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# SMLJ 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 Reverse Voltage @ I <sub>RSM</sub>	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I <sub>T</sub> (mA)	V <sub>RWM</sub> (Volts)	I <sub>R</sub> (μA)	V <sub>RSM</sub> (Volts)	I <sub>RSM</sub> (Amps)
SMLJ5.0A	HDE	SMLJ5.0CA	IDE	6.40	7.00	10	5	1000	9.2	326.00
SMLJ6.0A	HDG	SMLJ6.0CA	IDG	6.67	7.37	10	6	1000	10.3	291.30
SMLJ6.5A	HDK	SMLJ6.5CA	IDK	7.22	7.98	10	6.5	500	11.2	267.90
SMLJ7.0A	HDM	SMLJ7.0CA	IDM	7.78	8.60	10	7	200	12	250.00
SMLJ7.5A	HDP	SMLJ7.5CA	IDP	8.33	9.21	1	7.5	100	12.9	232.60
SMLJ8.0A	HDR	SMLJ8.0CA	IDR	8.89	9.83	1	8	50	13.6	220.60
SMLJ8.5A	HDT	SMLJ8.5CA	IDT	9.44	10.4	1	8.5	25	14.4	208.40
SMLJ9.0A	HDV	SMLJ9.0CA	IDV	10.0	11.1	1	9	10	15.4	194.80
SMLJ10A	HDX	SMLJ10CA	IDX	11.1	12.3	1	10	5	17	176.40
SMLJ11A	HDZ	SMLJ11CA	IDZ	12.2	13.5	1	11	5	18.2	164.80
SMLJ12A	HEE	SMLJ12CA	IEE	13.3	14.7	1	12	2	19.9	150.60
SMLJ13A	HEG	SMLJ13CA	IEG	14.4	15.9	1	13	2	21.5	139.40
SMLJ14A	HEK	SMLJ14CA	IEK	15.6	17.2	1	14	2	23.2	129.40
SMLJ15A	HEM	SMLJ15CA	IEM	16.7	18.5	1	15	2	24.4	123.00
SMLJ16A	HEP	SMLJ16CA	IEP	17.8	19.7	1	16	2	26	115.40
SMLJ17A	HER	SMLJ17CA	IER	18.9	20.9	1	17	2	27.6	106.60
SMLJ18A	HET	SMLJ18CA	IET	20.0	22.1	1	18	2	29.2	102.80
SMLJ20A	HEV	SMLJ20CA	IEV	22.2	24.5	1	20	2	32.4	92.60
SMLJ22A	HEX	SMLJ22CA	IEX	24.4	26.9	1	22	2	35.5	84.40
SMLJ24A	HEZ	SMLJ24CA	IEZ	26.7	29.5	1	24	2	38.9	77.20
SMLJ26A	HFE	SMLJ26CA	IFE	28.9	31.9	1	26	2	42.1	71.20
SMLJ28A	HFG	SMLJ28CA	IFG	31.1	34.4	1	28	2	45.4	66.00
SMLJ30A	HFK	SMLJ30CA	IFK	33.3	36.8	1	30	2	48.4	62.00
SMLJ33A	HFM	SMLJ33CA	IFM	36.7	40.6	1	33	2	53.3	56.20
SMLJ36A	HFP	SMLJ36CA	IFP	40	44.2	1	36	2	58.1	51.60
SMLJ40A	HFR	SMLJ40CA	IFR	44.4	49.1	1	40	2	64.5	46.40
SMLJ43A	HFT	SMLJ43CA	IFT	47.8	52.8	1	43	2	69.4	43.20
SMLJ45A	HFV	SMLJ45CA	IFV	50	55.3	1	45	2	72.7	41.20
SMLJ48A	HFX	SMLJ48CA	IFX	53.3	58.9	1	48	2	77.4	38.80
SMLJ51A	HFZ	SMLJ51CA	IFZ	56.7	62.7	1	51	2	82.4	36.40
SMLJ54A	HGE	SMLJ54CA	IGE	60	66.3	1	54	2	87.1	34.40
SMLJ58A	HGG	SMLJ58CA	IGG	64.4	71.2	1	58	2	93.6	32.00
SMLJ60A	HGK	SMLJ60CA	IGK	66.7	73.7	1	60	2	96.8	31.00
SMLJ64A	HGM	SMLJ64CA	IGM	71.1	78.6	1	64	2	103	29.20
SMLJ70A	HGP	SMLJ70CA	IGP	77.8	86.0	1	70	2	113	26.60
SMLJ75A	HGR	SMLJ75CA	IGR	83.3	92.1	1	75	2	121	24.80
SMLJ78A	HGT	SMLJ78CA	IGT	86.7	95.8	1	78	2	126	22.80
SMLJ85A	HGV	SMLJ85CA	IGV	94.4	104	1	85	2	137	20.80
SMLJ90A	HGX	SMLJ90CA	IGX	100	111	1	90	2	146	20.60
SMLJ100A	HGZ	SMLJ100CA	IGZ	111	123	1	100	2	162	18.60
SMLJ110A	HHE	SMLJ110CA	IHE	122	135	1	110	2	177	16.80
SMLJ120A	HHG	SMLJ120CA	IHG	133	147	1	120	2	193	15.60
SMLJ130A	HHH	SMLJ130CA	IHH	144	159	1	130	2	209	14.40
SMLJ150A	HHM	SMLJ150CA	IHM	167	185	1	150	2	243	12.40
SMLJ160A	HHP	SMLJ160CA	IHP	178	197	1	160	2	259	11.60
SMLJ170A	HHR	SMLJ170CA	IHR	189	209	1	170	2	275	11.00

### Notes:

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

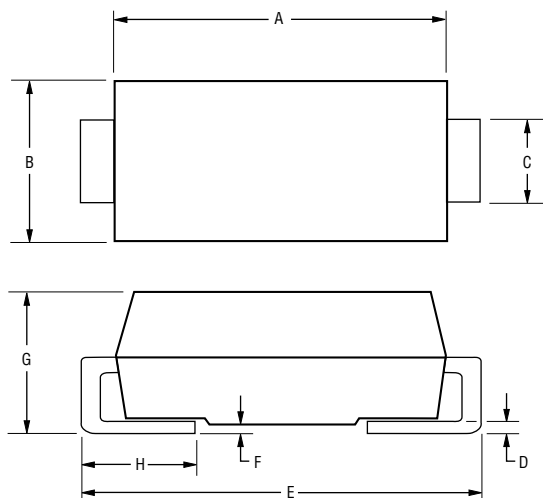
Specifications are subject to change without notice.

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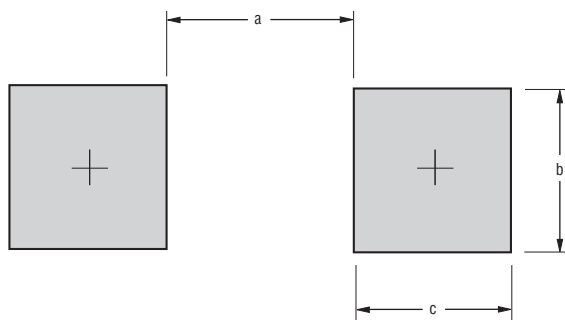
## Product Dimensions



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	$\frac{2.90 - 3.20}{(0.114 - 0.126)}$
D	$\frac{0.15 - 0.31}{(0.006 - 0.112)}$
E	$\frac{7.75 - 8.13}{(0.305 - 0.320)}$
F	$\frac{0.05 - 0.20}{(0.002 - 0.008)}$
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

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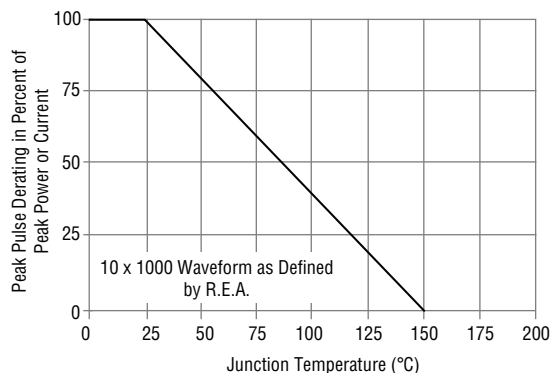
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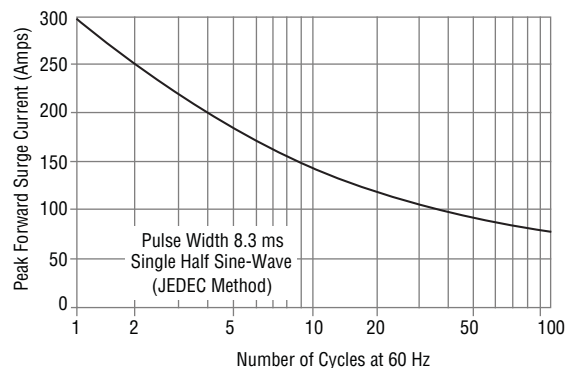
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## Rating & Characteristic Curves

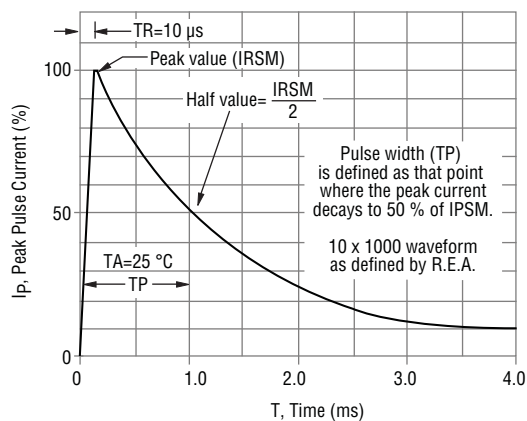
### Pulse Derating Curve



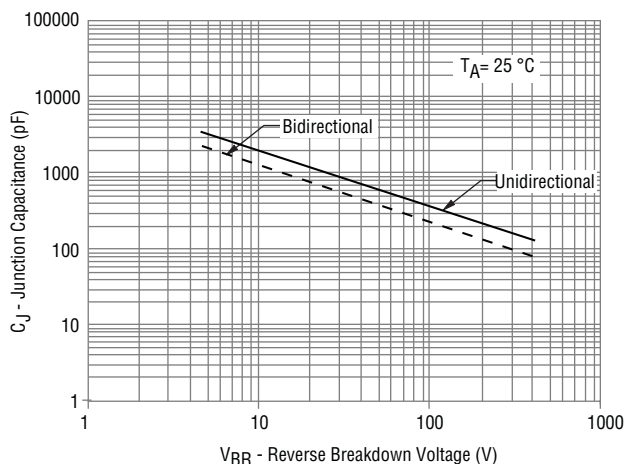
### Maximum Non-Repetitive Surge Current



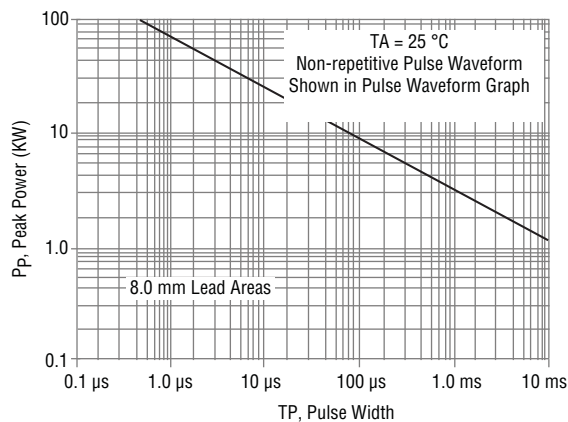
### Pulse Waveform



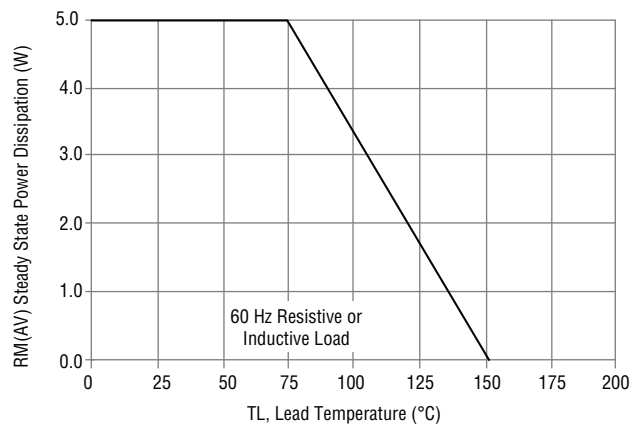
### Typical Junction Capacitance



### Pulse Rating Curve



### Steady State Power Derating Curve



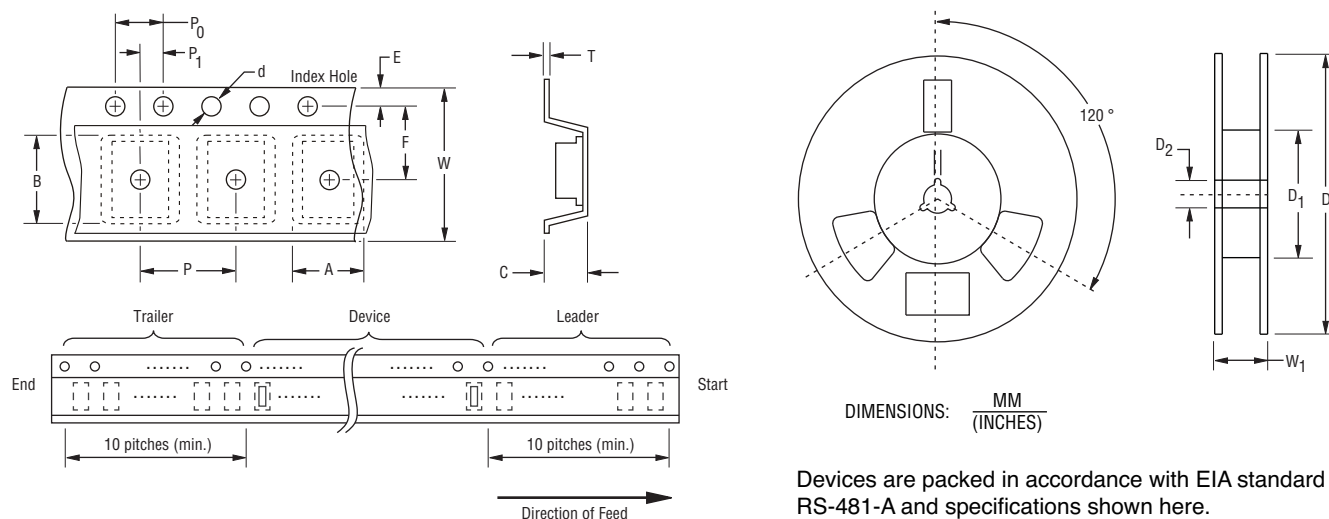
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## Packaging Information

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



Item	Symbol	SMC (DO-214AB)
Carrier Width	A	$6.0 \pm 2.0$ (0.236 - 0.079)
Carrier Length	B	$8.3 \pm 0.20$ (0.327 $\pm$ 0.008)
Carrier Depth	C	$2.5 \pm 0.20$ (0.098 $\pm$ 0.008)
Sprocket Hole	d	$1.50 \pm 0.10$ (0.059 $\pm$ 0.004)
Reel Outside Diameter	D	$330$ (12.992)
Reel Inner Diameter	D <sub>1</sub>	$50.0$ (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 $\pm$ 0.004)
Punch Hole Position	F	$7.50 \pm 0.10$ (0.295 $\pm$ 0.004)
Punch Hole Pitch	P	$8.00 \pm 0.10$ (0.315 $\pm$ 0.004)
Sprocket Hole Pitch	P <sub>0</sub>	$4.00 \pm 0.10$ (0.157 $\pm$ 0.004)
Embossment Center	P <sub>1</sub>	$2.00 \pm 0.10$ (0.079 $\pm$ 0.004)
Overall Tape Thickness	T	$0.30 \pm 0.10$ (0.012 $\pm$ 0.004)
Tape Width	W	$16.00 \pm 0.30$ (0.630 $\pm$ 0.012)
Reel Width	W <sub>1</sub>	$22.4$ (0.882) MAX.
Quantity per Reel	--	3,000

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