text{A}$ )	SDR7PF	<b><math>B_{VR}</math></b>	1300	<b>V (min)</b>
	SDR7RF		1400	
	SDR7TF		1500	
<b>Junction Capacitance</b> ( $V_R = 10 \text{ Vdc}, f = 1\text{MHz}, T_A = 25^\circ\text{C}$ )		<b><math>C_J</math></b>	50	<b>pF</b>
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}, I_R = 1\text{A}, I_{RR} = 250\text{mA}, T_A = 25^\circ\text{C}$ )		<b><math>t_{rr}</math></b>	200	<b>ns</b>

**Package Outlines:**

DIMENSIONS (inches)			DIMENSIONS (inches)		
DIM.	Minimum	Maximum	DIM.	Minimum	Maximum
A	---	.170	A (SMS)	.170	.180
B	.210	.250	B	.260	.300
C	.037	.043	C	.020	.030
D	1.000	---	D	.002	---

<p><b>AXIAL</b></p>	<p><b>SMS</b></p>
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