



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 ^{2/}

Designer's Data Sheet

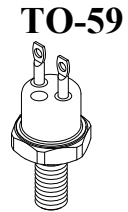
Part Number / Ordering Information ^{1/}

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

| MAXIMUM RATINGS ^{3/} | | Symbol | Value | Units |
|---|--------|--|--------------|--------------|
| Peak Repetitive Reverse Voltage and DC Blocking Voltage | SDR620 | V_{RRM} V_R | 100 | Volts |
| | SDR621 | | 150 | |
| | SDR622 | | 200 | |
| Half Wave Rectified Forward Current, Averaged Over Full Cycle Resistive Load, 60 Hz, Sine Wave, T _C = 55°C | | 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_{θJC} | 1.5 | °C/W |
| Operating and Storage Temperature | | T_J & T_{stg} | -65 to +200 | °C |

^{1/} For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.
^{2/} Screened to MIL-PRF-19500.
^{3/} Unless Otherwise Specified, All Electrical Characteristics @ 25°C.





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

NOTES:

- 1/ Unless Otherwise Specified, All Electrical Characteristics @ 25°C
- 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



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

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



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 _{θJC} = 1.5°C/W, V _{F1} = 1.2V, V _{F2} = 1.5V, V _{F3} = 1.15V | IB |
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