



**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

**SDR620/59  
 SDR621/59  
 SDR622/59**

**20 AMPS  
 100 - 200 VOLTS  
 ULTRA FAST RECOVERY  
 RECTIFIER**

- FEATURES:**
- Isolated Package
  - Reverse Recovery Time 35 ns Max
  - PIV 200 Volts
  - Low Reverse Leakage
  - Hermetically Sealed
  - Single Chip Construction
  - -65°C to 200°C Operating and Storage Temperature
  - Isolated Version of 1N5812-16 DO-4
  - TX, TXV, and S-Level Screening Available<sup>2/</sup>

**Designer's Data Sheet**

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

**SDR62**

- └─ Screening<sup>2/</sup>
  - ── = Not Screened
  - TX = TX Level
  - TXV = TXV
  - S = S Level
- └─ Package
  - 59 = TO-59
- └─ Voltage
  - 0 = 100 V
  - 1 = 150 V
  - 2 = 200 V

MAXIMUM RATINGS <sup>3/</sup>		Symbol	Value	Units
Peak Repetitive Reverse Voltage (Per Leg) and DC Blocking Voltage (Per Leg) (I <sub>R</sub> = 100 μA)	SDR620	V <sub>RRM</sub> V <sub>R</sub>	100	Volts
	SDR621		150	
	SDR622		200	
RMS Reverse Voltage (Per Leg)		V <sub>r</sub>	140	Volts
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60 Hz, Sine Wave, T <sub>C</sub> =55°C)		I <sub>o</sub>	20	Amps
Peak Repetitive Forward Current (T <sub>C</sub> =25°C, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		I <sub>FRM</sub>	80	Amps
Peak Surge Current (T <sub>A</sub> =25°C, 8.3 ms Pulse)		I <sub>FSM</sub>	300	Amps
Operating and Storage Temperature		T <sub>J</sub> & T <sub>stg</sub>	-65 to +200	°C

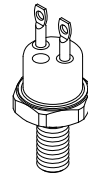
THERMAL CHARACTERISTICS	Symbol	Max	Units
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	3.0	°C/W

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

<sup>2/</sup> Screened to MIL-PRF-19500.

<sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.

**TO-59**





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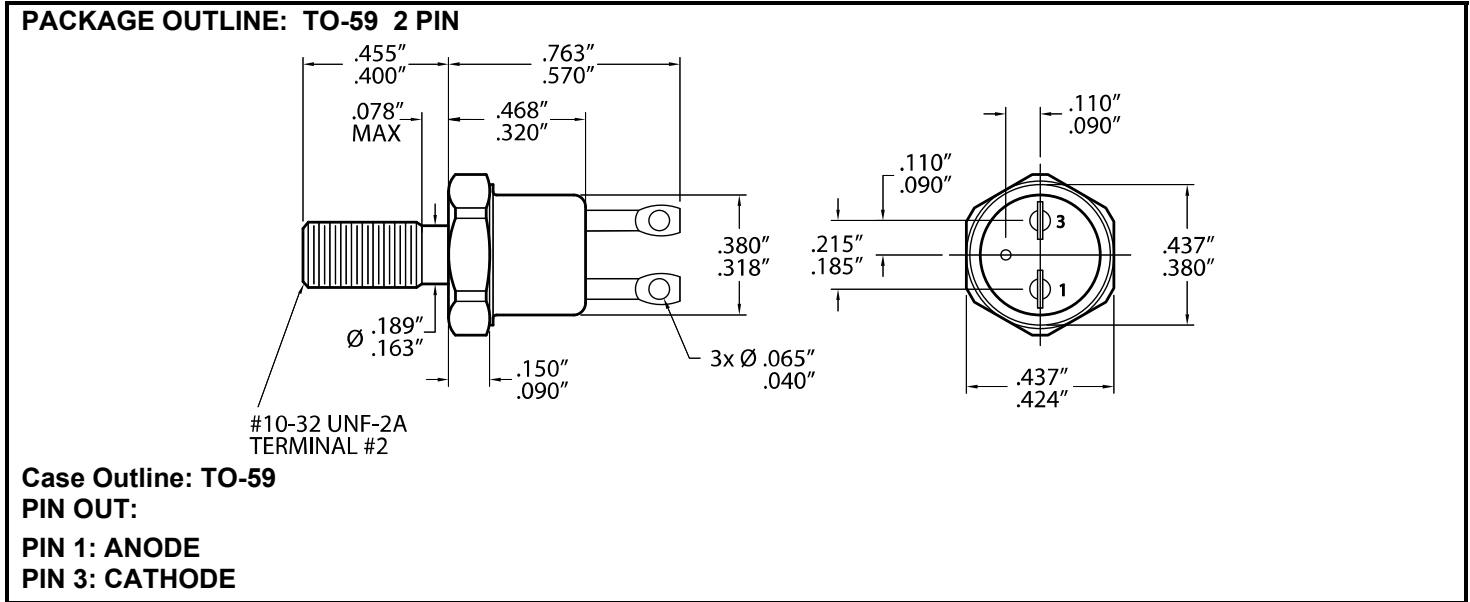
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**SDR620/59**  
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**SDR622/59**

ELECTRICAL CHARACTERISTICS (per leg)		Symbol	Minimum	Maximum	Unit
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , 300 – 500 $\mu\text{sec}$ Pulse)	$I_F = 10\text{A}$	$V_{F1}$	--	1.1	$V_{DC}$
	$I_F = 20\text{A}$	$V_{F2}$	--	1.4	
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 10\text{A}$ , 300 – 500 $\mu\text{s}$ Pulse)	$T_A = 100^\circ\text{C}$	$V_{F3}$	--	1.0	$V_{DC}$
	$T_A = -55^\circ\text{C}$	$V_{F4}$	--	1.25	
<b>Reverse Leakage Current</b> (Rated $V_R$ , 300 $\mu\text{s}$ Pulse min.)	$T_A = 25^\circ\text{C}$	$I_{R1}$	--	10	$\mu\text{A}$
	$T_C = 100^\circ\text{C}$	$I_{R2}$	--	1.0	<b>mA</b>
<b>Junction Capacitance</b> ( $V_R = 10 V_{DC}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )		$C_J$	--	225	<b>pF</b>
<b>Reverse Recovery Time</b> ( $T_A = 25^\circ\text{C}$ , $I_F = 0.5\text{A}$ , $I_R = 1.0 \text{A}$ , $I_{RR} = 0.25\text{A}$ )		$t_{rr}$	--	35	<b>nsec</b>

**NOTES:**

- \* Pulse Test: Pulse Width = 300  $\mu\text{sec}$ , Duty Cycle = 2%
- 1. Unless Otherwise Specified, All Electrical Characteristics @25°C



\*For information on curves, contact the Factory Representative for Engineering Assistance.



## DATA SHEET APPROVAL FORM

Data Sheet Number	<b>RC0117</b>	Rev	<b>A</b>	Custom Data Sheet, do not put on Web
Part Number(s):	SDR620/59, SDR621/59, SDR622/59			

Approval	Sign			Date
Engineering Manager:				
Executive / CEO				
Operation Manager:				
Marketing Manager:				
Quality Manager:				

### Device Category

	Rectifier	Schottky	Bridge	Zener & TVS	Thyristor	FET & IGBT	Transistors	IC & Vreg	Power Module
	HF	Standard	Doubler & CT	Zener	SCR	N Fet	NPN <1 W	Vreg (Adj)	High Voltage
x	UF	Super (<25V)	Single	Temp Comp	Triac	PFet	NPN > 1W	Vreg (fixed)	FET & IGBT Bridges
	F	SiC	Three	TVS (< 4KW)	Trigger Devices	RadFet	NPN > 400 V	IC	Battery Bypass
	Std		Mult	TVS (> 4KW)		JFET	PNP < 1W		DC - DC Converter
	HV >2.5KV					N IGBT	PNP >1 W		Other
	HC >200A					N IGBT +diode	PNP >400V		
	PIN					P IGBT	Comp Pair		
						P IGBT +diode			

Data Sheet Developmental Notes	



Data Sheet # RC0117

REVISIONS

ECO #	REV	DATE	DESCRIPTION	APPROVAL
----	A	12/04/07	Initial release.	

Q312rD