



**Solid State Devices, Inc.**

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 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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**SDR1183  
Thru  
SDR1190**

**35 Amp  
50-600 Volt  
5 μsec  
STANDARD RECOVERY  
RECTIFIER**

**Designer's Data Sheet**

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

SDR11

└─ Screening <sup>2/</sup>    \_\_\_ = Not Screened  
                           TX = TX Level  
                           TXV = TXV Level  
                           S = S Level

└─ Pin Configuration    \_\_\_ = Normal (Cathode to Stud)  
                                   (See Table 1)    R = Reverse (Anode to Stud)

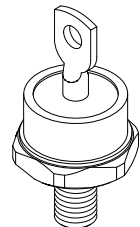
└─ Family/Voltage

|           |
|-----------|
| 83 = 50V  |
| 84 = 100V |
| 85 = 150V |
| 86 = 200V |
| 87 = 300V |
| 88 = 400V |
| 89 = 500V |
| 90 = 600V |

- Features:**
- Low Reverse Leakage Current
  - Single Chip Construction
  - PIV to 600V
  - Hermetically Sealed
  - Low Thermal Resistance
  - Higher Voltage Devices Up to 1400V Available\*
  - Fast and Ultra Fast Recovery Versions Available\*
  - For Reverse Polarity Add Suffix "R"
  - Replacement for 1N1183, 1N1184, 1N1185, 1N1186, 1N1187, 1N1188, 1N1189, and 1N1190
  - TX, TXV, and S-Level Screening Available <sup>2/</sup>
- \*Contact Factory

| Maximum Ratings   | Symbol                                      | Value       | Units        |
|---|---|-------------|--------------|
| <b>Peak Repetitive Reverse and DC Blocking Voltage</b>  | SDR1183                                     | 50          | <b>Volts</b> |
|   | SDR1184                                     | 100         |              |
|   | SDR1185                                     | 150         |              |
|   | SDR1186                                     | 200         |              |
|   | SDR1187                                     | 300         |              |
|   | SDR1188                                     | 400         |              |
|   | SDR1189                                     | 500         |              |
|   | SDR1190                                     | 600         |              |
| <b>Average Rectified Forward Current</b><br>(Resistive Load, 60 Hz Sine Wave, T <sub>A</sub> = 25 °C) | <b>I<sub>o</sub></b>                        | 35          | <b>Amps</b>  |
| <b>Peak Surge Current</b><br>(8.3 ms Pulse, Half Sine Wave, T <sub>A</sub> = 25 °C)                   | <b>I<sub>FSM</sub></b>                      | 500         | <b>Amps</b>  |
| <b>Operating &amp; Storage Temperature</b>  | <b>T<sub>OP</sub> &amp; T<sub>STG</sub></b> | -65 to +150 | <b>°C</b>    |
| <b>Maximum Total Thermal Resistance</b><br>Junction to Case   | <b>R<sub>θJC</sub></b>                      | 1.0         | <b>°C/W</b>  |

DO-5:



**Notes:**

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



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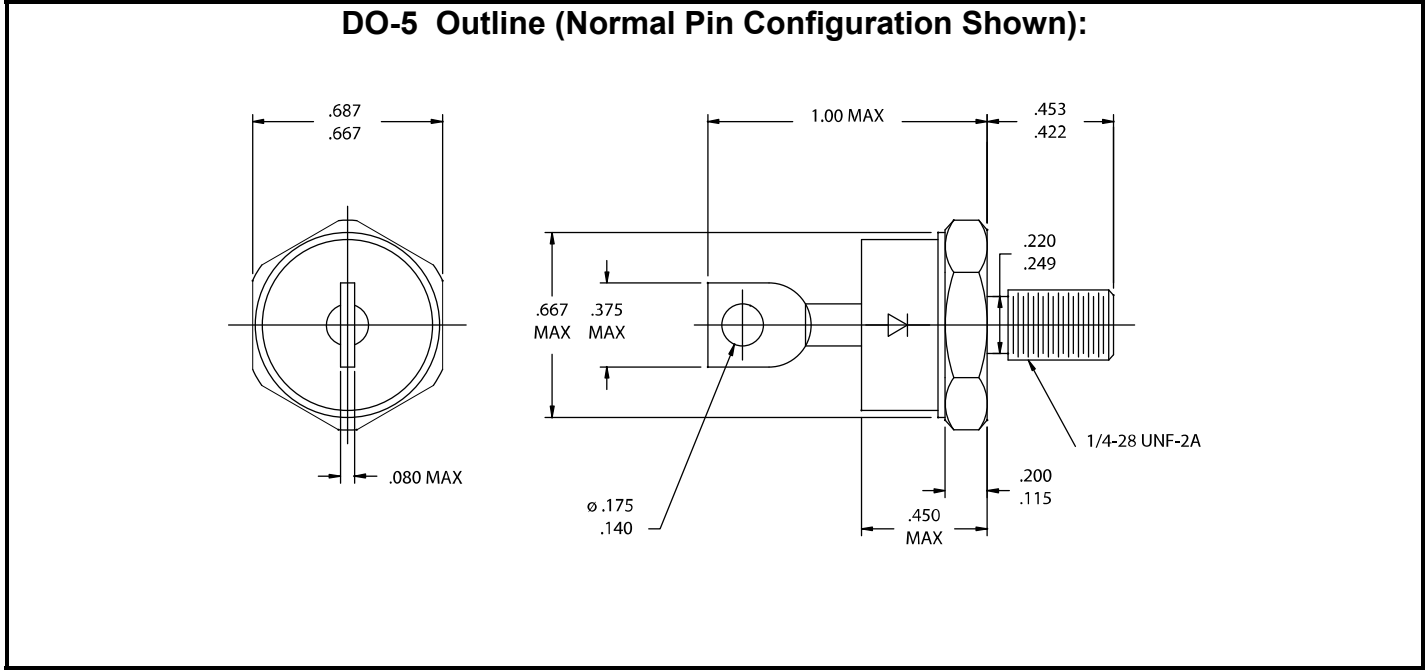
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**SDR1183  
 Thru  
 SDR1190**

| Electrical Characteristics   | Symbol   | Max | Units           |
|--|----------|-----|-----------------|
| <b>Instantaneous Forward Voltage Drop</b><br>( $I_F = 35 \text{ A dc}$ , $T_A = 25 \text{ }^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)              | $V_F$    | 1.4 | $V_{DC}$        |
| <b>Instantaneous Forward Voltage Drop</b><br>( $I_F = 35 \text{ A dc}$ , $T_A = -55 \text{ }^\circ\text{C}$ , 300 $\mu\text{s}$ pulse)             | $V_F$    | 1.6 | $V_{DC}$        |
| <b>Reverse Leakage Current</b><br>(Rated $V_R$ , $T_A = 25 \text{ }^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)                              | $I_R$    | 20  | $\mu\text{A}$   |
| <b>Reverse Leakage Current</b><br>(Rated $V_R$ , $T_A = 100 \text{ }^\circ\text{C}$ , 300 $\mu\text{s}$ pulse minimum)                             | $I_R$    | 2   | <b>mA</b>       |
| <b>Reverse Recovery Time</b><br>( $I_F = 500 \text{ mA}$ , $I_R = 1 \text{ Amp}$ , $I_{RR} = 250 \text{ mA}$ , $T_A = 25 \text{ }^\circ\text{C}$ ) | $t_{RR}$ | 5   | $\mu\text{sec}$ |
| <b>Junction Capacitance</b><br>( $V_R = 10V_{DC}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )   | $C_J$    | 250 | <b>pF</b>       |

**Table 1- PIN ASSIGNMENT**

| Code     | Configuration | Terminal | Stud    |
|----------|---------------|----------|---------|
| —        | Normal        | Anode    | Cathode |
| <b>R</b> | Reverse       | Cathode  | Anode   |



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