



**Solid State Devices, Inc.**

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# SDR6W series

## 6A 5 μsec 1400 to 1800 V Standard Recovery Rectifier

**DESIGNER'S DATA SHEET**

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

**SDR6**

└─ Screening

└─ Package

└─ Voltage

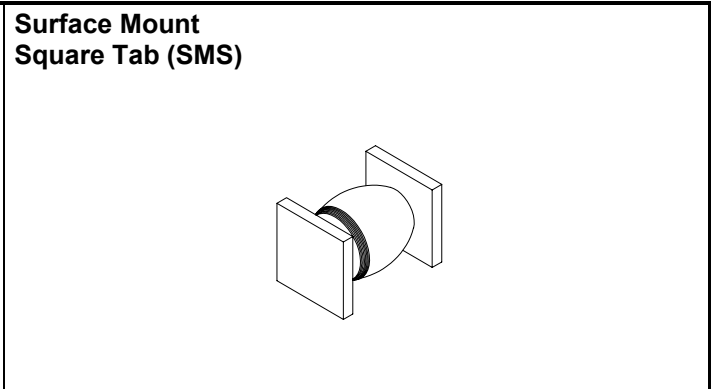
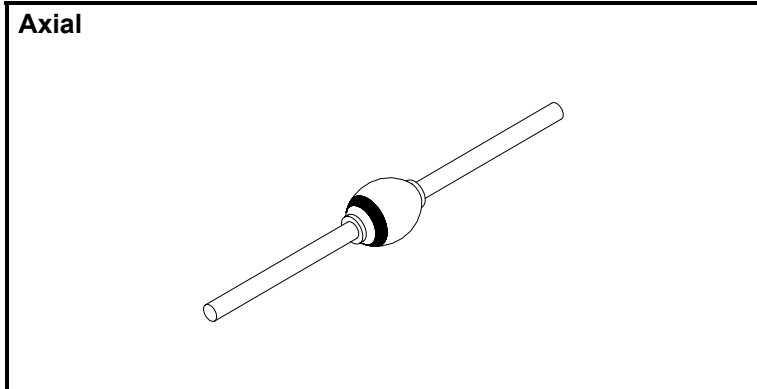
— = Not Screened  
 TX = TX Level  
 TXV = TXV  
 S = S Level

— = Axial w/ .050" lead diameter  
 A = Axial w/ .040" lead diameter  
 SMS = Surface Mount Square Tab

R = 1400 V  
 T = 1600 V  
 W = 1800 V

- Features:**
- Standard Recovery: 5 usec Maximum
  - High Surge Rating: 75 Amps @ 8.3 mS and 500A @ 100 μS
  - Low Reverse Leakage Current: 5 μA
  - Low Junction Capacitance: 40 pF
  - Low Thermal Resistance: 8 - 12 °C/W
  - Single Chip Construction
  - Available in Fast and Ultra Fast Speeds. Consult Factory.
  - TX, TXV, and S Level Screening iaw MIL-PRF-19500 Available

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse Voltage	SDR6R SDR6T SDR6W	$V_{RRM}$	1400 1600 1800	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave)	$T_L @ 1/8" = 25\text{ °C max}$ $T_{TAB} = 55\text{ °C max}$	$I_o$	6	Amps
Peak Surge Current <sup>2/</sup> (8.3 ms Pulse, Half Sine Wave)	$T_L @ 1/8" = 25\text{ °C max}$ $T_{TAB} = 55\text{ °C max}$	$I_{FSM}$	75	Amps
Operating & Storage Temperature		$T_{OP} \& T_{STG}$	-65 to +175	°C
Maximum Total Thermal Resistance	Axial @ 1/8 " SMS	$R_{\theta JL}$	12 8	°C/W



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

**DATA SHEET #: RC0094A**

**DOC**



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# SDR6W series

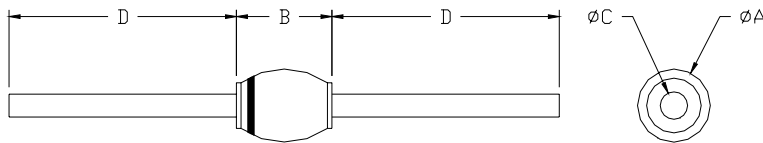
Electrical Characteristics		Symbol	Min	Typ	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 6A$ , 300 – 500 $\mu$ sec Pulse)	$T_A = 25^\circ C$	$V_{F1}$	—	1.10	1.16	$V_{DC}$
	$T_A = -55^\circ C$	$V_{F2}$	—	1.20	1.30	
<b>Reverse Leakage Current</b> (100% of rated $V_R$ , 300 $\mu$ s pulse min.)	$T_A = 25^\circ C$	$I_{R1}$	—	1.0	5.0	$\mu A$
	$T_A = 100^\circ C$	$I_{R2}$	—	10	50	
<b>Reverse Recovery Time</b> ( $I_F = 0.5A$ , $I_R = 1A$ , $I_{RR} = 0.25A$ , $T_A = 25^\circ C$ )	$T_A = 25^\circ C$	$t_{RR}$	—	1.5	5	$\mu$ sec
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}$ , $T_A = 25^\circ C$ , $f = 1MHz$ )	$T_A = 25^\circ C$	$C_J$	—	22	40	pF

**NOTES:**

- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ Surge rated at 500A maximum, pulse width = 100  $\mu$ sec.

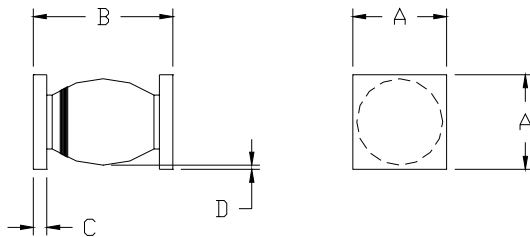
<b>Available Part Numbers:</b>	<b>SDR6W</b>	<b>SDR6WA</b>	<b>SDR6WSMS</b>
	<b>SDR6T</b>	<b>SDR6TA</b>	<b>SDR6TSMS</b>
	<b>SDR6R</b>	<b>SDR6RA</b>	<b>SDR6RSMS</b>

**Case Outline: (Axial)**



DIM	MIN	MAX
<b>A</b>	—	0.168"
<b>B</b>	0.135"	0.156"
<b>C (std)</b>	0.047"	0.053"
<b>C (A outline)</b>	0.037"	0.043"
<b>D</b>	1.00"	—

**Case Outline: (SMS)**



DIM	MIN	MAX
<b>A</b>	0.173"	0.177"
<b>B</b>	0.180"	0.210"
<b>C</b>	0.022"	0.028"
<b>D</b>	0.002"	—

Note: Dimensions prior to soldering.

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