**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

## Designer's Data Sheet

**Part Number / Ordering Information** 1/

**SDR62** ___ ___ ___

- **Screening** 2/
  - __ = Not Screened
  - TX = TX Level
  - TXV = TXV
  - S = S Level
- **Package**
  - 59 = TO-59
- **Voltage**
  - 0 = 100 V
  - 1 = 150 V
  - 2 = 200 V

**FEATURES:**

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

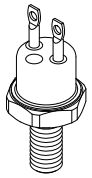
| MAXIMUM RATINGS 3/ | | Symbol | Value | Units |
|---|---|---|---|---|
| **Peak Repetitive Reverse Voltage and DC Blocking Voltage** | SDR620<br>SDR621<br>SDR622 | $V_{RRM}$<br>$V_R$ | 100<br>150<br>200 | **Volts** |
| **Half Wave Rectified Forward Current, Averaged Over Full Cycle** Resistive Load, 60 Hz, Sine Wave, $T_C$= 55ºC | | $I_O$ | 20 | **Amps** |
| **Peak Repetitive Forward Current** 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses | | $I_{FRM}$ | 80 | **Amps** |
| **Peak Surge Current** 8.3 ms Pulse | | $I_{FSM}$ | 200 | **Amps** |
| **Thermal Resistance** Junction to Case | | $R_{\theta JC}$ | 1.5 | **ºC/W** |
| **Operating and Storage Temperature** | | $T_J$ & $T_{stg}$ | -65 to +200 | **ºC** |

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

2/ Screened to MIL-PRF-19500.

3/ Unless Otherwise Specified, All Electrical Characteristics @ 25ºC.

**TO-59**



| NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release. | DATA SHEET #: RC0117B | DOC |
|---|---|---|

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# SDR620/59
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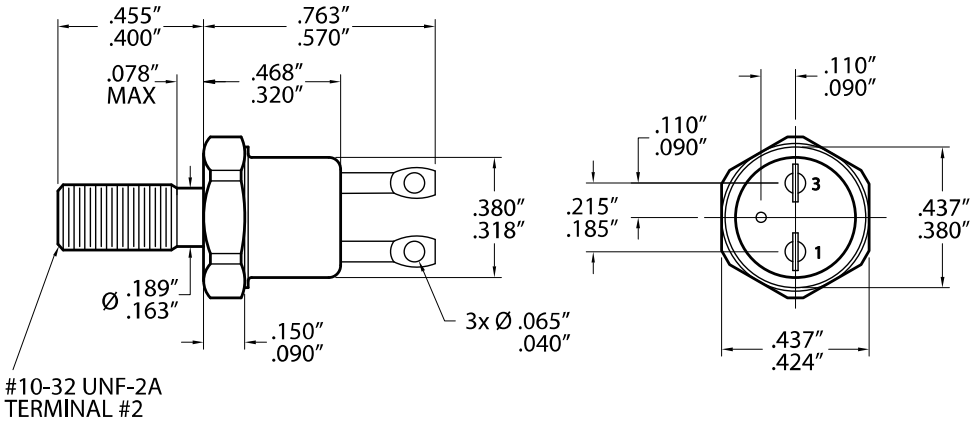
| ELECTRICAL CHARACTERISTICS [1/] | | Symbol | Minimum | Maximum | Unit |
|---|---|---|---|---|---|
| **Instantaneous Forward Voltage Drop**<br>300 – 500 µs Pulse | $I_F$= 10A<br>$I_F$= 20A | $V_{F1}$<br>$V_{F2}$ | –<br>– | 1.2<br>1.5 | $V_{DC}$ |
| **Instantaneous Forward Voltage Drop**<br>$I_F$= 10 A, 300 – 500 µs Pulse | $T_A$= 100ºC<br>$T_A$= -55ºC | $V_{F3}$<br>$V_{F4}$ | – | 1.15<br>1.25 | $V_{DC}$ |
| **Reverse Leakage Current**<br>Rated $V_R$, 300 µs Pulse min. | $T_A$= 25ºC<br>$T_C$= 100ºC | $I_{R1}$<br>$I_{R2}$ | –<br>– | 10<br>1.0 | **µA**<br>**mA** |
| **Junction Capacitance**<br>$V_R$= 10 $V_{DC}$, f= 1 MHz | | $C_J$ | – | 225 | **pF** |
| **Reverse Recovery Time**<br>$I_F$= 0.5 A, $I_R$= 1.0 A, $I_{RR}$= 0.25 A | | $t_{RR}$ | – | 35 | **nsec** |

**NOTES:**

1/ Unless Otherwise Specified, All Electrical Characteristics @ 25ºC

2/ For information on curves, contact the Factory Representative for Engineering Assistance.

**PACKAGE OUTLINE: TO-59 2 PIN**




**PIN OUT:**

**PIN 1: ANODE**

**PIN 3: CATHODE**

***SOLID STATE DEVICES INC***.
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# DATA SHEET APPROVAL FORM

| | | | | | |
|---|---|---|---|---|---|
| Data Sheet Number | **RC0117** | Rev | **B** | Custom Data Sheet, do not put on Web | |
| Part Number(s): | SDR620/59, SDR621/59, SDR622/59 | | | | |

| Approval | Sign | | Date |
|---|---|---|---|
| Engineering Manager: | Dan Tulbure | | 12/12/07 |
| Executive / CEO | Arnold N. Applebaum | | 06/04/08 |
| Operation Manager: | Joel Mearig | | 06/04/08 |
| Marketing Manager: | Sharon Pfifer | | 06/04/08 |
| Quality Manager: | Brian E. Green | | 06/04/08 |

## 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

Uc15s20 per id#3331/7198

*SOLID STATE DEVICES INC*.
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**Data Sheet # RC0117**

# REVISIONS

| ECO # | REV | DATE | DESCRIPTION | APPROVAL |
|---|---|---|---|---|
| ---- | A | 12/04/07 | Initial release. | BEG |
| E-100386 | B | 07/01/10 | $I_{FSM}$ = 200A; $R_{\theta JC}$= 1.5ºC/W, $V_{F1}$= 1.2V, $V_{F2}$= 1.5V, $V_{F3}$= 1.15V | IB |
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