NOT RECOMMENDED FOR NEW DESIGN
USE 3.0SMCJ5.0A /14A /20A /22A /24A

3.0SMCJ6.0A - 3.0SMCJ170A

3000W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

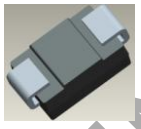
Features

- 3000W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Excellent Clamping Capability
- Fast Response Time
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208 e3
- Lead Free Plating (Matte Tin Finish). Please see Ordering Information
- Polarity Indicator: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- 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 (Note 4)	P_{PK}	3000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Notes 5 & 6)	I_{FSM}	300	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Non-repetitive current pulse, per Fig. 4 and derated above T_A = 25°C per Fig. 1.
5. Mounted on 8.00mm^2 (0.013mm thick) land areas.
6. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.

Electrical Characteristics (@T_A = 25°C, unless otherwise specified.)

Part Number (Note 8)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 7)		Test Current	Max. Reverse Leakage @ V_{RWM}	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Marking Code
	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (µA)	V_C (V)	(A)	
3.0SMCJ6.0A	6.0	6.67	7.37	10	1000	10.3	291.3	HDG
3.0SMCJ6.5A	6.5	7.22	7.98	10	500	11.2	267.9	HDK
3.0SMCJ7.0A	7.0	7.78	8.60	10	200	12.0	250.0	HDM
3.0SMCJ7.5A	7.5	8.33	9.21	1.0	100	12.9	232.6	HDP
3.0SMCJ8.0A	8.0	8.89	9.83	1.0	50	13.6	220.6	HDR
3.0SMCJ8.5A	8.5	9.44	10.43	1.0	25	14.4	208.3	HDT
3.0SMCJ9.0A	9.0	10.00	11.05	1.0	10	15.4	194.8	HDV
3.0SMCJ10A	10.0	11.10	12.27	1.0	5.0	17.0	176.5	HDX
3.0SMCJ11A	11.0	12.20	13.5	1.0	5.0	18.2	164.8	HDZ
3.0SMCJ12A	12.0	13.30	14.7	1.0	5.0	19.9	150.8	HEE
3.0SMCJ13A	13.0	14.40	15.9	1.0	5.0	21.5	139.5	HEG
3.0SMCJ14A	14.0	15.60	17.2	1.0	5.0	23.2	129.3	HEK
3.0SMCJ15A	15.0	16.70	18.5	1.0	5.0	24.2	124.0	HEM
3.0SMCJ16A	16.0	17.80	19.7	1.0	5.0	26.0	115.4	HEP
3.0SMCJ17A	17.0	18.90	20.9	1.0	5.0	27.6	108.7	HER
3.0SMCJ18A	18.0	20.00	22.1	1.0	5.0	29.2	102.7	HET
3.0SMCJ26A	26.0	28.90	31.9	1.0	5.0	42.1	71.3	HFE
3.0SMCJ33A	33.0	36.70	40.6	1.0	5.0	53.3	56.3	HFM
3.0SMCJ36A	36.0	40.00	44.2	1.0	5.0	58.1	51.6	HFP
3.0SMCJ40A	40.0	44.40	49.1	1.0	5.0	64.5	46.5	HFR
3.0SMCJ43A	43.0	47.80	52.8	1.0	5.0	69.4	43.2	HFT
3.0SMCJ45A	45.0	50.00	55.3	1.0	5.0	72.7	41.3	HFV
3.0SMCJ48A	48.0	53.30	58.9	1.0	5.0	77.4	38.8	HFX
3.0SMCJ51A	51.0	56.70	62.7	1.0	5.0	82.4	36.4	HFZ
3.0SMCJ54A	54.0	60.00	66.3	1.0	5.0	87.1	34.4	HGE
3.0SMCJ60A	60.0	66.70	73.7	1.0	5.0	96.8	31.0	HGK
3.0SMCJ64A	64.0	71.10	78.6	1.0	5.0	103.0	29.1	HGM
3.0SMCJ70A	70.0	77.80	86.0	1.0	5.0	113.0	26.5	HGP
3.0SMCJ75A	75.0	83.30	92.1	1.0	5.0	121.0	24.8	HGR
3.0SMCJ78A	78.0	86.70	95.8	1.0	5.0	126.0	23.8	HGT
3.0SMCJ85A	85.0	94.40	104.3	1.0	5.0	137.0	21.9	HGV
3.0SMCJ90A	90.0	100.00	110.5	1.0	5.0	146.0	20.5	HGX
3.0SMCJ100A	100.0	111.00	122.7	1.0	5.0	162.0	18.5	HGZ
3.0SMCJ110A	110.0	122.00	134.8	1.0	5.0	177.0	16.9	HHE
3.0SMCJ120A	120.0	133.00	147.0	1.0	5.0	193.0	15.5	HHG
3.0SMCJ130A	130.0	144.00	159.2	1.0	5.0	209.0	14.4	HHK
3.0SMCJ150A	150.0	167.00	184.6	1.0	5.0	243. 0	12.3	HHM
3.0SMCJ160A	160.0	178.00	196.7	1.0	5.0	259. 0	11.6	HHP
3.0SMCJ170A	170.0	189.00	208.9	1.0	5.0	275.0	10.9	HHR

Notes: 7. V_{BR} measured with I_T current pulse = 300µs.
8. Additional Voltages can be found on DS30818 available on http://www.diodes.com.

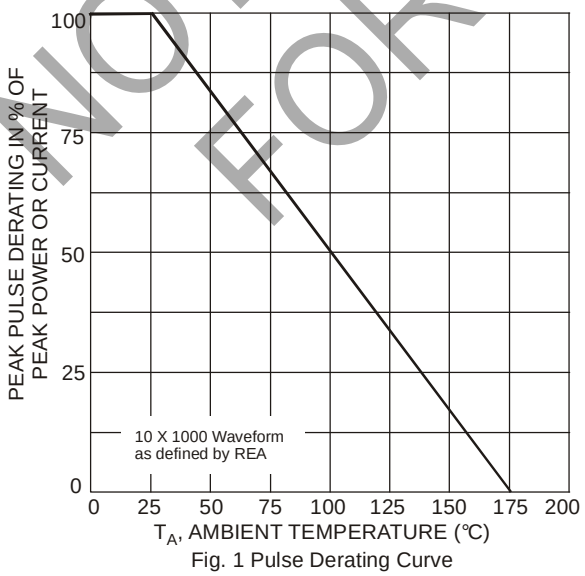


Fig. 1 Pulse Derating Curve

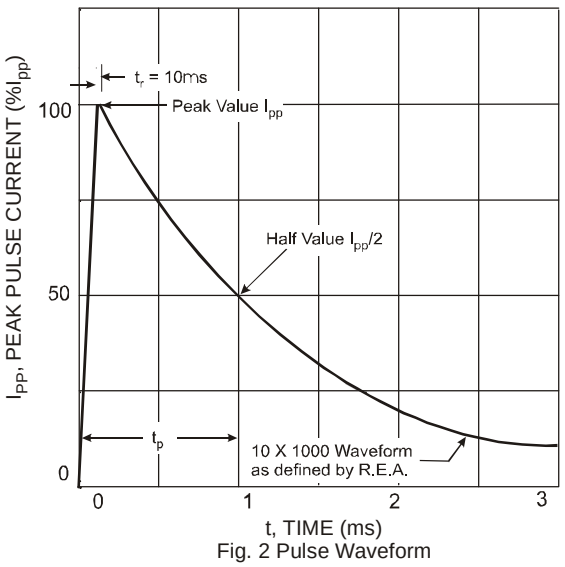


Fig. 2 Pulse Waveform

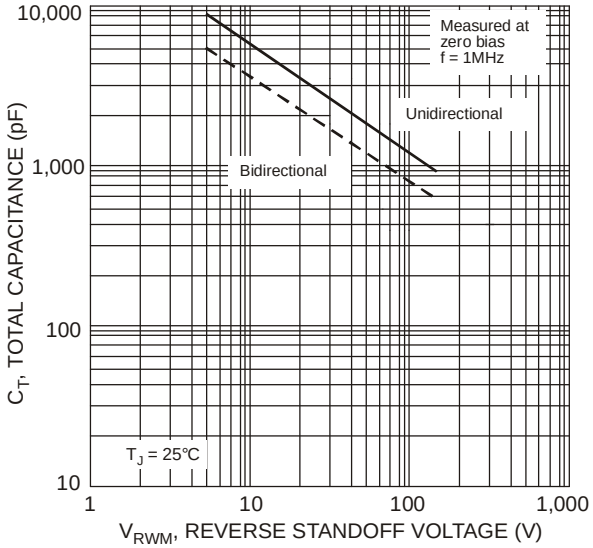


Fig. 3 Typical Total Capacitance vs. Reverse Standoff Voltage

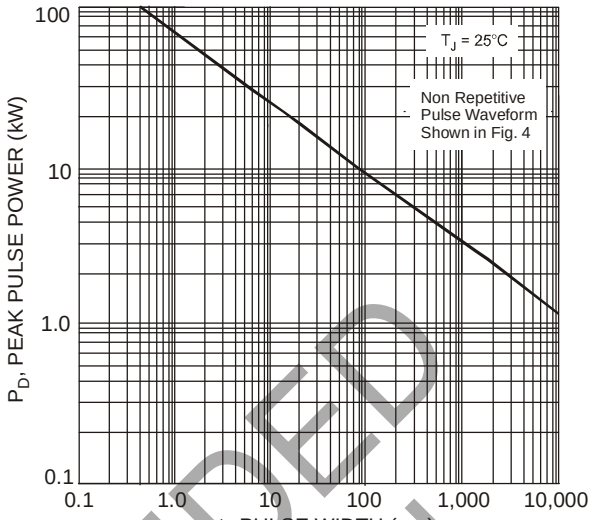


Fig. 4 Pulse Rating Curve

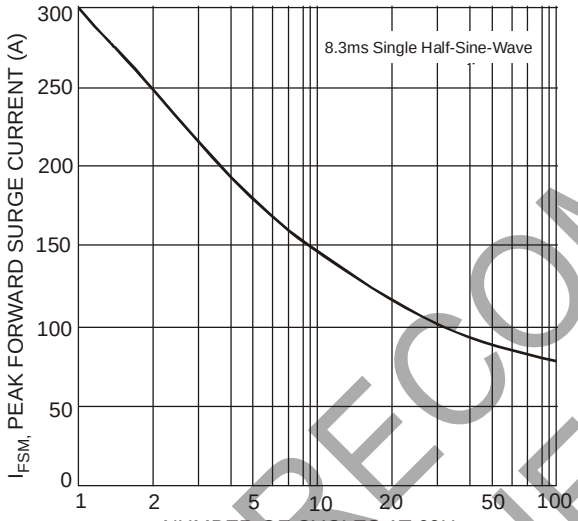


Fig. 5 Maximum Non-Repetitive Surge Current

Ordering Information (Note 9)

Part Number	Case	Packaging
3.0SMCJxxxA-13*	SMC	3,000/Tape & Reel

* xxx = Device Voltage, e.g., 3.0SMCJ170A-13

Notes: 9. For packaging details, go to our website at https://www.diodes.com/assets/Packaging-Support-Docs/Ap02007.pdf.

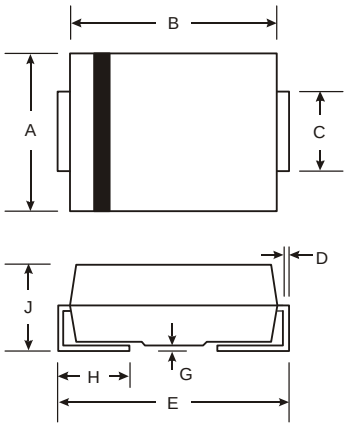
Marking Information

xxx = Product type marking code
See Electrical Characteristics Table
= Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year (ex: 5 for 2005)
WW = Week code 01 to 52

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

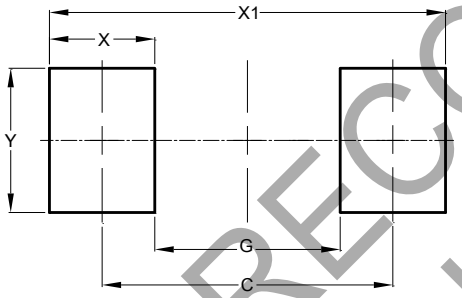
SMC



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	2.50
All Dimensions in mm		

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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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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