

# SMLJ Transient Voltage Suppressor Diode Series

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## 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 Pulse Current (8/20 μs)
Part Number	Part Marking	Part Number	Part 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)
SMLJ5.0A	HDE	SMLJ5.0CA	IDE	6.40	7.00	10	5	1000	9.2	326.00	12.00	1630.50
SMLJ6.0A	HDG	SMLJ6.0CA	IDG	6.67	7.37	10	6	1000	10.3	291.30	13.40	1456.50
SMLJ6.5A	HDK	SMLJ6.5CA	IDK	7.22	7.98	10	6.5	500	11.2	267.90	14.60	1339.50
SMLJ7.0A	HDM	SMLJ7.0CA	IDM	7.78	8.60	10	7	200	12	250.00	15.60	1250.00
SMLJ7.5A	HDP	SMLJ7.5CA	IDP	8.33	9.21	1	7.5	100	12.9	232.60	16.80	1163.00
SMLJ8.0A	HDR	SMLJ8.0CA	IDR	8.89	9.83	1	8	50	13.6	220.60	17.70	1103.00
SMLJ8.5A	HDT	SMLJ8.5CA	IDT	9.44	10.4	1	8.5	25	14.4	208.40	18.70	1041.50
SMLJ9.0A	HDV	SMLJ9.0CA	IDV	10.0	11.1	1	9	10	15.4	194.80	20.00	974.00
SMLJ10A	HDX	SMLJ10CA	IDX	11.1	12.3	1	10	5	17	176.40	22.10	882.50
SMLJ11A	HDZ	SMLJ11CA	IDZ	12.2	13.5	1	11	5	18.2	164.80	23.70	824.00
SMLJ12A	HEE	SMLJ12CA	IEE	13.3	14.7	1	12	2	19.9	150.60	25.90	754.00
SMLJ13A	HEG	SMLJ13CA	IEG	14.4	15.9	1	13	2	21.5	139.40	28.00	697.50
SMLJ14A	HEK	SMLJ14CA	IEK	15.6	17.2	1	14	2	23.2	129.40	30.20	646.50
SMLJ15A	HEM	SMLJ15CA	IEM	16.7	18.5	1	15	2	24.4	123.00	31.70	615.00
SMLJ16A	HEP	SMLJ16CA	IEP	17.8	19.7	1	16	2	26	115.40	33.80	577.00
SMLJ17A	HER	SMLJ17CA	IER	18.9	20.9	1	17	2	27.6	106.60	35.90	543.50
SMLJ18A	HET	SMLJ18CA	IET	20.0	22.1	1	18	2	29.2	102.80	38.00	513.50
SMLJ20A	HEV	SMLJ20CA	IEV	22.2	24.5	1	20	2	32.4	92.60	42.10	463.00
SMLJ22A	HEX	SMLJ22CA	IEX	24.4	26.9	1	22	2	35.5	84.40	46.20	422.50
SMLJ24A	HEZ	SMLJ24CA	IEZ	26.7	29.5	1	24	2	38.9	77.20	50.60	385.50
SMLJ26A	HFE	SMLJ26CA	IFE	28.9	31.9	1	26	2	42.1	71.20	54.70	356.50
SMLJ28A	HFG	SMLJ28CA	IFG	31.1	34.4	1	28	2	45.4	66.00	59.00	330.50
SMLJ30A	HFH	SMLJ30CA	IFH	33.3	36.8	1	30	2	48.4	62.00	62.90	310.00
SMLJ33A	HFM	SMLJ33CA	IFM	36.7	40.6	1	33	2	53.3	56.20	69.30	281.50
SMLJ36A	HFP	SMLJ36CA	IFP	40	44.2	1	36	2	58.1	51.60	75.50	258.00
SMLJ40A	HFR	SMLJ40CA	IFR	44.4	49.1	1	40	2	64.5	46.40	83.90	232.50
SMLJ43A	HFT	SMLJ43CA	IFT	47.8	52.8	1	43	2	69.4	43.20	90.20	216.00
SMLJ45A	HFT	SMLJ45CA	IFV	50	55.3	1	45	2	72.7	41.20	94.50	206.50
SMLJ48A	HFX	SMLJ48CA	IFX	53.3	58.9	1	48	2	77.4	38.80	100.60	194.00
SMLJ51A	HFZ	SMLJ51CA	IFZ	56.7	62.7	1	51	2	82.4	36.40	107.10	182.00
SMLJ54A	HGE	SMLJ54CA	IGE	60	66.3	1	54	2	87.1	34.40	113.20	172.00
SMLJ58A	HGG	SMLJ58CA	IGG	64.4	71.2	1	58	2	93.6	32.00	121.70	160.50
SMLJ60A	HGK	SMLJ60CA	IGK	66.7	73.7	1	60	2	96.8	31.00	125.80	155.00
SMLJ64A	HGM	SMLJ64CA	IGM	71.1	78.6	1	64	2	103	29.20	133.90	145.50
SMLJ70A	HGP	SMLJ70CA	IGP	77.8	86.0	1	70	2	113	26.60	146.90	132.50
SMLJ75A	HGR	SMLJ75CA	IGR	83.3	92.1	1	75	2	121	24.80	157.30	124.00
SMLJ78A	HGT	SMLJ78CA	IGT	86.7	95.8	1	78	2	126	22.80	163.80	119.00
SMLJ85A	HGV	SMLJ85CA	IGV	94.4	104	1	85	2	137	20.80	178.10	109.50
SMLJ90A	HGX	SMLJ90CA	IGX	100	111	1	90	2	146	20.60	189.80	102.50
SMLJ100A	HGZ	SMLJ100CA	IGZ	111	123	1	100	2	162	18.60	210.60	92.50
SMLJ110A	HHE	SMLJ110CA	IHE	122	135	1	110	2	177	16.80	230.10	84.50
SMLJ120A	HHG	SMLJ120CA	IHG	133	147	1	120	2	193	15.60	250.90	77.50
SMLJ130A	HHH	SMLJ130CA	IHH	144	159	1	130	2	209	14.40	271.70	72.00
SMLJ150A	HHM	SMLJ150CA	IHM	167	185	1	150	2	243	12.40	315.90	61.50
SMLJ160A	HHP	SMLJ160CA	IHP	178	197	1	160	2	259	11.60	336.70	58.00
SMLJ170A	HHR	SMLJ170CA	IHR	189	209	1	170	2	275	11.00	357.50	54.50

### 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.

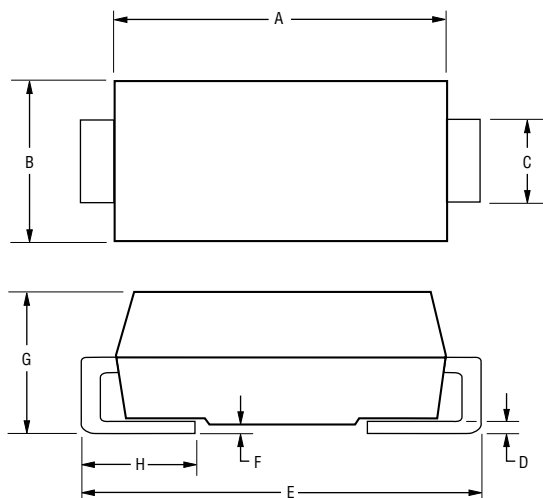
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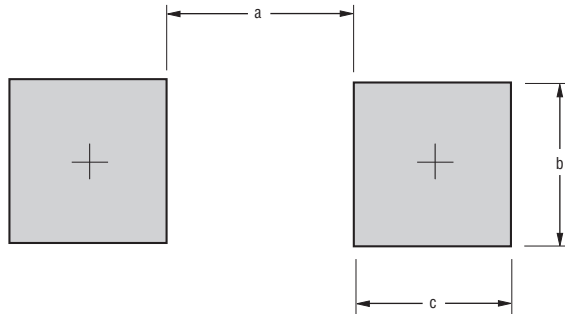
## Product Dimensions



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	$\frac{0.15 - 0.31}{(0.006 - 0.012)}$
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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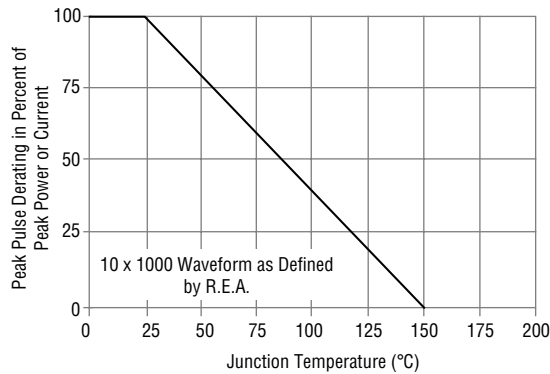
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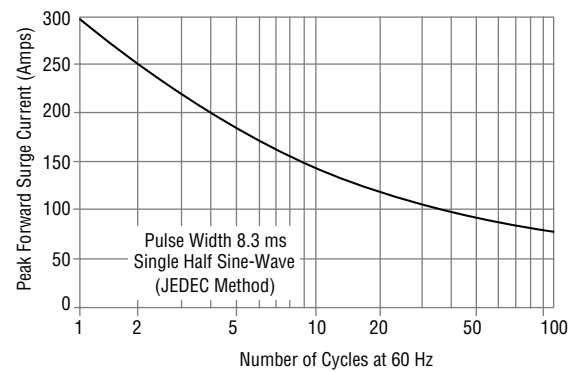
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## Rating & Characteristic Curves

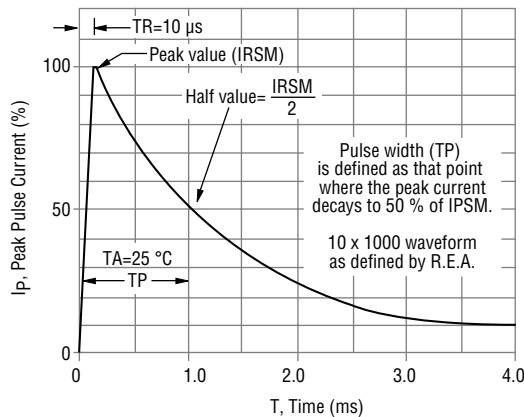
### Pulse Derating Curve



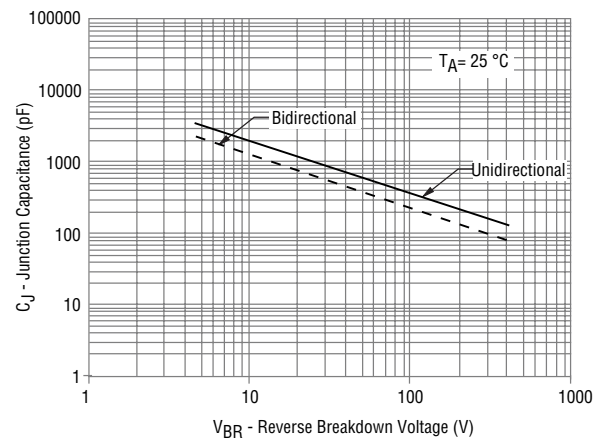
### Maximum Non-Repetitive Surge Current



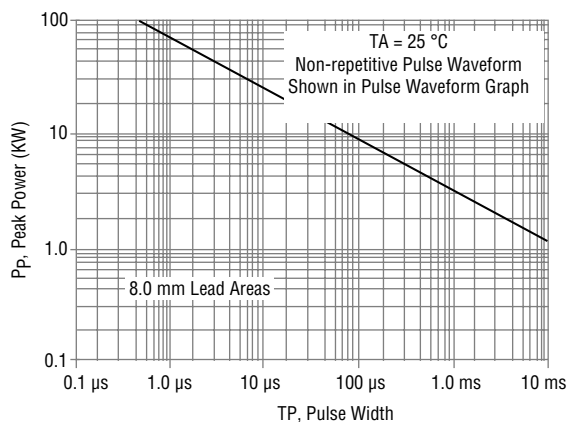
### Pulse Waveform



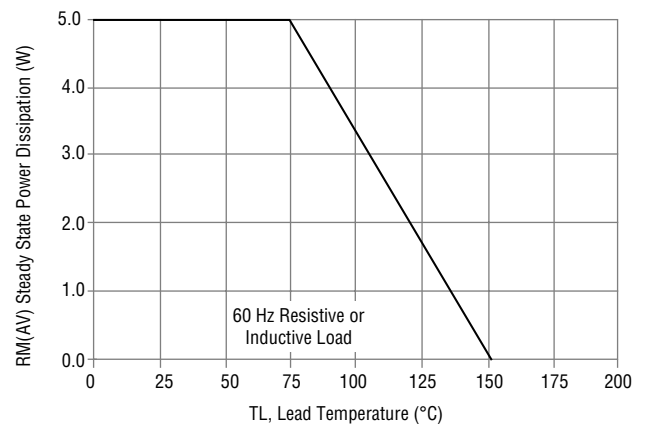
### Typical Junction Capacitance



### Pulse Rating Curve



### Steady State Power Derating Curve



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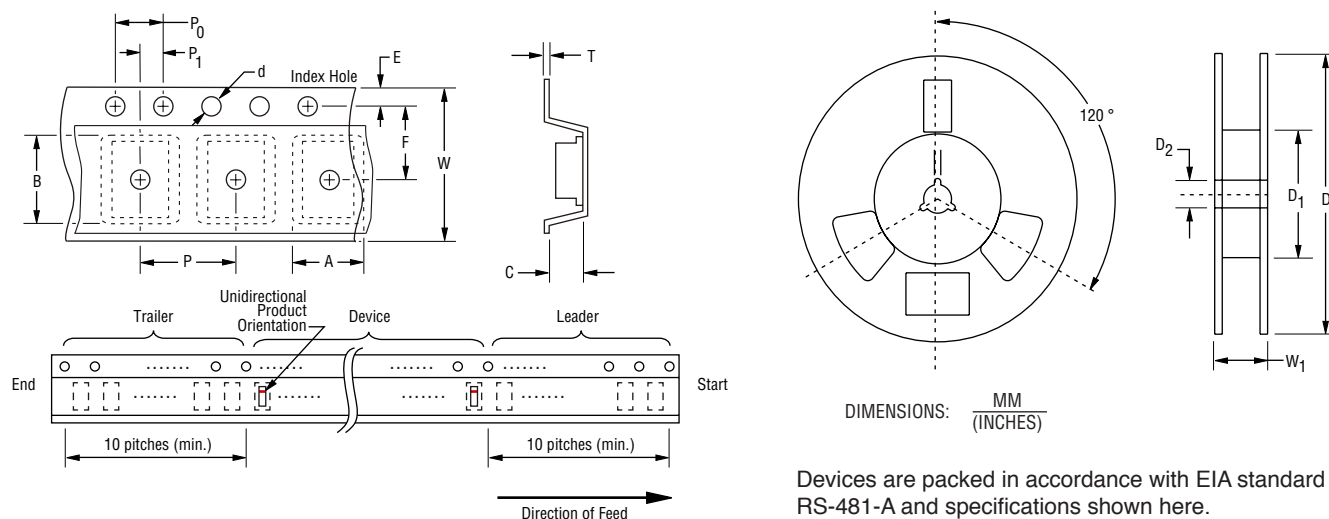
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## Packaging Information

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



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 $\pm$ 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	$\frac{178}{(7.008)}$	$\frac{330}{(12.992)}$
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 $\pm$ 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>	$\frac{22.4}{(0.882)}$ MAX.	
Quantity per Reel	--	500	3,000

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