Solid State Devices, Inc.
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SPD3909 Thru SPD3913

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

Designer's Data Sheet

Part Number/Ordering Information [1/]

SPD39 ___

Screening [2/]
__ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Pin Configuration (See Table 1)
__ = Normal (Cathode to Stud)
R = Reverse (Anode to Stud)

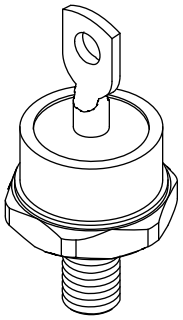
Family/Voltage
09 = 50V
10 = 100V
11 = 200V
12 = 300V
13 = 400V

Features:

- **Fast Recovery: 200nsec Maximum (100nsec typ.)** [3/]
- **Low Reverse Leakage Current**
- **Single Chip Construction**
- **PIV to 400V, Higher Voltages Available**
- **Hermetically Sealed Isolated Package**
- **High Surge Rating**
- **Replacement for 1N3909, 1N3910, 1N3911, 1N3912, and 1N3913**
- **TX, TXV, and S-Level Screening Available** [2/]

Maximum Ratings [4/]		Symbol	Value	Units
Peak Repetitive Reverse Voltage	**SPD3909**	V_{RRM} V_{RWM} V_R	50	**Volts**
	SPD3910		100	
	SPD3911		200	
	SPD3912		300	
	SPD3913		400	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_A = 25 °C)		**Io**	30	**Amps**
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, T_A = 25 °C, per leg)		I_{FSM}	300	**Amps**
Operating & Storage Temperature		T_{OP} T_{STG}	-55 to +150 -65 to +175	**ºC**
Maximum Total Thermal Resistance Junction to Case		$R_{\theta JC}$	1.2	**ºC/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 mA, I_R = 1 Amp, I_{RR} = 250 mA.
4/ Unless Otherwise Specified, All Maximum Ratings/Electrical Characteristics @25°C.

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

Notes:

1/ For ordering information, Price, Operating Curves, and Availability- Contact Factory.
2/ Screened to MIL-PRF-19500.
3/ Recovery Conditions: I_F = 500 mA, I_R = 1 Amp, I_{RR} = 250 mA.
4/ Unless Specified Otherwise, All Maximum Ratings/Electrical Characteristics are @25°C.

Table 1- PIN ASSIGNMENT			
Code	**Configuration**	**Terminal**	**Stud**
—	Normal	Anode	Cathode
R	Reverse	Cathode	Anode

DO-5 Outline (Normal Pin Configuration Shown):

