



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, CA 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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**SDR937/61**  
 thru  
**SDR9312/61**

**30 Amp**  
**ULTRA FAST RECTIFIER**  
 700 – 1200 Volt  
 60 nsec

**Designer's Data Sheet**

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

**SDR93**

- └─ **Screening <sup>2/</sup>**
  - └─ **Screening**
    - = Not Screened
    - TX = TX Level
    - TXV = TXV Level
    - S = S Level
- └─ **Package**
  - └─ /61 = TO-61
- └─ **Family/Voltage**
  - 7 = 700V
  - 8 = 800V
  - 9 = 900V
  - 10 = 1000V
  - 11 = 1100V
  - 12 = 1200V

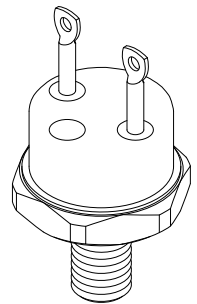
- Features:**
- Soft recovery diode
  - Ultra fast recovery: 60 nsec maximum
  - Available with faster recovery
  - High surge rating
  - Low reverse leakage current
  - Low junction capacitance
  - Hermetically sealed package
  - Gold eutectic die attach available
  - Ultrasonic aluminum wire bonds
  - TX, TXV, and S-level screening available – Contact factory <sup>2/</sup>

Maximum Ratings	Symbol	Value	Units
<b>Peak Repetitive Reverse and DC Blocking Voltage</b>	SDR937	700	<b>Volts</b>
	SDR938	800	
	SDR939	900	
	SDR9310	1000	
	SDR9311	1100	
	SDR9312	1200	
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz, Sine Wave, T <sub>A</sub> = 25°C)	<b>I<sub>o</sub></b>	30	<b>Amps</b>
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, T <sub>A</sub> = 25°C)	<b>I<sub>FSM</sub></b>	450	<b>Amps</b>
<b>Operating &amp; Storage Temperature</b>	<b>T<sub>OP</sub> &amp; T<sub>STG</sub></b>	-65 to +200	<b>°C</b>
<b>Maximum Thermal Resistance</b> Junction to Case	<b>R<sub>θJC</sub></b>	1.3	<b>°C/W</b>

**Notes:**

- 1/ For ordering information, price, operating curves, and availability - contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request.

**TO-61**





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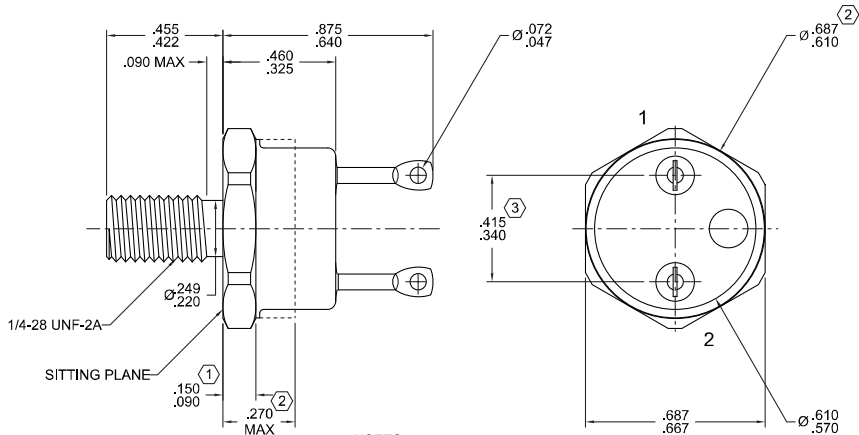
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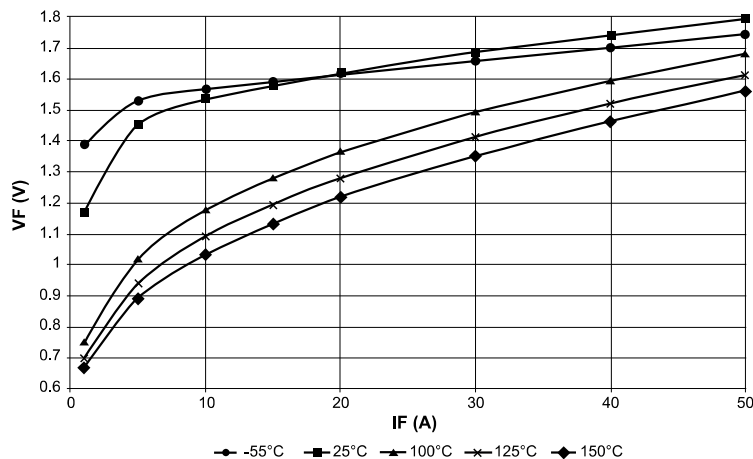
Electrical Characteristics	Symbol	Typical	Maximum	Units	
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)	$I_F = 15A_{DC}$ $I_F = 30A_{DC}$	$V_{F1}$ $V_{F2}$	1.8 2.0	2.0 2.2	$V_{DC}$
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 125^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)	$I_F = 15A_{DC}$	$V_{F3}$	1.4	1.5	$V_{DC}$
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = -55^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)	$I_F = 15A_{DC}$	$V_{F4}$	1.85	2.1	$V_{DC}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)		$I_{R1}$	20	100	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 125^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)		$I_{R2}$	10	25	$\text{mA}$
<b>Junction Capacitance</b> ( $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )	$V_R = 10V_{DC}$	$C_J$	80	100	$\text{pf}$
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}$ , $I_R = 1\text{Amp}$ , $I_{RR} = 250\text{mA}$ , $T_A = 25^\circ\text{C}$ ) ( $I_F = 10\text{A}$ , $dI_F/dt = 100\text{A}/\mu\text{s}$ )		$t_{RR1}$ $t_{RR2}$	45 70	60 100	<b>nsec</b>

**CASE OUTLINE: 2 Pin TO-61**

**PIN OUT:**  
**PIN 1: CATHODE**  
**PIN 2: ANODE**



- NOTES:  
 (1) DIMENSION DOES NOT INCLUDE SEALING FLANGES.  
 (2) PACKAGE CONTOUR OPTIONAL WITHIN DIMENSIONS SPECIFIED.  
 (3) POSITION OF LEADS IN RELATION TO HEXAGON IS NOT CONTROLLED.



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

**DATA SHEET #: RU0075C**

**DOC**