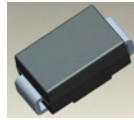


Features

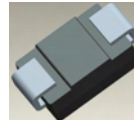
- 1500W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Unidirectional and Bidirectional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band (Note: Bidirectional devices have no polarity indicator.)
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.21 grams (approximate)



Top View



Bottom View

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above T _A = 25° C) (Note 3)	P _{PK}	1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Notes 3, 4, & 5)	I _{FSM}	200	A
Steady State Power Dissipation @ T _L = 75°C	PM(AV)	5.0	W
Instantaneous Forward Voltage @ I _{PP} = 100A (Notes 3 & 5)	V _F	See Note 6	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +175	°C

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/quality/lead_free.html.
 2. No purposefully added lead. Halogen and Antimony free.
 3. Valid provided that terminals are kept at ambient temperature.
 4. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
 5. Unidirectional units only.
 6. V_F = 3.5V for SMCJ5.0A through SMCJ90A, and V_F = 5.0V for SMCJ100A through SMCJ170A.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Part Number Add C For Bidirectional (Note 7)	Reverse Standoff Voltage	Breakdown Voltage V _{BR} @ I _T (Note 8)		Test Current I _T (mA)	Max. Reverse Leakage @ V _{RWM} (Note 9)	Max. Clamping Voltage @ I _{pp}	Max. Peak Pulse Current I _{pp}	Marking Code	
		V _{RWM} (V)	Min (V)	Max (V)				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 GKG
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	7.2	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	197	1.0	5.0	259.0	5.8	BHP GHP
SMCJ170(C)A	170.0		189.00	209	1.0	5.0	275.0	5.5	BHR GHR

- Notes:
- Suffix C denotes Bidirectional device.
 - V_{BR} measured with I_T current pulse = 300μs.
 - For Bidirectional devices having V_{RWM} of 10V and under, the I_R is doubled.

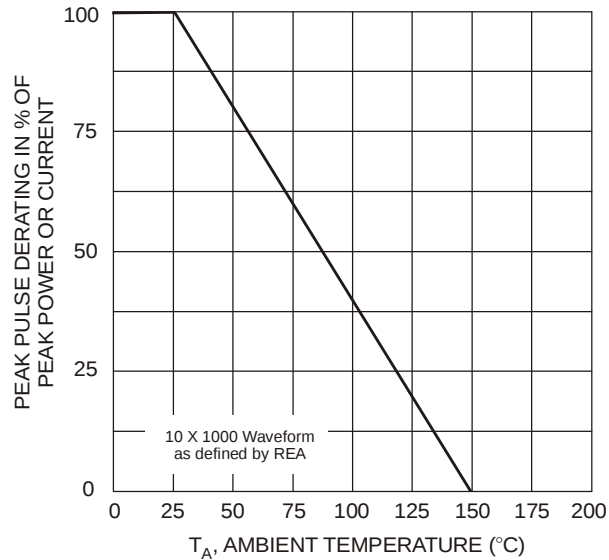


Fig. 1 Pulse Derating Curve

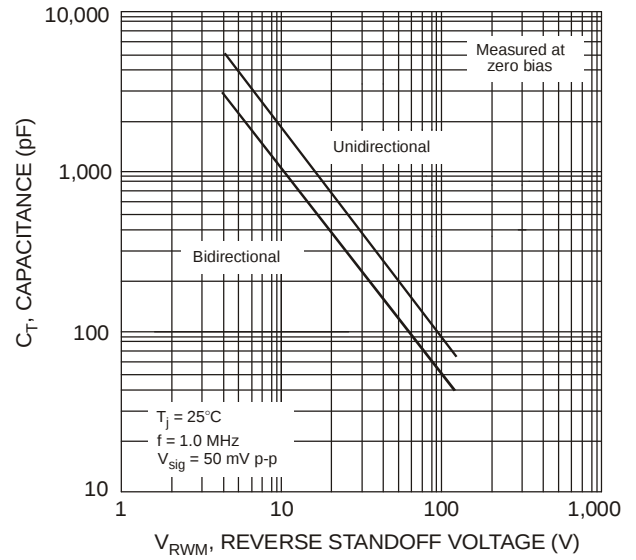


Fig. 2 Typical Total Capacitance

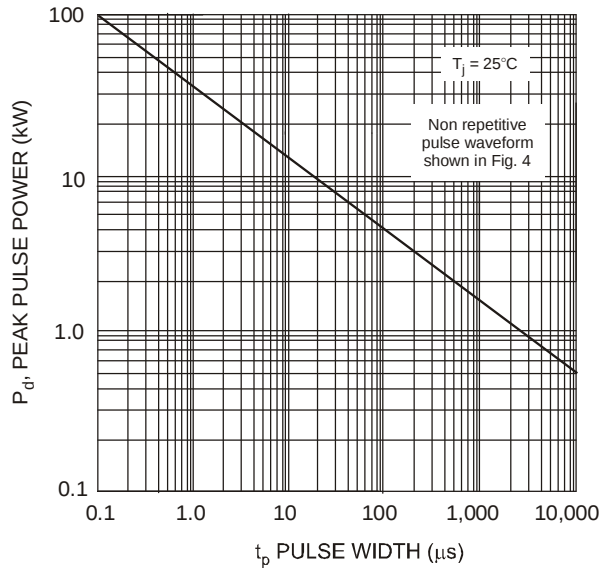


Fig. 3 Pulse Rating Curve

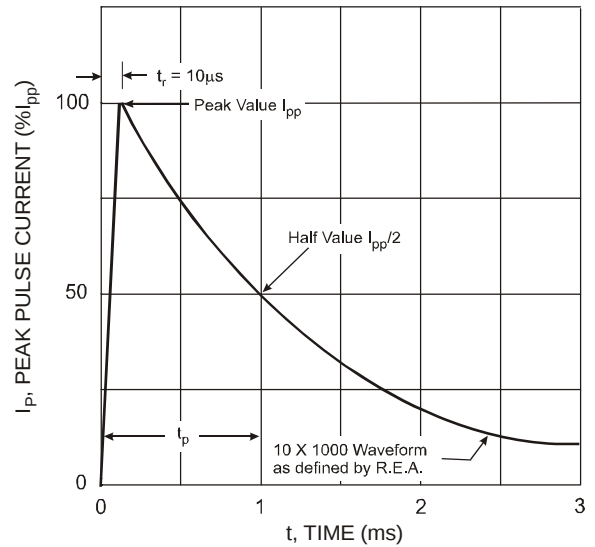


Fig. 4 Pulse Waveform

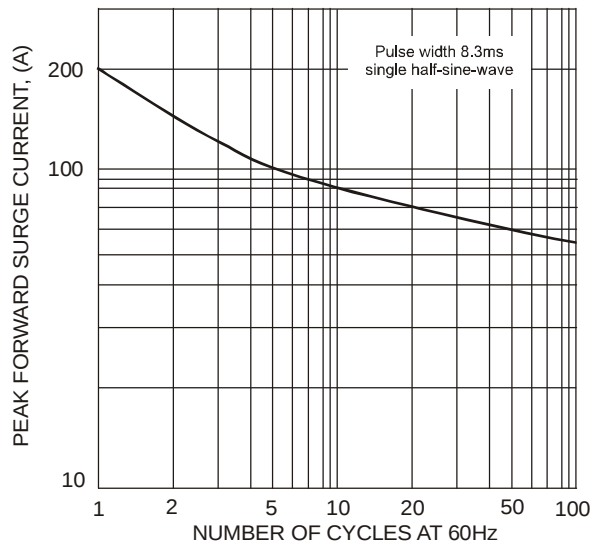


Fig. 5, Maximum Non-Repetitive Surge Current

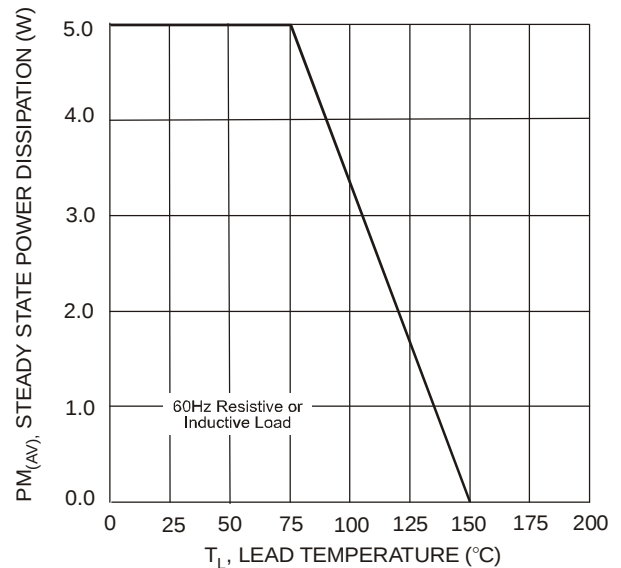


Fig. 6 Steady State Power Derating Curve

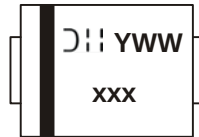
Ordering Information (Note 10)

Part Number	Case	Packaging
SMCJXXX(C)A-13-F	SMC	3000/Tape & Reel

*x = Device Voltage, e.g., SMCJ170A-13-F.

Notes: 10. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



xxx = Product type marking code (See Page 2)

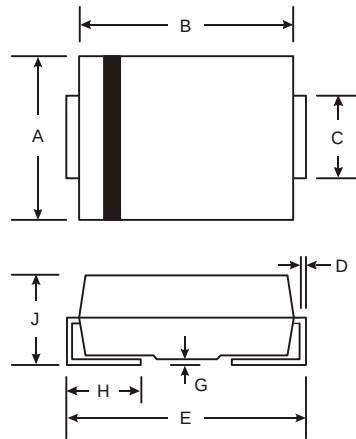
DII = Manufacturers' code marking

YWW = Date code marking

Y = Last digit of year (ex: 2 for 2002)

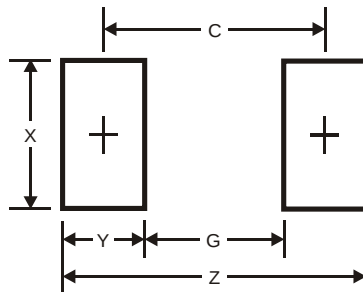
WW = Week code 01 to 52

Package Outline Dimensions



SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	9.3
G	4.4
X	3.3
Y	2.5
C	6.8

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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