PRELIMINARY

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

SPD48SM &SMS Thru SPD51SM & SMS

DESIGNER'S DATA SHEET

200 mAMP
50-125 Volts
5 nsec
HYPER FAST RECTIFIER

Part Number / Ordering Information [1/]

SPD ___ ___ ___

- **Screening**[2/] = None, TX = TX Level, TXV = TXV Level, S = S Level
- **Package** SM = Surface Mount Round Tab, SMS = Surface Mount Square Tab
- **Voltage** 48 = 50 V, 49 = 75 V, 50 = 100 V, 51 = 125 V

Features:

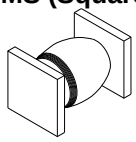
- Hyper Fast Recovery: 5 nsec maximum
- Subminiature Surface Mount Package
- Square Tab Mounting (Round Tabs Available)
- Hermetically Sealed
- Planar Passivated Chip
- For High Efficiency Applications
- Replaces 1N4148 – 1N4151 types
- TX, TXV and S – Level Screening Available[2/]

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	**SPD48SM & SMS** **SPD49SM & SMS** **SPD50SM & SMS** **SPD51SM & SMS**	V_{RRM} V_{RWM} V_R	50 75 100 125	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_A = 25ºC)		**Io**	200	**mAmps**
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on Io, Allow Junction to Reach Equilibrium Between Pulses, T_A = 25ºC)		I_{FSM}	4	**Amps**
Operating & Storage Temperature		**Top & Tstg**	-65 to +200	**ºC**
Maximum Thermal Resistance Junction to End Tab		$R_{\theta JE}$	0.35	**ºC/mW**

1/ For Ordering Information, Price, and Availability – Contact Factory.
2/ Screening Based on MIL-PRF-19500. Screening Flows Available on Request.

SM (Round)

SMS (Square)



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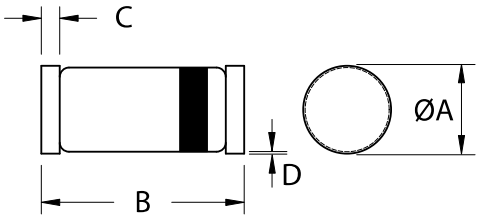
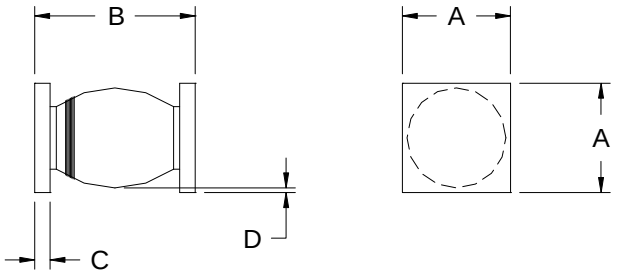
Electrical Characteristics		Symbol	Max	Units
Instantaneous Forward Voltage Drop (T_A = 25ºC, 300-500µs pulse)	I_F = 10mA$_{DC}$ I_F = 100mA$_{DC}$	V_{F1}	1.0 1.2	V_{DC}
Instantaneous Forward Voltage Drop (T_A = -55ºC, 300-500µs pulse)	I_F = 10mA$_{DC}$ I_F = 100mA$_{DC}$	V_{F2}	1.1 1.3	V_{DC}
Reverse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

Case Outline: Round Tab (SM)



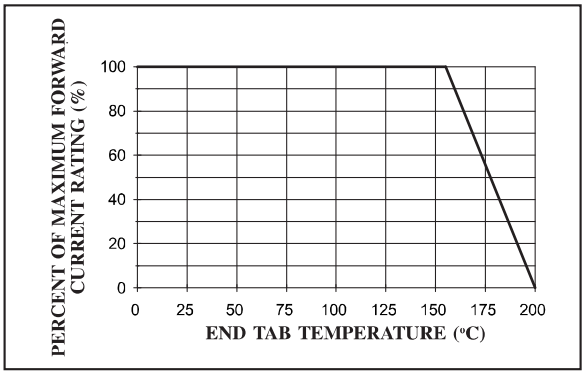
DIMENSIONS		
DIM	**MIN**	**MAX**
A	0.054”	0..085”
B	—	0.150”
C	0.010”	0.028”
D	.001”	—

Case Outline: Square Tab (SMS)

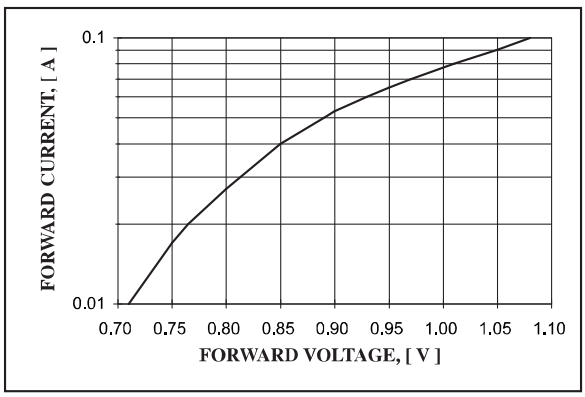


DIMENSIONS SDR1304 & SDR1306		
DIM	**MIN**	**MAX**
A	0.065”	0.085”
B	---	0.200”
C	0.022”	0.028”
D	0.001”	---

TYPICAL OPERATING CURVES
(T_A = 25ºC unless otherwise specified)



FORWARD VOLTAGE



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

DATA SHEET #: RH0085D | **DOC**