

## Transient Voltage Suppressors

TVS Diodes - 1500W > SMCJ Series



### Description

The SMCJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Features

- For surface mounted applications in order to optimize board space
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-0
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- Glass passivated junction
- Low inductance
- High Temperature soldering: 260°C/10 seconds at terminals



Package: DO-214AB/ SMC

### Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

### Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000µs waveform (Fig.1)(Note 1), (Note 2)	PPPM	1500	Watts
Peak pulse current of at 10/1000µs waveform (Note 1, Fig.3)	I <sub>PPM</sub>	See Table	Amps
Steady state power dissipation at TA=50°C (Fig.5)	P <sub>M(AV)</sub>	6.5	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I <sub>FSM</sub>	200	Amps
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to 150	°C
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	15	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	75	°C/W

#### Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
2. Mounted on 8.0x8.0mm copper pad to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Electrical Characteristics (TA=25°C)

Part Number		marking code		Reverse Stand-Off Voltage	Breakdown Voltage V <sub>BR</sub> (Volts)@I <sub>T</sub>		Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
Unidirectional	Bidirectional	Uni	Bi	V <sub>RWM</sub> (V)	Min	Max	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (μA)
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	134.0	500
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.0	11.10	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	GDX	BDX	10.0	11.1	12.3	1	17.0	88.3	5
SMCJ11A	SMCJ11CA	GDZ	BDZ	11.0	12.2	13.5	1	18.2	82.5	1
SMCJ12A	SMCJ12CA	GEE	BEE	12.0	13.3	14.7	1	19.9	75.4	1
SMCJ13A	SMCJ13CA	GEG	BEG	13.0	14.4	15.9	1	21.5	69.8	1
SMCJ14A	SMCJ14CA	GEK	BEK	14.0	15.6	17.2	1	23.2	64.7	1
SMCJ15A	SMCJ15CA	GEM	BEM	15.0	16.7	18.5	1	24.4	61.5	1
SMCJ16A	SMCJ16CA	GEP	BEP	16.0	17.8	19.7	1	26.0	57.7	1
SMCJ17A	SMCJ17CA	GER	BER	17.0	18.9	20.9	1	27.6	54.4	1
SMCJ18A	SMCJ18CA	GET	BET	18.0	20.0	22.1	1	29.2	51.4	1
SMCJ20A	SMCJ20CA	GEV	BEV	20.0	22.2	24.5	1	32.4	46.3	1
SMCJ22A	SMCJ22CA	GEX	BEX	22.0	24.4	26.9	1	35.5	42.3	1
SMCJ24A	SMCJ24CA	GEZ	BEZ	24.0	26.7	29.5	1	38.9	38.6	1
SMCJ26A	SMCJ26CA	GFE	BFE	26.0	28.9	31.9	1	42.1	35.7	1
SMCJ28A	SMCJ28CA	GFG	BFG	28.0	31.1	34.4	1	45.4	33.1	1
SMCJ30A	SMCJ30CA	GFK	BFK	30.0	33.3	36.8	1	48.4	31.0	1
SMCJ33A	SMCJ33CA	GFM	BFM	33.0	36.7	40.6	1	53.3	28.2	1

Electrical Characteristics (TA=25°C)

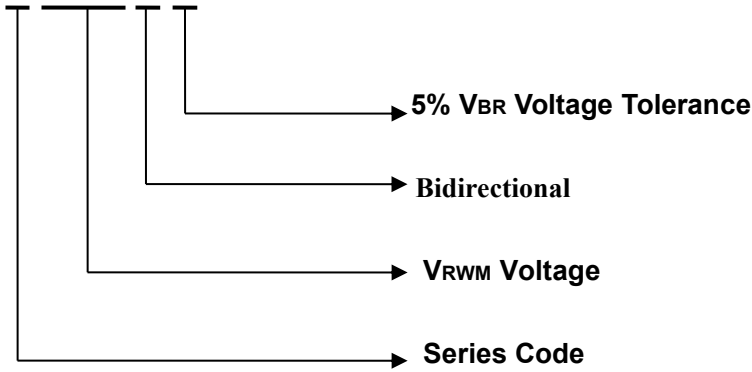
continued

Part Number		marking code		Reverse Stand-Off Voltage	Breakdown Voltage V <sub>BR</sub> (Volts)@I <sub>T</sub>		Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
Unidirectional	Bidirectional	Uni	Bi	V <sub>RWM</sub> (V)	Min	Max	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (μA)
SMCJ36A	SMCJ36CA	GFP	BFP	36.0	40.0	44.2	1	58.1	25.9	1
SMCJ40A	SMCJ40CA	GFR	BFR	40.0	44.4	49.1	1	64.5	23.3	1
SMCJ43A	SMCJ43CA	GFT	BFT	43.0	47.8	52.8	1	69.4	21.7	1
SMCJ45A	SMCJ45CA	GFV	BFV	45.0	50.0	55.3	1	72.7	20.6	1
SMCJ48A	SMCJ48CA	GFX	BFX	48.0	53.3	58.9	1	77.4	19.4	1
SMCJ51A	SMCJ51CA	GFZ	BFZ	51.0	56.7	62.7	1	82.4	18.2	1
SMCJ54A	SMCJ54CA	GGE	BGE	54.0	60.0	66.3	1	87.1	17.3	1
SMCJ58A	SMCJ58CA	GGG	BGG	58.0	64.4	71.2	1	93.6	16.1	1
SMCJ60A	SMCJ60CA	GGK	BGK	60.0	66.7	73.7	1	96.8	15.5	1
SMCJ64A	SMCJ64CA	GGM	BGM	64.0	71.1	78.6	1	103.0	14.6	1
SMCJ70A	SMCJ70CA	GGP	BGP	70.0	77.8	86.0	1	113.0	13.3	1
SMCJ75A	SMCJ75CA	GGR	BGR	75.0	83.3	92.1	1	121.0	12.4	1
SMCJ78A	SMCJ78CA	GGT	BGT	78.0	86.7	95.8	1	126.0	11.9	1
SMCJ85A	SMCJ85CA	GGV	BGV	85.0	94.4	104.0	1	137.0	11.0	1
SMCJ90A	SMCJ90CA	GGX	BGX	90.0	100.0	111.0	1	146.0	10.3	1
SMCJ100A	SMCJ100CA	GGZ	BGZ	100.0	111.0	123.0	1	162.0	9.3	1
SMCJ110A	SMCJ110CA	GHE	BHE	110.0	122.0	135.0	1	177.0	8.5	1
SMCJ120A	SMCJ120CA	GHG	BHG	120.0	133.0	147.0	1	193.0	7.8	1
SMCJ130A	SMCJ130CA	GHK	BHK	130.0	144.0	159.0	1	209.0	7.2	1
SMCJ150A	SMCJ150CA	GHM	BHM	150.0	167.0	185.0	1	243.0	6.2	1
SMCJ160A	SMCJ160CA	GHP	BHP	160.0	178.0	197.0	1	259.0	5.8	1
SMCJ170A	SMCJ170CA	GHR	BHR	170.0	189.0	209.0	1	275.0	5.5	1


Notes: For bidirectional type having V<sub>RWM</sub> of 10 volts and less, the I<sub>R</sub> limit is double.

## Description of Part Number

SMCJ XXX C A

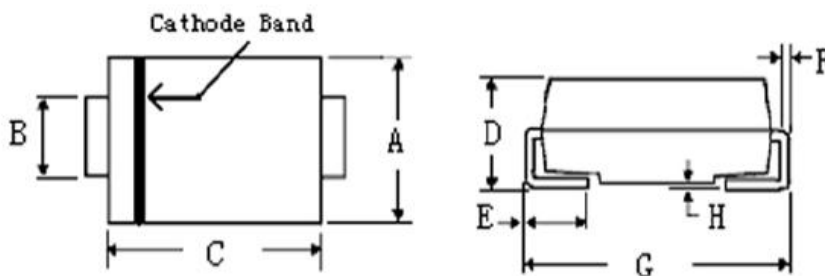


## Packing Options

Package Type	Description	Packing Quantity	Industry Standard
 DO-214AB	Embossed Carrier Reel Pack	500 PCS / 3000PCS	EIA-481-1

## Dimensions - DO-214AB

SMC/DO-214AB



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.220	0.236	5.6	6.0
B	0.112	0.124	2.85	3.15
C	0.258	0.27	6.55	6.85
D	0.083	0.098	2.1	2.5
E	0.031	0.055	0.8	1.4
F	0.006	0.013	0.18	0.32
G	0.309	0.321	7.85	8.15
H		0.008		0.203

## Ratings and Characteristics Curve

Figure 1. Peak Pulse Power Rating Curve

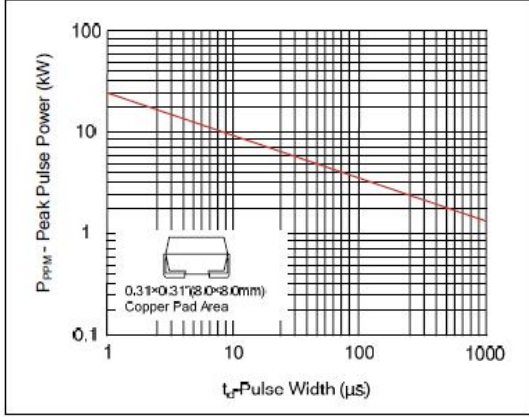


Figure 2. Pulse Derating Curve

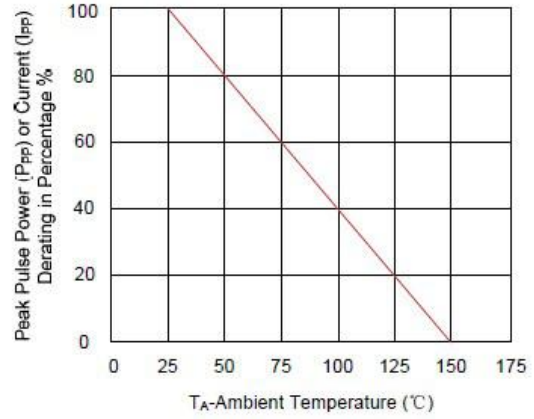


Figure 3. Pulse Waveform

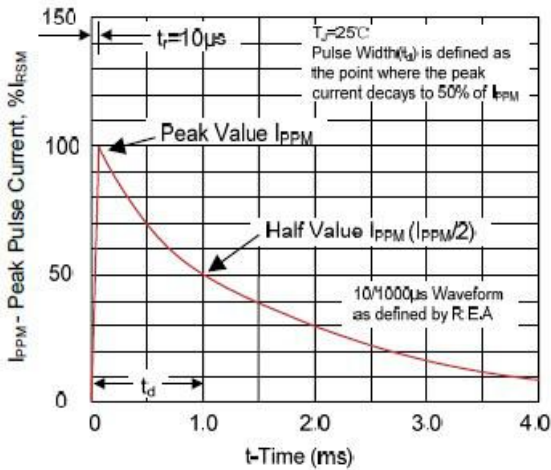


Figure 4. Typical Junction Capacitance

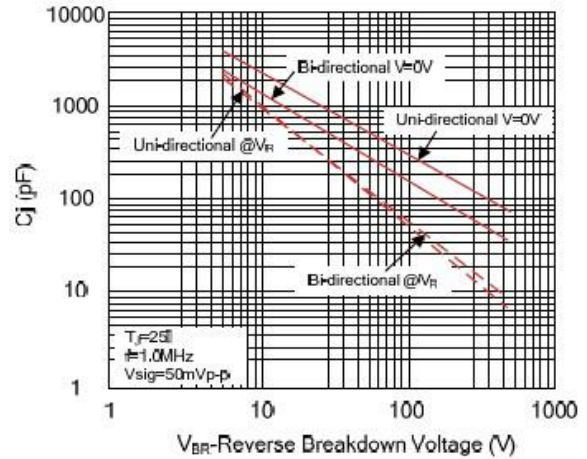


Figure 5. Steady State Power Dissipation Derating Curve

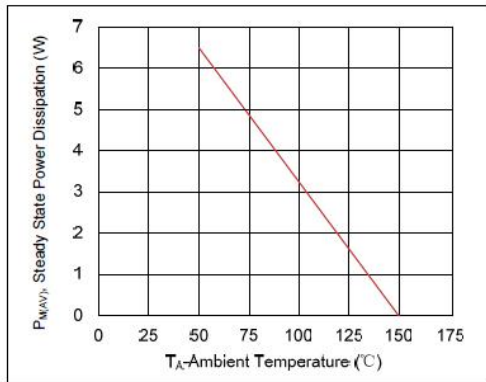
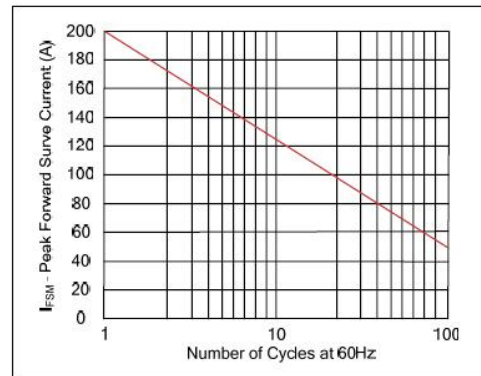


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



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