

**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SDR1304 thru SDR1308  
 SDR1304SMS thru SDR1308SMS**

**3 AMP, 400 – 800 Volts  
 70 nsec, Ultra Fast Rectifier**

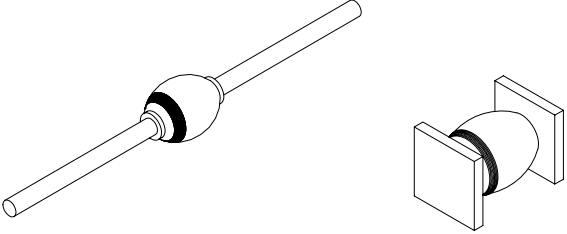
**DESIGNER'S DATA SHEET**

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

SDR130 6 - - - -

L Processing = None  
                   or TX, TXV, S  
 L Package = Axial  
                   SMS = Surface Mount  
 L Lead Dia = .050" standard  
                   A = .040" special order  
 L Voltage 4 = 400 V  
               6 = 600 V  
               8 = 800 V

**Axial Leaded**                      **Surface Mount (SMS)**



- Features:**
- Ultra Fast Recovery: 70 nsec @ 25°C,
  - PIV to 700 Volts
  - Hermetically Sealed
  - Void Free Construction
  - For High Efficiency Applications
  - Low Forward Voltage Drop
  - Single Chip Construction
  - Replaces UES 1304 Types

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SDR1304	$V_{RRM}$	400	Volts
	SDR1306		600	
	SDR1308	$V_R$	800	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_o$	3.0	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$ )		$I_{FSM}$	75	Amps
Operating & Storage Temperature		Top & Tstg	-65 to +175	°C
Maximum Thermal Resistance	Junction to Lead, L = 3/8 "	$R_{\theta JL}$	20	°C/W
	Junction to End Tab	$R_{\theta JE}$	14	

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



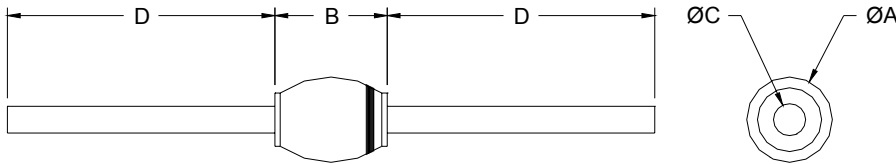
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**SDR1304 thru SDR1308  
 SDR1304SMS thru SDR1308SMS**

Electrical Characteristics	Part Type	Symbol	Min	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , pulsed) $I_F = 3\text{A}$	SDR1304 - 1306 SDR1308	$V_{F1}$	—	1.25 1.35	Volts
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = -55^\circ\text{C}$ , pulsed) $I_F = 3\text{A}$	SDR1304 - 1306 SDR1308	$V_{F2}$	—	1.40 1.50	Volts
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , pulsed)	All	$I_{R1}$	—	10	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , pulsed)	SDR1304 - 1306 @ $125^\circ\text{C}$ SDR1308 @ $100^\circ\text{C}$	$I_{R2}$	—	150 150	$\mu\text{A}$
<b>Junction Capacitance</b> ( $V_R = 10\text{Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )	All	$C_J$	—	50	pF
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 0.25\text{A}$ )	All	$t_{rr}$	—	70	nsec

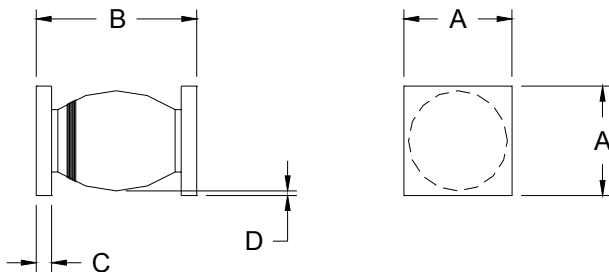
**Case Outline: (Axial)**



DIMENSIONS SDR1304 & SDR1306		
DIM	MIN	MAX
A	0.140"	0.170"
B	—	0.200"
C	0.047"	0.053"
D	1.00"	—

DIMENSIONS SDR1308		
DIM	MIN	MAX
A	0.140"	0.170"
B	—	0.215"
C	0.045"	0.053"
D	1.00"	—

**Case Outline: Surface Mount (SMS)**



DIMENSIONS SDR1304 & SDR1306		
DIM	MIN	MAX
A	0.172"	0.180"
B	0.200"	0.250"
C	0.020"	0.035"
D	0.002"	—

DIMENSIONS SDR1308		
DIM	MIN	MAX
A	0.172"	0.180"
B	0.200"	0.265"
C	0.020"	0.035"
D	0.002"	—

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**DATA SHEET #: RU0095C**

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