



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

**SPD3899
 Thru
 SPD3903**

**20 Amp
 50-400 Volt
 120 nsec
 FAST RECOVERY
 RECTIFIER**

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPD

├── Screening ^{2/} ___ = 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)

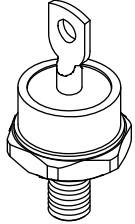
└── Family/Voltage

3899 = 50V
 3900 = 100V
 3901 = 200V
 3902 = 300V
 3903 = 400V

- Features:**
- Fast Recovery: 120 nsec maximum
 - Low Reverse Leakage Current
 - Single Chip Construction
 - PIV to 400V
 - Hermetically Sealed
 - High Surge Rating
 - Low Thermal Resistance
 - Higher Voltage Devices Available—Contact Factory
 - For Reverse Polarity Add Suffix “R”
 - Replacement for 1N3899, 1N3900, 1N3901, 1N3902, and 1N3903
 - TX, TXV, and S-Level Screening Available ^{2/}

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SPD3899	V_{RRM} V_{RWM} V_R	50	Volts
	SPD3900		100	
	SPD3901		200	
	SPD3902		300	
	SPD3903		400	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25\text{ }^\circ\text{C}$)		I_o	20	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $T_A = 25\text{ }^\circ\text{C}$)		I_{FSM}	250	Amps
Operating & Storage Temperature		$T_{OP} \text{ \& } T_{STG}$	-65 to +150	°C
Maximum Thermal Resistance Junction to Case		$R_{\theta JC}$	1.8	°C/W

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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Electrical Characteristics	Symbol	Max	Units
Instantaneous Forward Voltage Drop ($I_F = 20 \text{ A dc}$, $T_A = 25 \text{ }^\circ\text{C}$, 300 μs pulse)	V_F	1.40	V_{DC}
Instantaneous Forward Voltage Drop ($I_F = 20 \text{ A dc}$, $T_A = -55 \text{ }^\circ\text{C}$, 300 μs pulse)	V_F	1.55	V_{DC}
Reverse Leakage Current (Rated V_R , $T_A = 25 \text{ }^\circ\text{C}$, 300 μs pulse minimum)	I_R	25	μA
Reverse Leakage Current (Rated V_R , $T_A = 100 \text{ }^\circ\text{C}$, 300 μs pulse minimum)	I_R	2.5	mA
Reverse Recovery Time ($I_F = 500 \text{ mA}$, $I_R = 1 \text{ Amp}$, $I_{RR} = 250 \text{ mA}$, $T_A = 25 \text{ }^\circ\text{C}$)	t_{RR}	120	nsec
Junction Capacitance ($V_R = 10V_{DC}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	C_J	300	pF

Table 1- PIN ASSIGNMENT

Code	Configuration	Terminal	Stud
—	Normal	Anode	Cathode
R	Reverse	Cathode	Anode

