



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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**1N3909  
 Thru  
 1N3913**

**Designer's Data Sheet**

**Part Number/Ordering Information**<sup>1/</sup>  
 1N3909

**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)

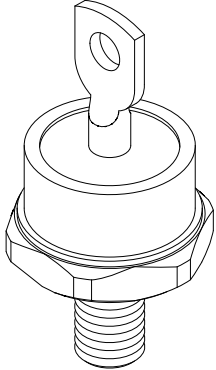
**Family/Voltage**    1N3909 = 50V  
                          1N3910 = 100V  
                          1N3911 = 200V  
                          1N3912 = 300V  
                          1N3913 = 400V

**30A, 200nsec, 50-400 V  
 Fast Recovery Rectifier**

- Features:**
- **Fast Recovery: 200nsec Maximum (100nsec typ.)**<sup>3/</sup>
  - **Low Reverse Leakage Current**
  - **Single Chip Construction**
  - **PIV to 400V, Higher Voltages Available**
  - **Hermetically Sealed Isolated Package**
  - **High Surge Rating**
  - **TX, TXV, and S-Level Screening Available**<sup>2/</sup>

<b>Maximum Ratings</b> <sup>4/</sup>	<b>Symbol</b>	<b>Value</b>	<b>Units</b>
<b>Peak Repetitive Reverse Voltage</b>	1N3909	50	Volts
	1N3910	$V_{RRM}$ 100	
	1N3911	$V_{RWM}$ 200	
	1N3912	$V_R$ 300	
	1N3913	400	
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ C$ )	<b>I<sub>o</sub></b>	30	Amps
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, $T_A = 25^\circ C$ , per leg)	<b>I<sub>FSM</sub></b>	300	Amps
<b>Operating &amp; Storage Temperature</b>	<b>T<sub>OP</sub></b>	-55 to +150	°C
	<b>T<sub>STG</sub></b>	-65 to +175	
<b>Maximum Total Thermal Resistance</b> Junction to Case	<b>R<sub>θJC</sub></b>	1.2	°C/W

DO-5:



- 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.



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Thru  
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Electrical Characteristics (per leg) <sup>4/</sup>		Symbol	Max	Units
Maximum Instantaneous Forward Voltage Drop (Pulsed)	$I_F = 30A, T_A = 25\text{ }^\circ\text{C}$	$V_{F1}$	1.40	$V_{DC}$
	$I_F = 30A, T_A = -55\text{ }^\circ\text{C}$	$V_{F2}$	1.50	
Maximum Reverse Leakage Current (Rated $V_R$ Minimum)	$T_A = 25\text{ }^\circ\text{C}$	$I_{R1}$	80	$\mu\text{A}$
	$T_A = 100\text{ }^\circ\text{C}$	$I_{R2}$	10	<b>mA</b>
Maximum Reverse Recovery Time ( $I_F = 500\text{ mA}, I_R = 1\text{ Amp}, I_{RR} = 250\text{ mA}$ )		$t_{RR}$	200	<b>nsec</b>
Typical Junction Capacitance ( $V_R = 10V_{DC}, T_A = 25^\circ\text{C}, f = 1\text{MHz}$ )		$C_J$	200	<b>pF</b>

**Notes:**

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

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

