



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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## SDR933/61 thru SDR936/61

### 30 Amp ULTRA FAST RECTIFIER 300 – 600 Volts 35 nsec

- FEATURES:**
- Ultra Fast Reverse Recovery Time: 35 nsec Max
  - Isolated Package
  - Reverse Voltage to 600 Volts
  - Low Reverse Leakage
  - Hermetically Sealed
  - Single Chip Construction
  - 200°C Operating Temperature
  - Ultrasonic Aluminum Wire Bonds
  - TX, TXV, and S-Level Screening Available<sup>2/</sup>

### Designer's Data Sheet

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

**SDR93** \_\_\_\_\_

└─ Screening <sup>2/</sup>

    — = Not Screened

    TX = TX Level

    TXV = TXV

    S = S Level

└─ Package Type

    /61 = TO-61

**Device Type (VRWM)**

    3 = 300V

    4 = 400V

    5 = 500V

    6 = 600V

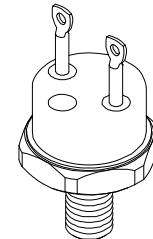
### MAXIMUM RATINGS <sup>3/</sup>

RATING		SYMBOL	VALUE	UNIT
<b>Peak Repetitive Reverse Voltage</b> <b>DC Blocking Voltage</b> (IR = 100µA)	SDR933/61	$V_{RM(rep)}$ $V_R$	300	Volts
	SDR934/61		400	
	SDR935/61		500	
	SDR936/61		600	
<b>RMS Reverse Voltage</b>	SDR932/61	$V_r$	140	Volts
	SDR933/61		210	
	SDR934/61		280	
	SDR935/61		350	
<b>Half Wave Rectified Forward Current, Averaged Over Full Cycle</b> (Resistive Load, 60 Hz, Sine Wave, T <sub>C</sub> = 25°C)		$I_o$	30	Amps
<b>Peak Repetitive Forward Current</b> (T <sub>C</sub> = 55°C, 8.3 ms pulse, allow junction to reach equilibrium between pulses)		$I_{FM(rep)}$	120	Amps
<b>Peak Surge Current</b> (T <sub>C</sub> = 25°C, half sinewave 8.3 ms pulse or equivalent DC)		$I_{FSM}$	300	Amps
<b>Operating &amp; Storage Temperature</b>		<b>T<sub>OP</sub> and T<sub>STG</sub></b>	-65 to +175	°C
<b>Thermal Resistance</b>	Junction to Case	<b>R<sub>θJC</sub></b>	1.5	°C/W

#### NOTES:

- <sup>1/</sup> For Ordering Information, Price, and Availability- Contact Factory.
- <sup>2/</sup> Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
- <sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.

TO-61





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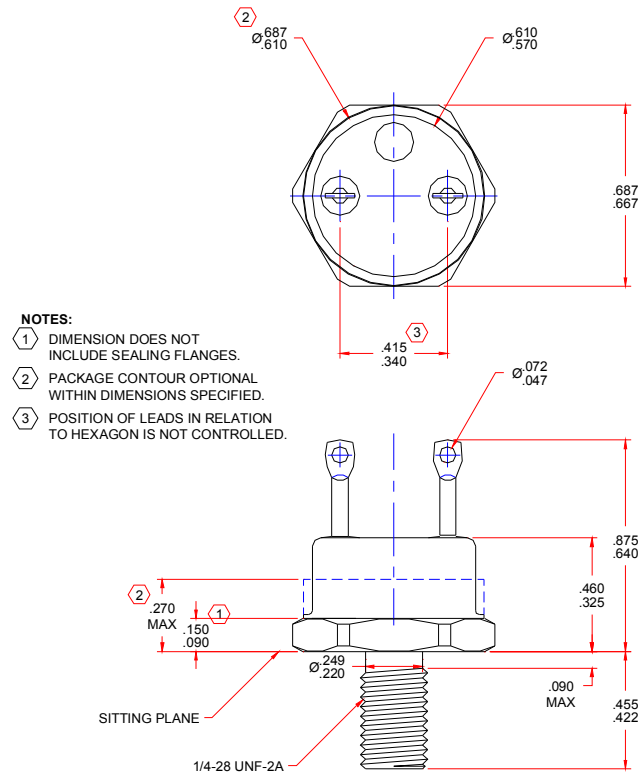
**SDR933/61  
 thru  
 SDR936/61**

CHARACTERISTICS	SYMBOL	MAX	UNIT
<b>Max Instantaneous Forward Voltage Drop</b> ( $I_F = 30\text{Adc}$ , $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_{F2}$	1.7	Vdc
<b>Max Instantaneous Forward Voltage Drop</b> ( $I_F = 30\text{Adc}$ , $T_C = 100^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_{F1}$	1.5	Vdc
<b>Max Reverse Leakage Current</b> ( $T_C = 25^\circ\text{C}$ )	$I_{R1}$	100	$\mu\text{Adc}$
			SDR933/61, $V_R = 300\text{V}$ SDR934/61, $V_R = 400\text{V}$ SDR935/61, $V_R = 500\text{V}$ SDR936/61, $V_R = 600\text{V}$
<b>Maximum Reverse Leakage Current</b> (Rated $V_R$ , $T_C = 100^\circ\text{C}$ )	$I_{R2}$	5.0	mAdc
<b>Max Junction Capacitance</b> ( $T_A = 25^\circ\text{C}$ , $V_R = 10\text{V}$ )	$C_J$	250	pf

CHARACTERISTICS	SYMBOL	TYP	MAX	UNIT
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{mA}$ ) ( $I_F = 1\text{A}$ to $V_R = 30\text{Vdc}$ )	$t_{rr}$	30	35	nsec

**Case Outline: 2 Pin TO-61**



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

**DATA SHEET #: RC0135A**

**DOC**