

# SMCJ Transient Voltage Suppressor Diode Series

# BOURNS®

## Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V <sub>BR</sub> (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V <sub>RWM</sub>	Maximum Clamping Voltage @ I <sub>pp</sub> (10/1000 μs)	Maximum Peak Pulse Current (10/1000 μs)	Maximum Clamping Voltage @ I <sub>pp</sub> (8/20 μs)	Maximum Peak Current (8/20 μs)
Part No.	Marking	Part No.	Marking	Min.	Max.	@ I <sub>T</sub> (mA)	V <sub>RWM</sub> (V)	I <sub>R</sub> (μA)	V <sub>c</sub> (V)	I <sub>pp</sub> (A)	V <sub>c</sub> (V)	I <sub>pp</sub> (A)
SMCJ5.0A	GDE	SMCJ5.0CA	BDE	6.40	7.00	10	5	800	9.2	163	12	815
SMCJ6.0A	GDG	SMCJ6.0CA	BDG	6.67	7.37	10	6	800	10.3	145.7	13.4	728.5
SMCJ6.5A	GDK	SMCJ6.5CA	BDK	7.22	7.98	10	6.5	500	11.2	134	15	670
SMCJ7.0A	GDM	SMCJ7.0CA	BDM	7.78	8.60	10	7	200	12	125	16	625
SMCJ7.5A	GDP	SMCJ7.5CA	BDP	8.33	9.21	1	7.5	100	12.9	116.3	16.8	581.5
SMCJ8.0A	GDR	SMCJ8.0CA	BDR	8.89	9.83	1	8	50	13.6	110.3	17.7	551.5
SMCJ8.5A	GDT	SMCJ8.5CA	BDT	9.44	10.4	1	8.5	20	14.4	104.2	18.7	521.0
SMCJ9.0A	GDV	SMCJ9.0CA	BDV	10.0	11.1	1	9	10	15.4	97.4	20.0	487.0
SMCJ10A	GDX	SMCJ10CA	BDX	11.1	12.3	1	10	5	17	88.3	22.1	441.5
SMCJ11A	GDZ	SMCJ11CA	BDZ	12.2	13.5	1	11	1	18.2	82.5	23.7	412.5
SMCJ12A	GEE	SMCJ12CA	BEE	13.3	14.7	1	12	1	19.9	75.4	25.9	377.0
SMCJ13A	GEG	SMCJ13CA	BEG	14.4	15.9	1	13	1	21.5	69.8	28.0	349.0
SMCJ14A	GEK	SMCJ14CA	BEK	15.6	17.2	1	14	1	23.2	64.7	30.2	323.5
SMCJ15A	GEM	SMCJ15CA	BEM	16.7	18.5	1	15	1	24.4	61.5	31.7	307.5
SMCJ16A	GEP	SMCJ16CA	BEP	17.8	19.7	1	16	1	26	57.7	33.8	288.5
SMCJ17A	GER	SMCJ17CA	BER	18.9	20.9	1	17	1	27.6	54.4	35.9	272.0
SMCJ18A	GET	SMCJ18CA	BET	20.0	22.1	1	18	1	29.2	51.4	38.0	257.0
SMCJ20A	GEV	SMCJ20CA	BEV	22.2	24.5	1	20	1	32.4	46.3	42.1	231.5
SMCJ22A	GEX	SMCJ22CA	BEX	24.4	26.9	1	22	1	35.5	42.3	46.2	211.5
SMCJ24A	GEZ	SMCJ24CA	BEZ	26.7	29.5	1	24	1	38.9	38.6	50.6	193.0
SMCJ26A	GFE	SMCJ26CA	BFE	28.9	31.9	1	26	1	42.1	35.7	54.7	178.5
SMCJ28A	GFG	SMCJ28CA	BFG	31.1	34.4	1	28	1	45.4	33.1	59.0	165.5
SMCJ30A	GFK	SMCJ30CA	BFK	33.3	36.8	1	30	1	48.4	31	63	155
SMCJ33A	GFM	SMCJ33CA	BFM	36.7	40.6	1	33	1	53.3	28.1	69.3	141.0
SMCJ36A	GFP	SMCJ36CA	BFP	40	44.2	1	36	1	58.1	25.9	75.5	129.5
SMCJ40A	GFR	SMCJ40CA	BFR	44.4	49.1	1	40	1	64.5	23.3	83.9	116.5
SMCJ43A	GFT	SMCJ43CA	BFT	47.8	52.8	1	43	1	69.4	21.7	90.2	108.5
SMCJ45A	GFV	SMCJ45CA	BFV	50	55.3	1	45	1	72.7	20.6	94.5	103.0
SMCJ48A	GFY	SMCJ48CA	BFY	53.3	58.9	1	48	1	77.4	19.4	100.6	97.0
SMCJ51A	GFZ	SMCJ51CA	BFZ	56.7	62.7	1	51	1	82.4	18.2	107.1	91.0
SMCJ54A	GGE	SMCJ54CA	BGE	60	66.3	1	54	1	87.1	17.3	113.2	86.5
SMCJ58A	GGG	SMCJ58CA	BGG	64.4	71.2	1	58	1	93.6	16.1	121.7	80.5
SMCJ60A	GGK	SMCJ60CA	BGK	66.7	73.7	1	60	1	96.8	15.5	125.8	77.5
SMCJ64A	GGM	SMCJ64CA	BGM	71.1	78.6	1	64	1	103	14.6	133.9	73.0
SMCJ70A	GGP	SMCJ70CA	BGP	77.8	86.0	1	70	1	113	13.3	146.9	66.5
SMCJ75A	GGR	SMCJ75CA	BGR	83.3	92.1	1	75	1	121	12.4	157.3	62.0
SMCJ78A	GGT	SMCJ78CA	BGT	86.7	95.8	1	78	1	126	11.9	163.8	59.5
SMCJ85A	GGV	SMCJ85CA	BGV	94.4	104	1	85	1	137	11	178	55
SMCJ90A	GGX	SMCJ90CA	BGX	100	111	1	90	1	146	10.3	189.8	51.5
SMCJ100A	GGZ	SMCJ100CA	BGZ	111	123	1	100	1	162	9.3	210.6	46.5
SMCJ110A	GHE	SMCJ110CA	BHE	122	135	1	110	1	177	8.4	230.1	42.5
SMCJ120A	GHG	SMCJ120CA	BHG	133	147	1	120	1	193	7.9	250.9	39.0
SMCJ130A	GHK	SMCJ130CA	BHK	144	159	1	130	1	209	7.2	271.7	36.0
SMCJ150A	GHM	SMCJ150CA	BHM	167	185	1	150	1	243	6.2	315.9	31.0
SMCJ160A	GHP	SMCJ160CA	BHP	178	197	1	160	1	259	5.8	336.7	29.0
SMCJ170A	GHR	SMCJ170CA	BHR	189	209	1	170	1	275	5.5	357.5	27.5
SMCJ180A	GHT	SMCJ180CA	BHT	201	222	1	180	1	292	5.1	379.6	25.5
SMCJ200A	GHV	SMCJ200CA	BHV	224	247	1	200	1	324	4.6	421.2	23.0
SMCJ220A	GHX	SMCJ220CA	BHX	246	272	1	220	1	356	4.2	462.8	21.0
SMCJ250A	GHZ	SMCJ250CA	BHZ	279	309	1	250	1	405	3.7	526.5	18.5
SMCJ300A	GJE	SMCJ300CA	BJE	335	371	1	300	1	486	3.1	631.8	15.5
SMCJ350A	GJG	SMCJ350CA	BJG	391	432	1	350	1	567	2.6	737.1	13.0
SMCJ400A	GJK	SMCJ400CA	BJK	447	494	1	400	1	648	2.3	842.4	11.5
SMCJ408A	408A	SMCJ408CA	408CA	456	504	1	408	1	658	2.3	855.4	11.4
SMCJ440A	GJM	SMCJ440CA	BJM	492	543	1	440	1	713	2.1	926.9	10.5
SMCJ495A	495A	SMCJ495CA	495CA	522.5	577.5	1	495	1	760	2.0	988.0	9.9

### Notes:

- Suffix 'A' denotes a 5 % tolerance unidirectional device.
- Suffix 'CA' denotes a 5 % tolerance bidirectional device.
- For bidirectional devices with a V<sub>R</sub> of 10 volts or less, the I<sub>R</sub> limit is double.

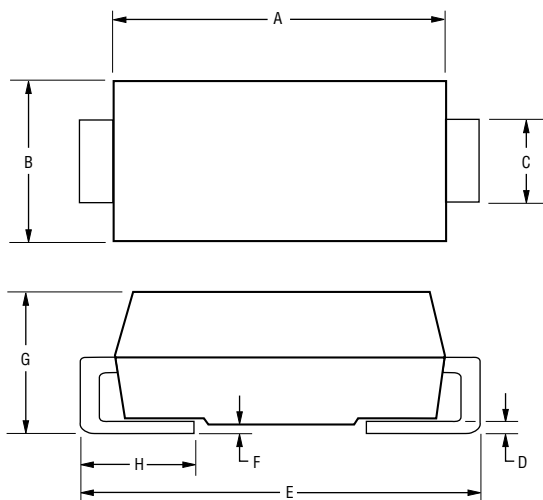
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Users should verify actual device performance in their specific applications.

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# SMCJ Transient Voltage Suppressor Diode Series



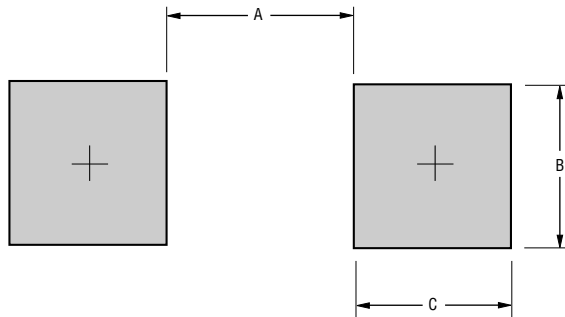
## Product Dimensions



Dimension	SMC (DO-214AB)
A	$\frac{6.60 - 7.11}{(0.260 - 0.280)}$
B	$\frac{5.59 - 6.22}{(0.220 - 0.245)}$
C	$\frac{2.90 - 3.20}{(0.115 - 0.125)}$
D	$\frac{0.15 - 0.31}{(0.006 - 0.012)}$
E	$\frac{7.75 - 8.13}{(0.305 - 0.320)}$
F	$\frac{0.05 - 0.202}{(0.002 - 0.008)}$
G	$\frac{2.00 - 2.62}{(0.079 - 0.103)}$
H	$\frac{0.76 - 1.52}{(0.030 - 0.060)}$

DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Recommended Footprint



Dimension	SMC (DO-214AB)
A (Max.)	$\frac{4.69}{(0.185)}$
B (Min.)	$\frac{3.07}{(0.121)}$
C (Min.)	$\frac{1.52}{(0.060)}$

DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Physical Specifications

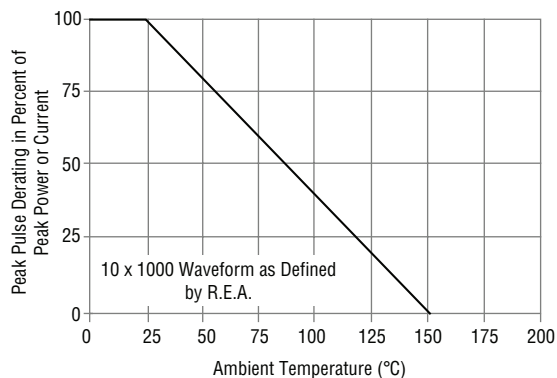
Case ..... Molded plastic per UL Class 94V-0  
 Polarity..... Cathode band indicates unidirectional device  
                     No cathode band indicates bidirectional device  
 Weight .....0.21 grams

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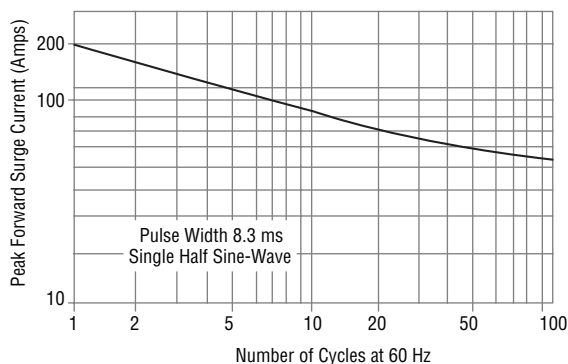


## Rating & Characteristic Curves

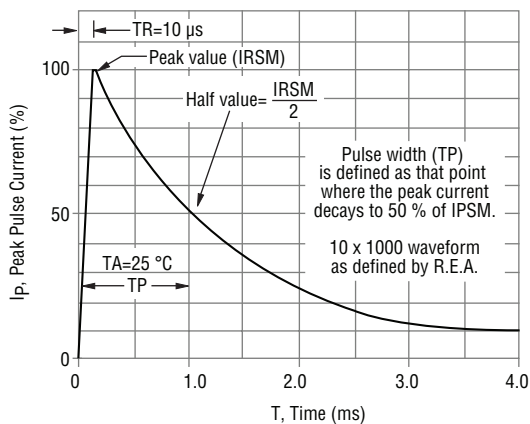
### Pulse Derating Curve



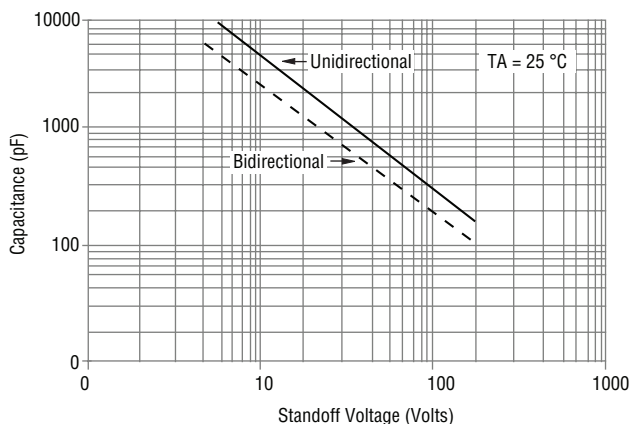
### Maximum Non-Repetitive Surge Current



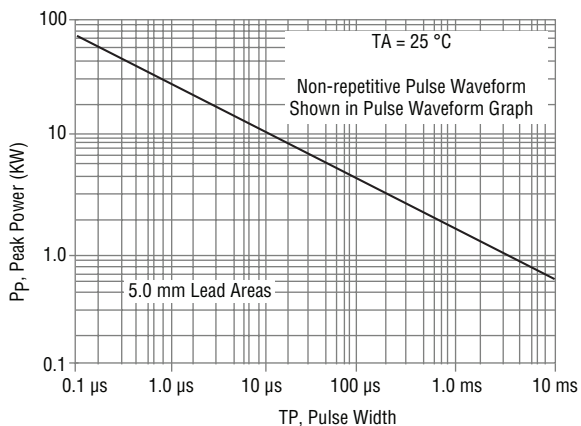
### Pulse Waveform



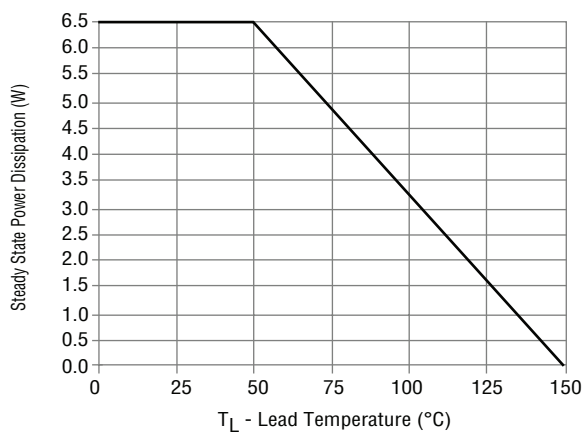
### Typical Junction Capacitance



### Pulse Rating Curve



### Steady State Power Derating Curve



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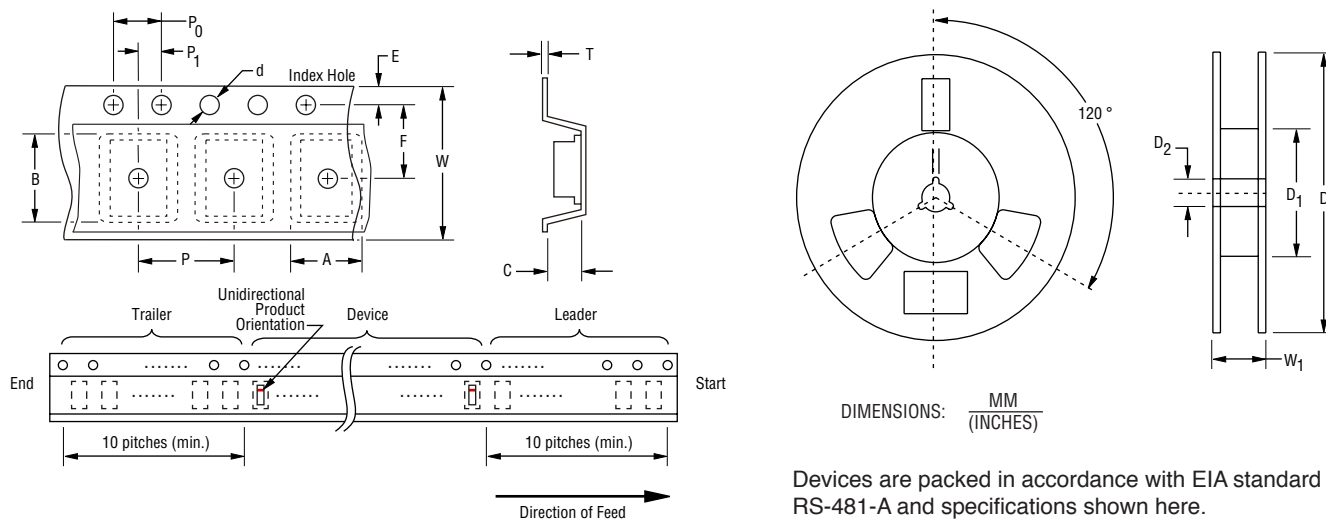
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# SMCJ Transient Voltage Suppressor Diode Series

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## Packaging Information

The product will be dispensed in tape and reel format (see diagram below).



Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMC (DO-214AB)	
		7 Inch Reel	13 Inch Reel
Carrier Width	A	$6.0 \pm 2.0$ (0.236 - 0.079)	
Carrier Length	B	$8.3 \pm 0.20$ (0.327 ± 0.008)	
Carrier Depth	C	$2.5 \pm 0.20$ (0.098 ± 0.008)	
Sprocket Hole	d	$1.50 \pm 0.10$ (0.059 ± 0.004)	
Reel Outside Diameter	D	$\frac{178}{(7.008)}$	$\frac{330}{(12.992)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50.0}{(1.969)}$ MIN.	
Feed Hole Diameter	D <sub>2</sub>	$13.0 +0.50/-0.20$ (0.512 +0.020/-0.008)	
Sprocket Hole Position	E	$1.75 \pm 0.10$ (0.069 ± 0.004)	
Punch Hole Position	F	$7.50 \pm 0.10$ (0.295 ± 0.004)	
Punch Hole Pitch	P	$8.00 \pm 0.10$ (0.315 ± 0.004)	
Sprocket Hole Pitch	P <sub>0</sub>	$4.00 \pm 0.10$ (0.157 ± 0.004)	
Embossment Center	P <sub>1</sub>	$2.00 \pm 0.10$ (0.079 ± 0.004)	
Overall Tape Thickness	T	$0.30 \pm 0.10$ (0.012 ± 0.004)	
Tape Width	W	$16.00 \pm 0.30$ (0.630 ± 0.012)	
Reel Width	W <sub>1</sub>	$\frac{22.4}{(0.882)}$ MAX.	
Quantity per Reel	--	500	3,000

REV. 03/20

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