

# Maximum Ratings (@T<sub>A</sub> = +25°C unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = +25^{\circ}C$ ) (Note 6)	Ррк	1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 6, 7, & 8)	I <sub>FSM</sub>	200	A
Steady State Power Dissipation @ T <sub>L</sub> = +75°C	PM <sub>(AV)</sub>	5.0	W
Instantaneous Forward Voltage @ I <sub>PP</sub> = 100A (Notes 6 & 8)	V <sub>F</sub>	See Note 9	V

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Operating Temperature Range	TJ	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

Notes: 6. Valid provided that terminals are kept at ambient temperature.

5. Value provided that terminals are kept at another temperature. 7. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum. 8. Unidirectional units only. 9.  $V_F = 3.5V$  for SMCJ5.0A through SMCJ90A, and  $V_F = 5.0V$  for SMCJ100A through SMCJ170A.



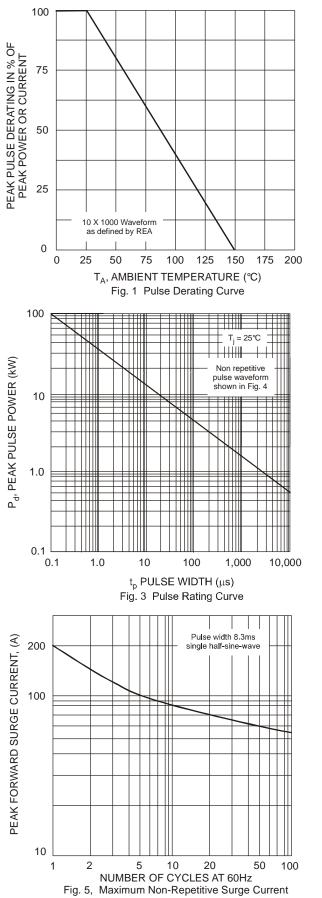
# Electrical Characteristics (@T<sub>A</sub> = +25°C unless otherwise specified.)

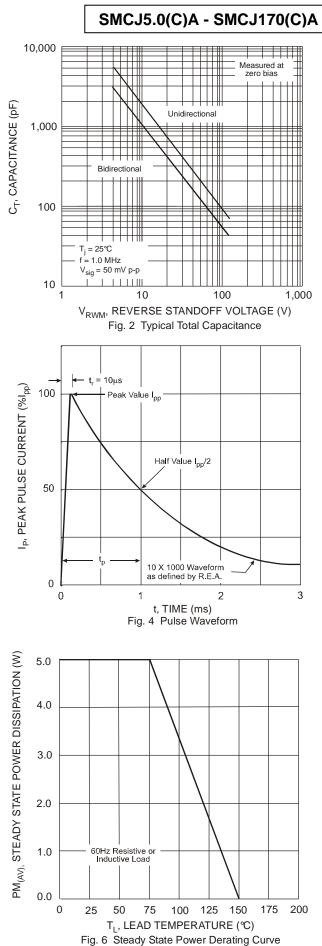
Part Number Add C For Bidirectional	Reverse Standoff Voltage	Vol	kdown tage (Note 11)	Test Current	Max. Reverse Leakage @ V <sub>RWM</sub> (Note 12)	Max. Clamping Voltage @ I <sub>pp</sub>	Max. Peak Pulse Current I <sub>pp</sub>	Markin	ig Code
(Note 10)	V <sub>RWM</sub> (V)	Min (V)	Max (V)	I <sub>T</sub> (mA)	I <sub>R</sub> (μΑ)	V <sub>C</sub> (V)	(A)	BI	UNI
SMCJ5.0(C)A	5.0	6.40	7.07	10	1000	9.2	163.0	BDE	GDE
SMCJ6.0(C)A	6.0	6.67	7.37	10	1000	10.3	145.6	BDG	GDG
SMCJ6.5(C)A	6.5	7.22	7.98	10	500	11.2	133.9	BDK	GDK
SMCJ7.0(C)A	7.0	7.78	8.60	10	200	12.0	125.0	BDM	GDM
SMCJ7.5(C)A	7.5	8.33	9.21	1.0	100	12.9	116.3	BDP	GDP
SMCJ8.0(C)A	8.0	8.89	9.83	1.0	50	13.6	110.3	BDR	GDR
SMCJ8.5(C)A	8.5	9.44	10.4	1.0	20	14.4	104.2	BDT	GDT
SMCJ9.0(C)A	9.0	10.00	11.1	1.0	10	15.4	97.4	BDV	GDV
SMCJ10(C)A	10.0	11.10	12.3	1.0	5.0	17.0	88.2	BDX	GDX
SMCJ11(C)A	11.0	12.20	13.5	1.0	5.0	18.2	82.4	BDZ	GDZ
SMCJ12(C)A	12.0	13.30	14.7	1.0	5.0	19.9	75.3	BEE	GEE
SMCJ13(C)A	13.0	14.40	15.9	1.0	5.0	21.5	69.7	BEG	GEG
SMCJ14(C)A	14.0	15.60	17.2	1.0	5.0	23.2	64.7	BEK	GEK
SMCJ15(C)A	15.0	16.70	18.5	1.0	5.0	24.4	61.5	BEM	GEM
SMCJ16(C)A	16.0	17.80	19.7	1.0	5.0	26.0	57.7	BEP	GEP
SMCJ17(C)A	17.0	18.90	20.9	1.0	5.0	27.6	53.3	BER	GER
SMCJ18(C)A	18.0	20.00	22.1	1.0	5.0	29.2	51.4	BET	GET
SMCJ20(C)A	20.0	22.20	24.5	1.0	5.0	32.4	46.3	BEV	GEV
SMCJ22(C)A	22.0	24.40	27.0	1.0	5.0	35.5	42.2	BEX	GEX
SMCJ24(C)A	24.0	26.70	29.5	1.0	5.0	38.9	38.6	BEZ	GEZ
SMCJ26(C)A	26.0	28.90	31.9	1.0	5.0	42.1	35.6	BFE	GFE
SMCJ28(C)A	28.0	31.10	34.4	1.0	5.0	45.4	33.0	BFG	GFG
SMCJ30(C)A	30.0	33.30	36.8	1.0	5.0	48.4	31.0	BFK	GFK
SMCJ33(C)A	33.0	36.70	40.6	1.0	5.0	53.3	28.1	BFM	GFM
SMCJ36(C)A	36.0	40.00	44.2	1.0	5.0	58.1	25.8	BFP	GFP
SMCJ40(C)A	40.0	44.40	49.1	1.0	5.0	64.5	23.2	BFR	GFR
SMCJ43(C)A	43.0	47.80	52.8	1.0	5.0	69.4	21.6	BFT	GFT
SMCJ45(C)A	45.0	50.00	55.3	1.0	5.0	72.7	20.6	BFV	GFV
SMCJ48(C)A	48.0	53.30	58.9	1.0	5.0	77.4	19.4	BFX	GFX
SMCJ51(C)A	51.0	56.70	62.7	1.0	5.0	82.4	18.2	BFZ	GFZ
SMCJ54(C)A	54.0	60.00	66.3	1.0	5.0	87.1	17.2	BGE	GGE
SMCJ58(C)A	58.0	64.40	71.2	1.0	5.0	93.6	16.0	BGG	GGG
SMCJ60(C)A	60.0	66.70	73.7	1.0	5.0	96.8	15.5	BGK	GGK
SMCJ64(C)A	64.0	71.10	78.6	1.0	5.0	103.0	14.6	BGM	GGM
SMCJ70(C)A	70.0	77.80	86.0	1.0	5.0	113.0	13.3	BGP	GGP
SMCJ75(C)A	75.0	83.30	92.1	1.0	5.0	121.0	12.4	BGR	GGR
SMCJ78(C)A	78.0	86.70	95.8	1.0	5.0	126.0	11.4	BGT	GGT
SMCJ85(C)A	85.0	94.40	104	1.0	5.0	137.0	10.4	BGV	GGV
SMCJ90(C)A	90.0	100.00	111	1.0	5.0	146.0	10.3	BGX	GGX
SMCJ100(C)A	100.0	111.00	123	1.0	5.0	162.0	9.3	BGZ	GGZ
SMCJ110(C)A	110.0	122.00	135	1.0	5.0	177.0	8.4	BHE	GHE
SMCJ120(C)A	120.0	133.00	147	1.0	5.0	193.0	7.9	BHG	GHG
SMCJ130(C)A	130.0	144.00	159	1.0	5.0	209.0	7.3	BHK	GHK
SMCJ150(C)A	150.0	167.00	185	1.0	5.0	243. 0	6.2	BHM	GHM
SMCJ160(C)A	160.0	178.00	185	1.0	5.0	243.0	5.8	BHP	GHP
SMCJ170(C)A	170.0	189.00	209	1.0	5.0	275.0	5.5	BHR	GHR

Notes: 10. Suffix C denotes bidirectional device.

11. V<sub>BR</sub> measured with I<sub>T</sub> current pulse = 10 ~ 15 ms. 12. For bidirectional devices having V<sub>RWM</sub> of 10V and under, the I<sub>R</sub> is doubled.







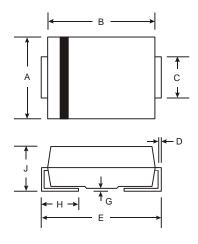
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SMCJ5.0(C)A - SMCJ170(C)A Document number: DS19003 Rev. 19 - 2 Downloaded from Arrow.com.



# **Package Outline Dimensions**

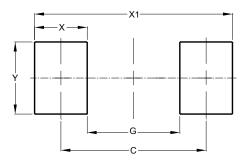
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SMC				
Dim	Min	Max		
Α	5.59	6.22		
В	6.60	7.11		
С	2.75	3.18		
D	0.15	0.31		
E	7.75	8.13		
G	0.10	0.20		
Н	0.76	1.52		
J	2.00	2.50		
All Dimensions in mm				

# **Suggested Pad Layout**

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value		
Dimensions	(in mm)		
С	6.90		
G	4.40		
Х	2.50		
X1	9.40		
Y	3.30		



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