



## Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

# SDR933/61 thru SDR936/61

## 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

**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>

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

| RATING S  |                  | YMBOL                                     | VALUE       | UNIT  |
|---|------------------|---|-------------|-------|
| <b>Peak Repetitive Reverse Voltage</b><br><b>DC Blocking Voltage</b><br>(IR = 100μA)  | SDR933/61        | $V_{RM(rep)}$<br>$V_R$                    | 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><br>(Resistive Load, 60 Hz, Sine Wave, T <sub>C</sub> = 25°C)   |                  | $I_o$                                     | 30          | Amps  |
| <b>Peak Repetitive Forward Current</b><br>(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><br>(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 | $R_{\theta JC}$                           | 1.5         | °C/W  |

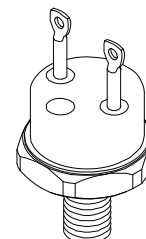
### NOTES:

<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



**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**



**Solid State Devices, Inc.**

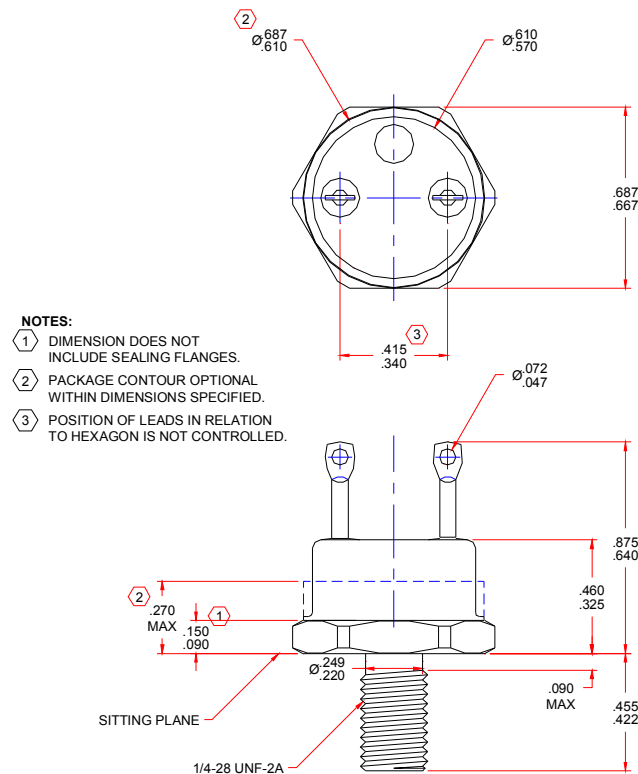
14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

# SDR933/61 thru SDR936/61

| CHARACTERISTICS  | SYMBOL   | MAX    | UNIT             |
|--|----------|--------|------------------|
| <b>Max Instantaneous Forward Voltage Drop</b><br>( $I_F = 30\text{A}$ dc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)  | $V_{F2}$ | 1.7 V  | dc               |
| <b>Max Instantaneous Forward Voltage Drop</b><br>( $I_F = 30\text{A}$ dc, $T_C = 100^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse) | $V_{F1}$ | 1.5 V  | dc               |
| <b>Max Reverse Leakage Current</b><br>( $T_C = 25^\circ\text{C}$ )   | $I_{R1}$ | 100    | $\mu\text{A}$ dc |
| <b>Maximum Reverse Leakage Current</b><br>(Rated $V_R$ , $T_C = 100^\circ\text{C}$ )   | $I_{R2}$ | 5.0 m  | A                |
| <b>Max Junction Capacitance</b><br>( $T_A = 25^\circ\text{C}$ , $V_R = 10\text{V}$ )   | $C_J$    | 250 pf |                  |

| CHARACTERISTICS   | SYMBOL   | TYP | MAX | UNIT |
|---|----------|-----|-----|------|
| <b>Reverse Recovery Time</b><br>( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{mA}$ )<br>( $I_F = 1\text{A}$ to $V_R = 30\text{V}$ dc) | $t_{rr}$ | 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**