



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
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Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPD

— — —

L Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV

S = S Level

L Package Type

— = Axial Leaded

SMS = Surface Mount Square Tab

L Voltage/Family

5415 = 50V

5416 = 100V

5417 = 200V

5418 = 400V

5419 = 500V

5420 = 600V

SPD5415 thru SPD5420

and

SPD5415SMS thru SPD5420SMS

3 AMPS

50 — 600 VOLTS

150 — 400 nsec FAST RECOVERY
RECTIFIER

FEATURES:

- Fast Reverse Recovery (Faster Versions Available)
- PIV to 600 Volts (Higher Voltages Available)
- Hermetically Sealed
- Controlled Avalanche
- Low Thermal Resistance
- High Surge Capability
- Available in Axial & Square Tab Versions
- Metallurgically Bonded
- TX, TXV, and S-Level Screening Available ^{2/}
- Replacement for: 1N 5415, US thru 1N5420, US

MAXIMUM RATINGS ^{3/}

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SPD5415	V_{RRM} V_{RWM} V_R	50	Volts
	SPD5416		100	
	SPD5417		200	
	SPD5418		400	
	SPD5419		500	
	SPD5420		600	
Average Rectified Forward Current ^{4/}	$T_A = 55^\circ\text{C}$ $T_A = 100^\circ\text{C}$	I_O	3 2	Amps
Peak Surge Current (10 surges of 8.3 msec each at 1 minute intervals superimposed on $I_O = 0$, $V_{RSM} = 0$, $T_A = 100^\circ\text{C}$)		I_{FSM}	80	Amps
Operating & Storage Temperature		T_J and T_{STG}	-65 to +175	$^\circ\text{C}$
Thermal Resistance	Junction to Lead for Axial, L = .375"	$R_{\theta JL}$	20	$^\circ\text{C/W}$
	Junction to End Tab for Surface Mount	$R_{\theta JEC}$	10	

NOTES:

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

^{2/} Screened to MIL-PRF-19500.

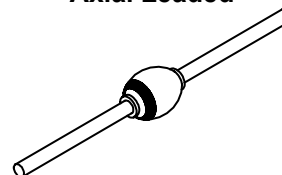
^{3/} Unless Otherwise Specified, All Electrical Characteristics @25°C.

^{4/} These ratings are typical for PC boards where thermal resistance from mounting point to ambient is sufficiently controlled where $T_{J(MAX)}$ is not exceeded.

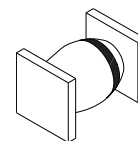
For 3.0 Amps at $T_A = 55^\circ\text{C}$, derate linearly at 22 mA for $55^\circ\text{C} \leq T_A \leq 100^\circ\text{C}$.

For 2.0 Amps at $T_A = 100^\circ\text{C}$, derate linearly at 25 mA for $100^\circ\text{C} \leq T_A \leq 175^\circ\text{C}$.

Axial Leaded



SMS



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

DATA SHEET #: RC0106A

DOC



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**SPD5415 thru SPD5420
and
SPD5415SMS thru SPD5420SMS**

ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS		SYMBOL	VALUE		UNIT
			MIN	MAX	
Forward Voltage	$I_F = 1.5 \text{ Adc}$	V_{F1}	0.5	1.2	Vdc
	$I_F = 9 \text{ Adc}, 300 \mu\text{s Pulse}$	V_{F2}	0.6	1.5	
	$I_F = 0.5 \text{ Adc}, T_A = -55^\circ\text{C}$	V_{F3}	0.5	1.4	
Breakdown Voltage ($I_R = 50 \mu\text{Adc}$)	SPD5415	$V_{(BR)}$	55		Vdc
	SPD5416		110		
	SPD5417		220		
	SPD5418		440		
	SPD5419		550		
	SPD5420		660		
Maximum Reverse Leakage Current	(Rated $V_R, T_A = 25^\circ\text{C}$)	I_{R1}		1.0	μA
	(SPD5415 thru 5417- Rated $V_R, T_A = 100^\circ\text{C}$)	I_{R2}		20	
	(SPD5418 thru 5420- Rated $V_R, T_A = 100^\circ\text{C}$)	I_{R3}		30	
Junction Capacitance ($V_R = 4 \text{ Vdc}, 100\text{KHz} \leq f \leq 1\text{MHz}$)		C_J		120	pF
Maximum Reverse Recovery Time ($I_F = 500\text{mA}, I_R = 1\text{A}, I_{RR} = 250\text{mA}$)	SPD5415 thru SPD5418	t_{rr}		150	ns
	SPD5419			250	
	SPD5420			400	

NOTES:

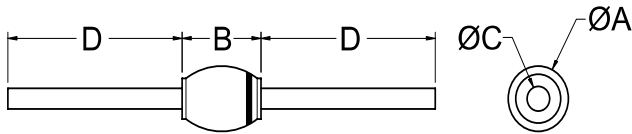
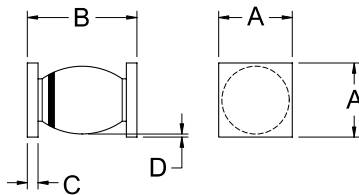
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Package Outlines:

DIMENSIONS (inches)			DIMENSIONS (inches)		
DIM.	Minimum	Maximum	DIM	Minimum	Maximum
A	.140	.180	A	.170	.180
B	.190	.260	B	.240	.300
C	.037	.042	C	.023	.028
D	.90	1.30	D	.002	---
AXIAL 			SMS 		

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