



**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

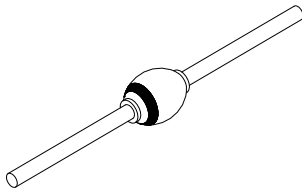
- FEATURES:**
- Standard Recovery: 5 μsec maximum
  - PIV up to 800 Volts
  - High Current Operation up to 12 A
  - Hermetically Sealed
  - Single Chip Construction
  - Low Thermal Resistance
  - TX, TXV, and Space Level Screening Available<sup>2/</sup>
  - Fast and Ultrafast Recovery Versions Available. Contact Factory.

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

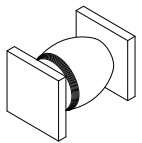
<sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.

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

**Axial**



**Surface Mount Square Tab (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 #: RC0091B**

**DOC**



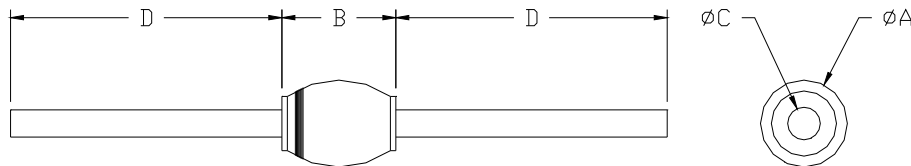
# SDR12 Series

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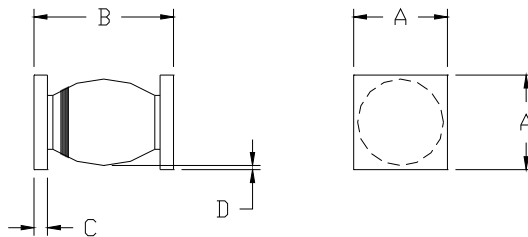
ELECTRICAL CHARACTERISTICS	Symbol	Min	Max	Unit
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 12$ Amps, $T_A = 25^\circ\text{C}$ , 300 $\mu\text{sec}$ Pulse)	$T_A = 25^\circ\text{C}$ $V_{F1}$	—	1.30	Volts
	$T_A = -55^\circ\text{C}$ $V_{F2}$	—	1.50	Volts
<b>Reverse Leakage Current</b> (At Rated $V_R$ , 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.

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