



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

SPD48 thru SPD51 Series

200 mAMP
50-125 Volts
5 nsec

HYPER FAST RECTIFIER

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SPD — — —

L Screening^{2/} — = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level (for SM, use -S)

L Package

— = Axial Leaded
SM = Surface Mount Round Tab
SMS = Surface Mount Square Tab

L Voltage 48 = 50 V
49 = 75 V
50 = 100 V
51 = 125 V

Features:

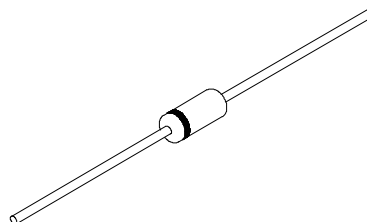
- Hyper Fast Recovery: 5 nsec maximum
- Subminiature Surface Mount Package
- Square Tab Mounting (Round Tabs Available)
- Hermetically Sealed
- Planar Passivated Chip
- For High Efficiency Applications
- Replaces 1N4148, 1N4149, 1N4150, and 1N4151 types
- TX, TXV and S – Level Screening Available^{2/}

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SPD48 SPD49 SPD50 SPD51	V_{RRM} V_{RWM} V_R	50 75 100 125	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$)		I_o	200	mAmps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on I_o , Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$)		I_{FSM}	4	Amps
Operating & Storage Temperature		Top & Tstg	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Lead, $L = 3/8"$ Junction to End Tab		$R_{\theta JL}$ $R_{\theta JE}$	325 140	$^\circ\text{C/W}$

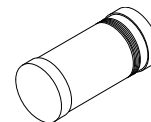
^{1/} For Ordering Information, Price, Operating Curves, and Availability – Contact Factory.

^{2/} Screening Based on MIL-PRF-19500. Screening Flows Available on Request.

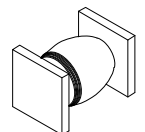
Axial



SM (Round)



SMS (Square)



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

DATA SHEET #: RH0085G

DOC



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SPD48 thru SPD51 Series

Electrical Characteristics		Symbol	Max	Units
Instantaneous Forward Voltage Drop ($T_A = 25^\circ\text{C}$, 300-500 μs pulse)	$I_F = 10\text{mA}_{\text{DC}}$ $I_F = 100\text{mA}_{\text{DC}}$	V_{F1}	1.0 1.2	V_{DC}
Instantaneous Forward Voltage Drop ($T_A = -55^\circ\text{C}$, 300-500 μs pulse)	$I_F = 10\text{mA}_{\text{DC}}$ $I_F = 100\text{mA}_{\text{DC}}$	V_{F2}	1.1 1.3	V_{DC}
Reverse Leakage Current (Rated V_R , $T_A = 25^\circ\text{C}$, 300 μs minimum pulse)		I_{R1}	400	nA
Reverse Leakage Current (Rated V_R , $T_A = 100^\circ\text{C}$, 300 μs minimum pulse)		I_{R2}	40	μA
Junction Capacitance ($V_R = 10\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)		C_J	2.8	pF
Reverse Recovery Time ($I_F = 50\text{mA}$, $I_R = 100\text{mA}$, $I_{RR} = 25\text{mA}$, $T_A = 25^\circ\text{C}$)		t_{rr}	5	nsec

Case Outline: Axial (___)

DIMENSIONS		
DIM	MIN	MAX
A	.050"	.075"
B	.080"	.120"
C	1.00"	---
D	.018"	.022"

Case Outline: Round Tab (SM)

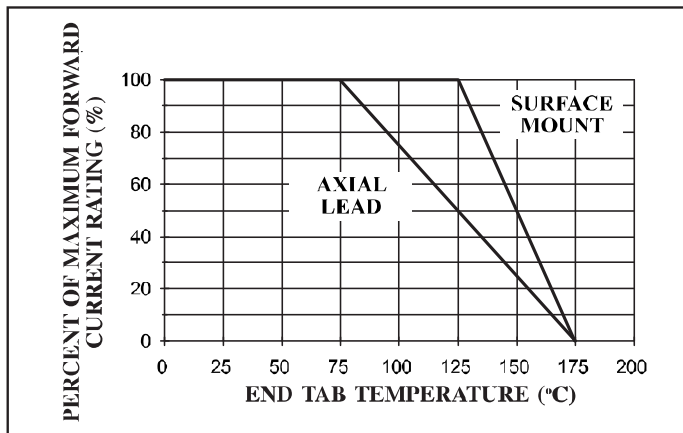
DIMENSIONS		
DIM	MIN	MAX
A	0.054"	0.085"
B	---	0.150"
C	0.010"	0.028"
D	.001"	---

Case Outline: Square Tab (SMS)

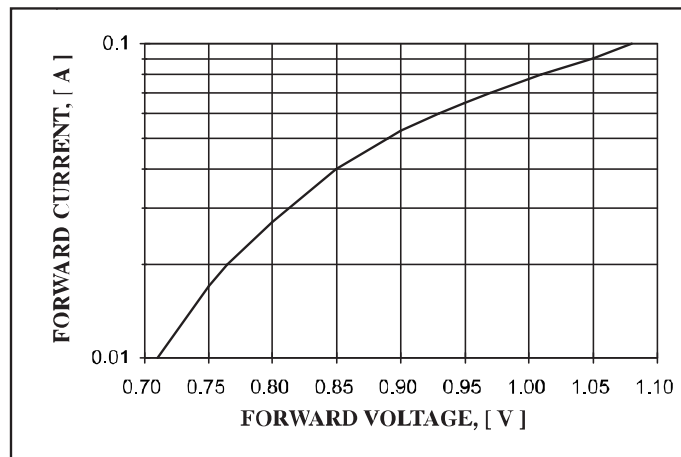
DIMENSIONS		
DIM	MIN	MAX
A	0.065"	0.085"
B	---	0.200"
C	0.022"	0.028"
D	0.001"	---

TYPICAL OPERATING CURVES

($T_A = 25^\circ\text{C}$ unless otherwise specified)



TYPICAL FORWARD VOLTAGE



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