



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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SPD5186 Thru SPD5192 and SPD5186SMS Thru SPD5192SMS

3 Amps
150-200 nsec
100-1000 V
Fast Recovery Rectifier

Designer's Data Sheet

Part Number/Ordering Information^{1/}

SPD

- L **Screening^{2/}**
 - = Not Screened
 - TX = TX Level
 - TXV = TXV
 - S = S Level
- Package Type**
 - = Axial Leaded
 - B = Axial w/ .040" lead diameter
 - SMS = Surface Mount Square Tab
- Voltage**

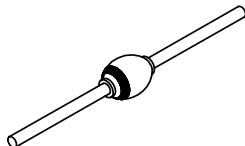
5186=100V	5190=600V
5187=200V	5191=800V
5188=400V	5192=1000V

- Features:**
- Fast Recovery: 150-200 nsec maximum
 - Low Reverse Leakage Current
 - PIV to 1000 Volts
 - Hermetically Sealed
 - High Surge Rating
 - Low Thermal Resistance
 - Faster Recovery Devices Available – Contact Factory
 - TX, TXV, and Space Level Screening Available^{2/}
 - Replacement for 1N5186, 1N5187, 1N5188, and 1N5190

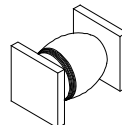
Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SPD5186...SMS	V_{RRM} V_{RWM} V_R	100	Volts
	SPD5187...SMS		200	
	SPD5188...SMS		400	
	SPD5190...SMS		600	
	SPD5191...SMS		800	
	SPD5192...SMS		1000	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 25^\circ C$)		I_o	3	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on I_o , allow junction to reach equilibrium between pulses, $T_A = 25^\circ C$)		I_{FSM}	100	Amps
Operating & Storage Temperature		$T_{OP} \& T_{STG}$	-65 to +175	$^\circ C$
Maximum Thermal Resistance Junction to Leads, L=3/8" B Variant Junction to End Tab (Surface Mount)		$R_{\theta JL}$ $R_{\theta JL}$ $R_{\theta JE}$	20 25 14	$^\circ C/W$

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

Axial



Surface Mount Square Tab





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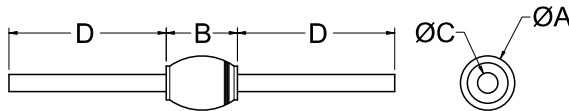
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**SPD5186 Thru SPD5192
and
SPD5186SMS Thru SPD5192SMS**

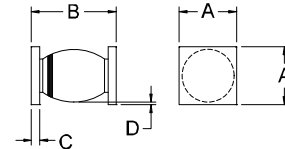
Electrical Characteristics	Symbol	Value	Units
Instantaneous Forward Voltage Drop ($I_F = 3A_{dc}$, $T_A = 25^\circ C$, 300 μs Pulse)	V_F	1.3	V_{DC}
Instantaneous Forward Voltage Drop ($I_F = 3A_{dc}$, $T_A = -55^\circ C$, 300 μs Pulse)	V_F	1.45	V_{DC}
Reverse Leakage Current (Rated V_R , $T_A = 25^\circ C$, 300 μs minimum pulse)	I_R	5	μA
Reverse Leakage Current (Rated V_R , $T_A = 100^\circ C$, 300 μs minimum pulse)	I_R	200	μA
Reverse Recovery Time ($I_F = 500\text{ mA}$, $I_R = 1\text{ Amp}$, $I_{RR} = 250\text{ mA}$, $T_A = 25^\circ C$)	t_{RR}	SPD5186...SMS-SPD5188...SMS SPD5190...SMS-SPD5192...SMS	nsec
		150 200	
Junction Capacitance ($V_R = 10V_{DC}$, $T_A = 25^\circ C$, $f = 1\text{MHz}$)	C_J	40	pF

CASE OUTLINE: Axial



Dimensions		
DIM	MIN	MAX
A	---	.200"
B	---	.230"
C	.047"	.053"
C (B Variant)	.038"	.042"
D	1.00"	---

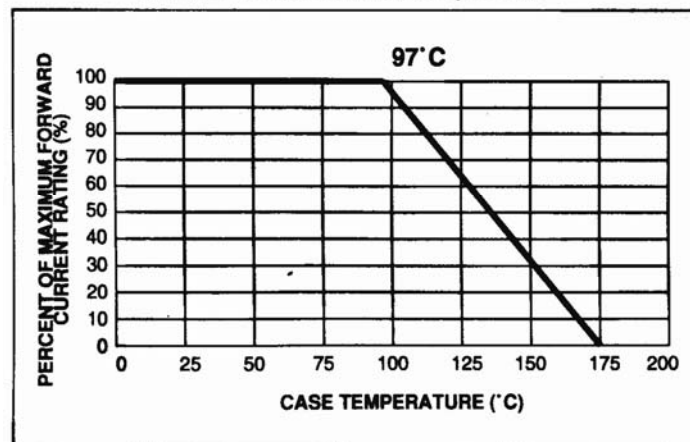
CASE OUTLINE: Surface Mount Square Tab



Dimensions		
DIM	MIN	MAX
A	.172"	.180"
B	.180"	.280"
C	.022"	.028"
D	.002"	---

TYPICAL OPERATING CURVES

$T_A = 25^\circ C$ Unless otherwise specified



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

DATA SHEET #: RF0009D

DOC