



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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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<sup>2/</sup>
  - ── \* = Not Screened
  - ── S = S Level
  - ── TX = TX Level
  - ── TXV = TXV
- └─ Package
  - ── \* = Axial w/ .050" lead diameter
  - ── A = Axial w/ .040" lead diameter
  - ── SMS = Surface Mount Square Tab
- └─ Voltage
  - ── 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<sup>2/</sup>

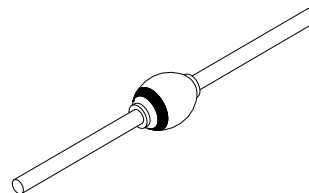
Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse Voltage	SDR6R SDR6T SDR6W	V <sub>RRM</sub>	1400 1600 1800	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave)	T <sub>L</sub> @ 1/8" = 25 °C max T <sub>TAB</sub> = 55 °C max	I <sub>o</sub>	6	Amps
Peak Surge Current <sup>3/</sup> (8.3 ms Pulse, Half Sine Wave)	T <sub>L</sub> @ 1/8" = 25 °C max T <sub>TAB</sub> = 55 °C max	I <sub>FSM</sub>	75	Amps
Operating & Storage Temperature		T <sub>OP</sub> & T <sub>STG</sub>	-65 to +175	°C
Maximum Total Thermal Resistance	Axial @ 1/8 " SMS	R <sub>θJL</sub>	12 8	°C/W

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

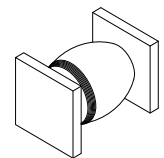
<sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flow Available on Request.

<sup>3/</sup> Surge rated at 500A maximum, pulse width = 100 μsec.

**Axial**



**Surface Mount Square Tab (SMS)**





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Electrical Characteristics		Symbol	Min	Typ	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 6A, 300 - 500 \mu\text{sec Pulse}$ )	$T_A = 25^\circ\text{C}$	$V_{F1}$	—	1.10	1.25	$V_{DC}$
	$T_A = -55^\circ\text{C}$	$V_{F2}$	—	1.20	1.40	
<b>Reverse Leakage Current</b> (100% of rated $V_R$ , 300 $\mu\text{s}$ pulse min.)	$T_A = 25^\circ\text{C}$	$I_{R1}$	—	1.0	5.0	$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	$I_{R2}$	—	10	50	
<b>Reverse Recovery Time</b> ( $I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A, T_A = 25^\circ\text{C}$ )	$T_A = 25^\circ\text{C}$	$t_{RR}$	—	1.5	5	$\mu\text{sec}$
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}, T_A = 25^\circ\text{C}, f = 1\text{MHz}$ )	$T_A = 25^\circ\text{C}$	$C_J$	—	22	40	$\text{pF}$

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

**Case Outline: (Axial)**

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

**Case Outline: (SMS)**

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

**Note: Dimensions prior to soldering.**