



**Solid State Devices, Inc.**

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**SDR12 Series**

**12 AMPS  
 200 - 1000 VOLTS  
 5 μsec  
 STANDARD RECOVERY  
 RECTIFIER**

**Designer's Data Sheet**

**Part Number/Ordering Information <sup>1/</sup>**  
**SDR12**

\_\_\_\_\_ L Screening <sup>2/</sup>  
 \_\_\_\_\_ = Not Screened  
 TX = TX Level  
 TXV = TXV  
 S = S Level

\_\_\_\_\_ Package Type  
 \_\_\_\_\_ = Axial  
 SMS = Surface Mount Square Tab

**Family/Voltage**  
 D = 200 V  
 G = 400V  
 J = 600 V  
 K = 800 V  
 M = 1000 V

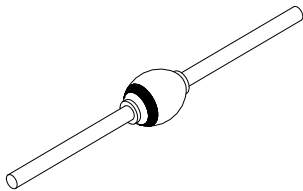
- FEATURES:**
- Standard Recovery: 5 μsec maximum
  - PIV up to 1000 Volts
  - High Current Operation up to 12 A
  - Hermetically Sealed
  - Single Chip Construction
  - Low Thermal Resistance
  - TX, TXV, and Space Level Screening Available<sup>2/</sup>
  - Fast and Ultrafast Recovery Versions Available. Contact Factory.

MAXIMUM RATINGS	Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage</b>	SDR12D	200	<b>Volts</b>
	SDR12G	400	
	SDR12J	600	
	SDR12K	800	
	SDR12M	1000	
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz, Sine Wave, T <sub>A</sub> ≤ 55°C)	I <sub>O</sub>	12	<b>Amps</b>
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, Superimposed on I <sub>O</sub> , allow junction to reach equilibrium between pulses, T <sub>A</sub> = 25°C)	I <sub>FSM</sub>	150	<b>Amps</b>
<b>Operating and Storage Temperature</b>	T <sub>OP</sub> & T <sub>stg</sub>	-65 to +175	<b>°C</b>
<b>Maximum Thermal Resistance</b> Junction to Lead, L = 0.125" (Axial Lead) Junction to End Tab (Surface Mount)	R <sub>θJL</sub>	6	<b>°C/W</b>
	R <sub>θJE</sub>	4	

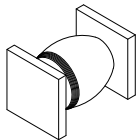
<sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability-Contact Factory.

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

**Axial**



**Surface Mount Square Tab (SMS)**





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ELECTRICAL CHARACTERISTICS		Symbol	Min	Max	Unit
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 12$ Amps, $T_A = 25^\circ\text{C}$ , 300 $\mu\text{sec}$ Pulse)	$T_A = 25^\circ\text{C}$	$V_{F1}$	—	1.30	<b>Volts</b> <b>Volts</b>
	$T_A = -55^\circ\text{C}$	$V_{F2}$	—	1.50	
<b>Reverse Leakage Current</b> (At Rated $V_R$ , 300 $\mu\text{sec}$ pulse minimum)	$T_A = 25^\circ\text{C}$	$I_{R1}$	---	5.0	$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	$I_{R2}$	—	200	$\mu\text{A}$
<b>Junction Capacitance</b> ( $V_R = 10$ V <sub>DC</sub> , $T_A = 25^\circ\text{C}$ , $f = 1$ MHz)		$C_J$	—	80	pF
<b>Reverse Recovery Time</b> ( $I_F = 500$ mA, $I_R = 1$ A, $I_{RR} = 250$ mA, $T_A = 25^\circ\text{C}$ )		$t_{rr}$	—	5	$\mu\text{s}$

**Case Outline: (Axial)**

DIM	MIN	MAX
A	—	0.190"
B	0.140"	0.180"
C	0.057"	0.063"
D	0.500"	—

**Case Outline: (SMS)**

DIM	MIN	MAX
A	0.195"	0.210"
B	0.190"	0.230"
C	0.020"	0.030"
D	0.002"	—

**Note: Dimensions prior to soldering.**

**NOTES:**  
 Consult manufacturing for operating curves.