



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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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

**SPD3899
Thru
SPD3903**

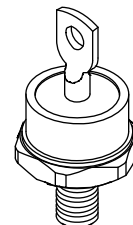
**20 Amp
50-400 Volt
120 nsec
FAST RECOVERY
RECTIFIER**

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

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.

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

DATA SHEET #: RF0005B

DOC



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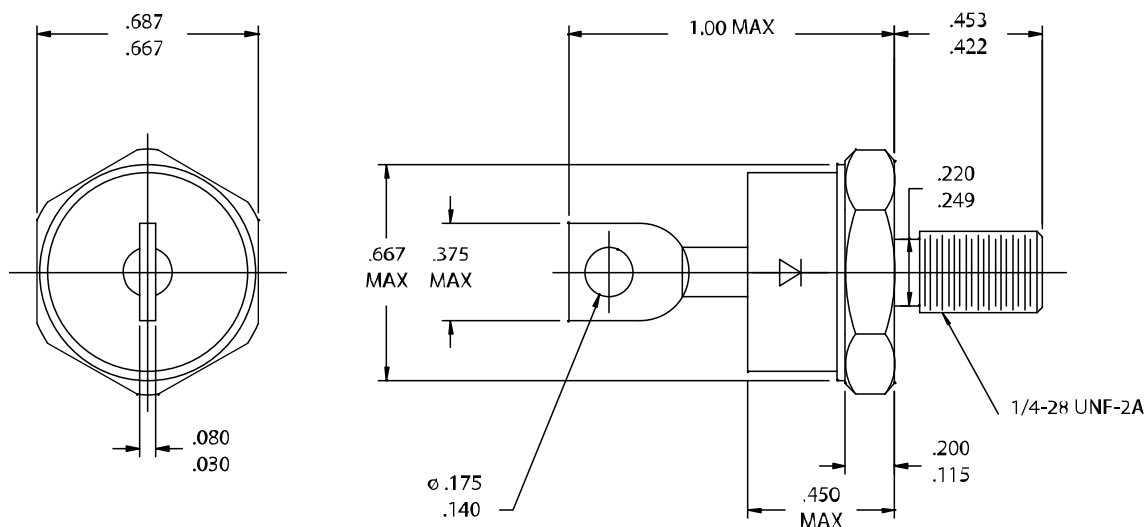
SPD3899 Thru SPD3903

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

DO-5 Outline (Normal Pin Configuration Shown):



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