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

SPD5415 thru SPD5420 and SPD5415SMS thru SPD5420SMS

3 AMPS
50 – 600 VOLTS
150 – 400 nsec FAST RECOVERY RECTIFIER

Designer's Data Sheet

Part Number/Ordering Information [1/]

SPD ___ ___ ___

Screening [2/]
- __ = Not Screened
- TX = TX Level
- TXV = TXV
- S = S Level

Package Type
- __ = Axial Leaded
- SMS = Surface Mount Square Tab

Voltage/Family
- 5415 = 50V
- 5416 = 100V
- 5417 = 200V
- 5418 = 400V
- 5419 = 500V
- 5420 = 600V

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 SPD5416 SPD5417 SPD5418 SPD5419 SPD5420	V_{RRM} V_{RWM} V_R	50 100 200 400 500 600	Volts
Average Rectified Forward Current [4/]	T_A = 55°C T_A = 100°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°C)		I_{FSM}	80	Amps
Operating & Storage Temperature		T_J and T_{STG}	-65 to +175	°C
Thermal Resistance	Junction to Lead for Axial, L =.375" Junction to End Tab for Surface Mount	$R_{\theta JL}$ $R_{\theta JEC}$	20 10	°C/W

NOTES:

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

2/ Screened to MIL-PRF-19500.

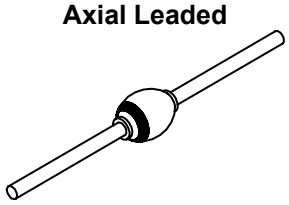
3/ Unless Otherwise Specified, All Electrical Characteristics @25ºC.

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.

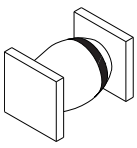
For 3.0 Amps at T_A = 55°C, derate linearly at 22 mA for 55°C ≤ T_A ≤ 100°C.

For 2.0 Amps at T_A = 100°C, derate linearly at 25 mA for 100°C ≤ T_A ≤ 175°C.

Axial Leaded



SMS



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ELECTRICAL CHARACTERISTICS 3/

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

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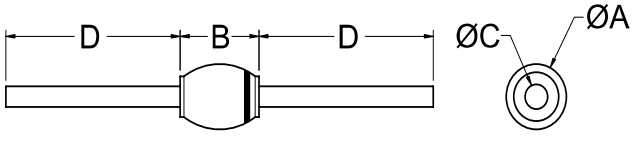
Package Outlines:

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