



**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

**SDR803  
Thru  
SDR817**

**100A, 60nsec, 50-1100 V  
Ultra Fast Recovery Rectifier**

**Designer's Data Sheet**

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

SDR

└─ 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

803 = 50V	808 = 300V	813 = 700V
804 = 100V	809 = 350V	814 = 800V
805 = 150V	810 = 400V	815 = 900V
806 = 200V	811 = 500V	816 = 1000V
807 = 250V	812 = 600V	817 = 1100V

- Features:**
- Fast Recovery: 60nsec Maximum
  - Low Forward Voltage Drop
  - Low Reverse Leakage Current
  - Single Chip Construction
  - PIV to 1100 Volts
  - Hermetically Sealed
  - For High Efficiency Applications
  - TX, TXV, and S-Level Screening Available <sup>2/</sup>

Maximum Ratings <sup>4/</sup>	Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage @ 100µA</b>	SDR803	50	Volts
	SDR804	100	
	SDR805	150	
	SDR806	200	
	SDR807	250	
	SDR808	300	
	SDR809	350	
	SDR810	400	
	SDR811	500	
	SDR812	600	
	SDR813	700	
	SDR814	800	
	SDR815	900	
	SDR816	1000	
SDR817	1100		
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz Sine Wave, T <sub>A</sub> = 25 °C)	<b>I<sub>o</sub></b>	100	Amps
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, T <sub>A</sub> = 25 °C)	SDR803 – 806	1000	Amps
	SDR807 – 809	800	
	SDR810 – 814	700	
	SDR815 – 817	600	
	SDR816 – 817	600	
<b>Operating &amp; Storage Temperature</b>	T <sub>OP</sub> & T <sub>STG</sub>	-55 to +175	°C
<b>Thermal Resistance (Junction to Case)</b>	R <sub>θJC</sub>	0.85	°C/W

- Notes:**
- 1/ For ordering information, Price, Operating Curves, and Availability- Contact Factory.
  - 2/ Screened to MIL-PRF-19500.
  - 3/ Recovery Conditions: I<sub>F</sub> = 500 mA, I<sub>R</sub> = 1 Amp, I<sub>RR</sub> = 250 mA.
  - 4/ Unless Otherwise Specified, All Maximum Ratings/Electrical Characteristics @25°C.



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Electrical Characteristics <sup>4/</sup>		Symbol	Value	Units
<b>Maximum Instantaneous Forward Voltage Drop</b> ( $I_F = 100 \text{ Adc}$ , $T_A = 25^\circ \text{C}$ , 300-500 $\mu\text{s}$ Pulse)	SDR803 – 806	$V_{F1}$	1.00	$V_{DC}$
	SDR807 – 810		1.50	
	SDR811 – 814		1.85	
	SDR815 – 817		1.90	
<b>Maximum Instantaneous Forward Voltage Drop</b> ( $I_F = 100 \text{ Adc}$ , $T_A = -55^\circ \text{C}$ , 300-500 $\mu\text{s}$ Pulse)	SDR803 – 806	$V_{F2}$	1.10	$V_{DC}$
	SDR807 – 810		1.60	
	SDR811 – 814		1.95	
	SDR815 – 817		2.00	
<b>Maximum Reverse Leakage Current</b> (Rated $V_R$ , 300 $\mu\text{s}$ minimum pulse)	$T_A = 25^\circ \text{C}$	$I_{R1}$	100	$\mu\text{A}$
	$T_A = 100^\circ \text{C}$	$I_{R2}$	10	<b>mA</b>
<b>Maximum Reverse Recovery Time</b> ( $I_F = 500 \text{ mA}$ , $I_R = 1 \text{ Amp}$ , $I_{RR} = 250 \text{ mA}$ )	$T_A = 25^\circ \text{C}$	$t_{RR}$	60	<b>nsec</b>
<b>Maximum Junction Capacitance</b> ( $V_R = 10V_{DC}$ , $T_A = 25^\circ \text{C}$ , $f = 1\text{MHz}$ )		$C_J$	700	<b>pF</b>

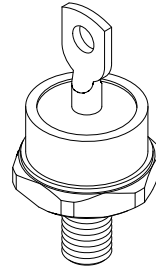
Notes:

1/ For ordering information, Price, Operating Curves, and Availability- Contact Factory.

2/ Screened to MIL-PRF-19500.

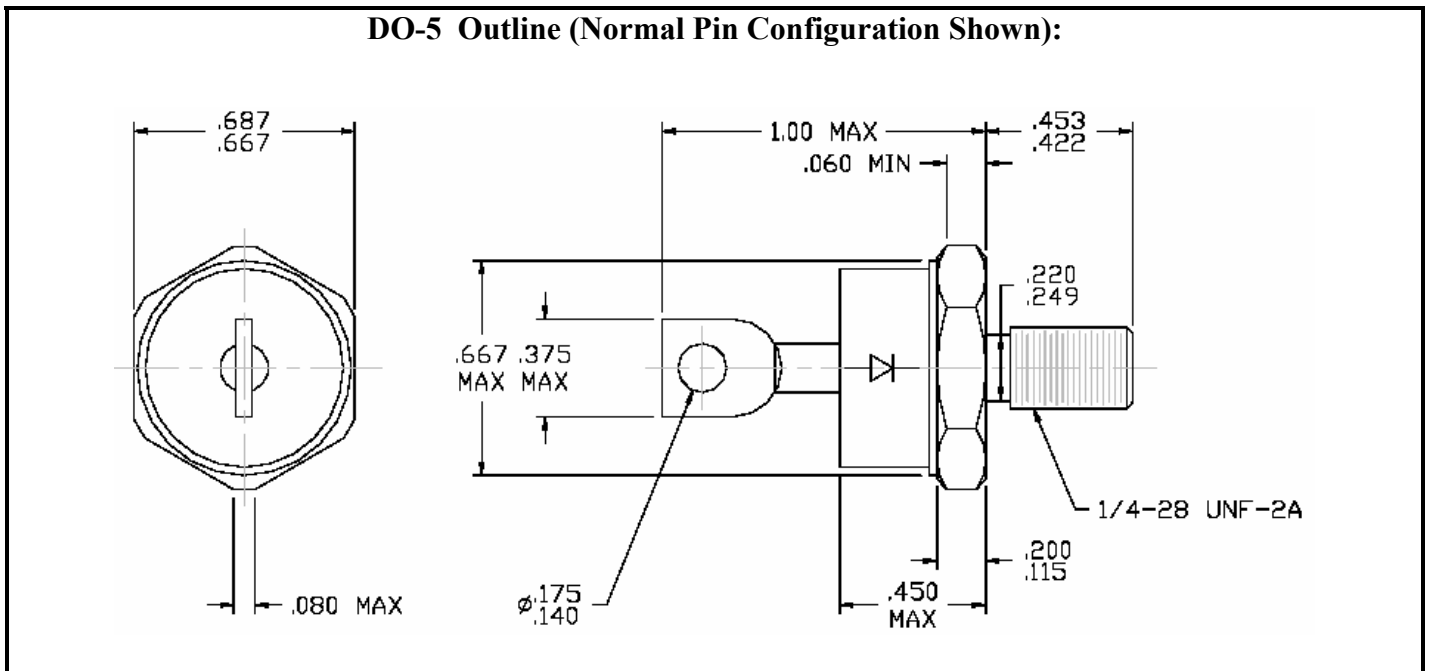
3/ Recovery Conditions:  $I_F = 500 \text{ mA}$ ,  $I_R = 1 \text{ Amp}$ ,  $I_{RR} = 250 \text{ mA}$ .

4/ Unless Otherwise Specified, All Maximum Ratings/Electrical Characteristics @25°C.



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

**DO-5 Outline (Normal Pin Configuration Shown):**



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

**DATA SHEET #: RU0059G**

**DOC**