



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 _ _ _

 | | |

 | | | **L 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

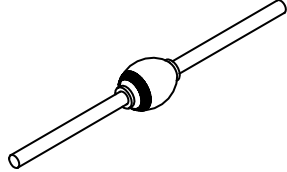
MAXIMUM RATINGS ^{3/}

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SPD5415	50	Volts
	SPD5416	100	
	SPD5417	200	
	SPD5418	400	
	SPD5419	500	
	SPD5420	600	
Average Rectified Forward Current ^{4/}	T _A = 55°C	3	Amps
	T _A = 100°C	2	
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"	20	°C/W
	Junction to End Tab for Surface Mount	10	

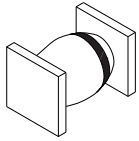
NOTES:

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





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**

ELECTRICAL CHARACTERISTICS ^{3/}

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

NOTES:

- 1/ For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.
- 2/ Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
- 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 $100^\circ\text{C} \leq T_A \leq 175^\circ\text{C}$.

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