

# SMBJ / 1.5SMCJ Series

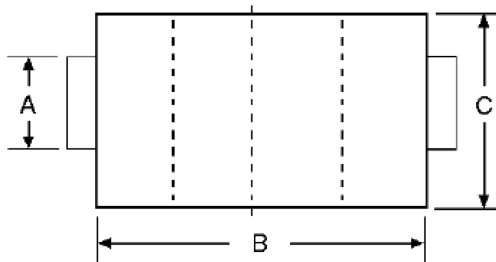
## Surface Mount Voltage Suppressors



**Transient Voltage Suppressor**

### Features:

- For surface mounted applications in order to optimise board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Low inductance
- Repetition Rate (duty cycle) : 0.05% (1.5SMCJ)  
0.01% (SMBJ)
- Fast Response Time : Typically less than 1 ps from 0 volts to BV min.
- Typical  $I_D$  less than 1µA above 10V
- High Temperature Soldering : 250°C / 10 seconds (1.5SMCJ)  
260°C / 10 seconds (SMBJ)



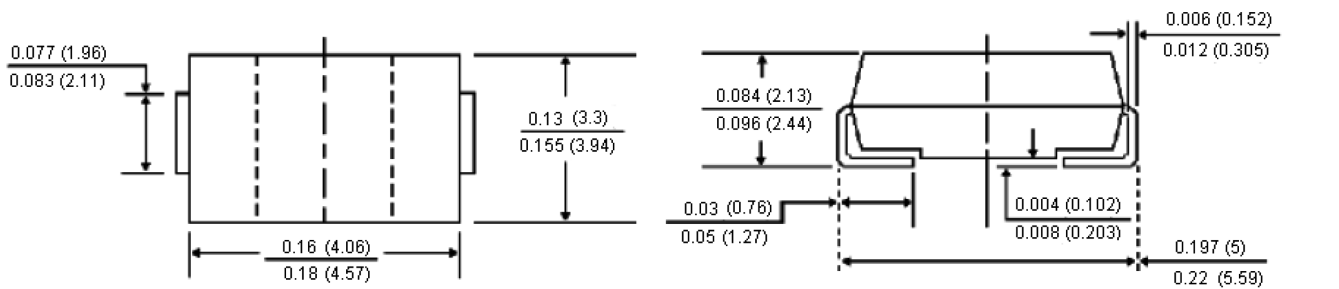
### Dimension Table:

Rating (W)	Type	Dimensions		
		A (mm)	B (mm)	C (mm)
600	SMBJ	2.11	4.57	3.94
1,500	1.5SMCJ	3.15	7.11	6.22

### Mechanical Data

- Case : JEDEC DO-214AB moulded plastic over passivated junction (SMBJ)  
JEDEC DO-214AA moulded plastic over passivated junction (1.5SMCJ)
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Standard Packaging : 12 mm tape per (EIA 481) (SMBJ)  
16 mm tape per (EIA 481) (1.5SMCJ)
- Weight : 0.003 ounce, 0.093 g (SMBJ)  
0.007 ounce, 0.21 g (1.5SMCJ)

### SMB/DO-214AA



Dimensions : Inches (Millimetres)

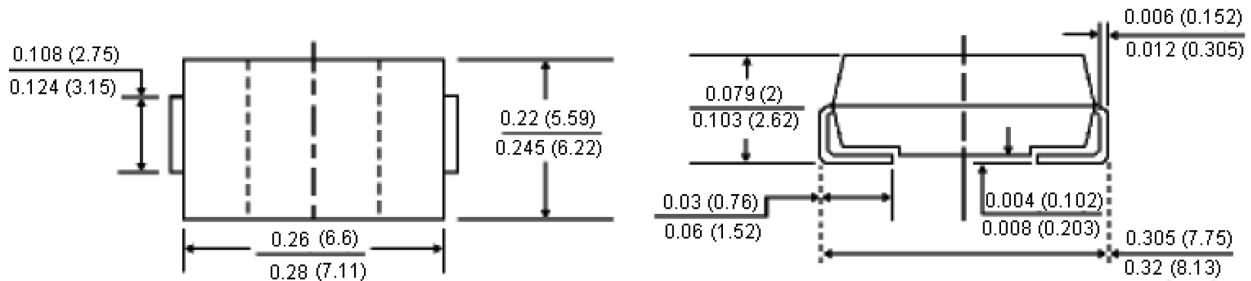


# SMBJ / 1.5SMCJ Series

## Surface Mount Voltage Suppressors



### 1.5SMC/DO-214AB



Dimensions : Inches (Millimetres)

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

Rating	Symbol	Value	Units
Peak pulse power dissipation on 10 / 1,000µs waveform (Note 1 and 2 - Fig 1)	PPPM	Minimum 600	Watts
Peak ulse current on 10 / 1,000µs waveform (Note 1 - Fig 3)	I <sub>PPM</sub>	-	Amperes
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method - note 2 and 3)	I <sub>FSM</sub>	100	Amperes
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

#### Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2
2. Mounted on 8mm<sup>2</sup> copper pads to each terminal (1.5SMCJ)  
Mounted on 5mm<sup>2</sup> (0.013mm thick) land areas (SMBJ)
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum

### Maximum Ratings and Characteristic Curves

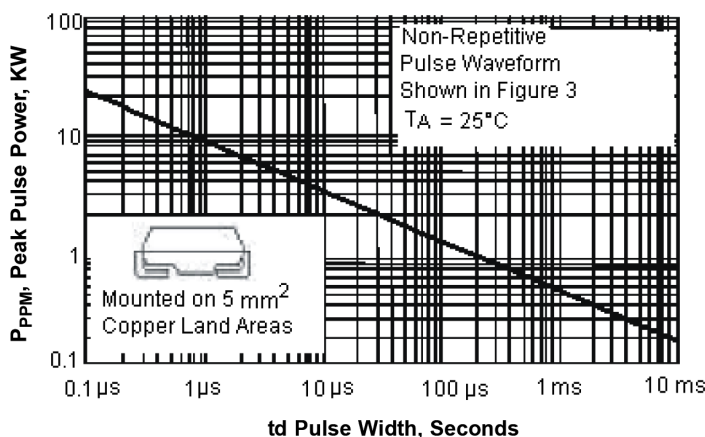


Fig. 1-Peak Pulse Power Rating Curve

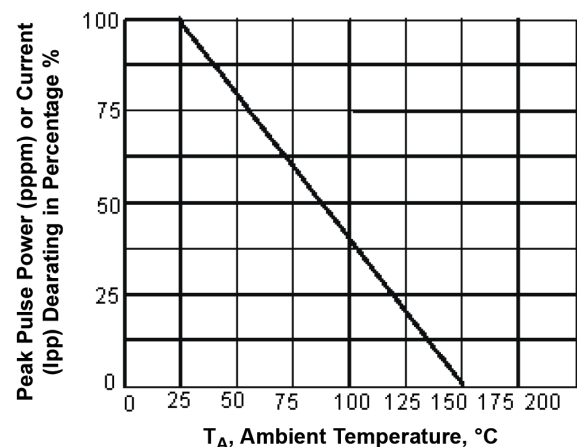


Fig. 2 Pulse Derating Curve

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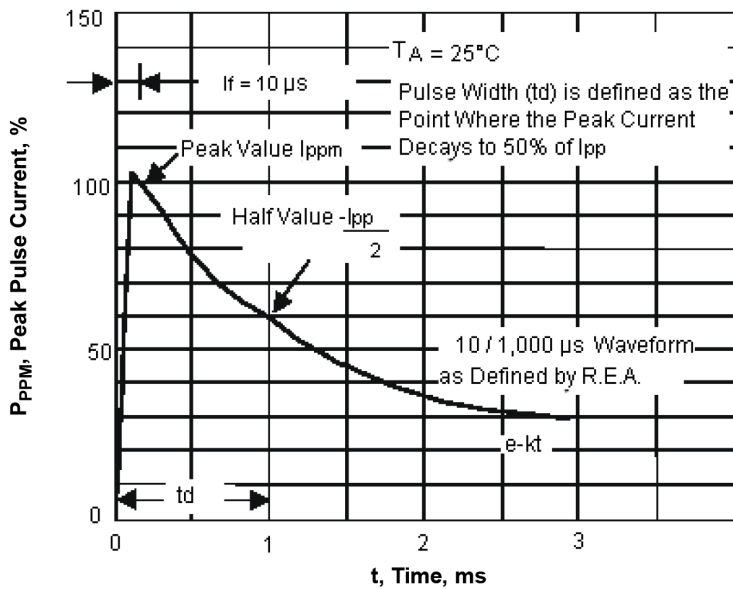


Fig. 3-Pulse Waveform

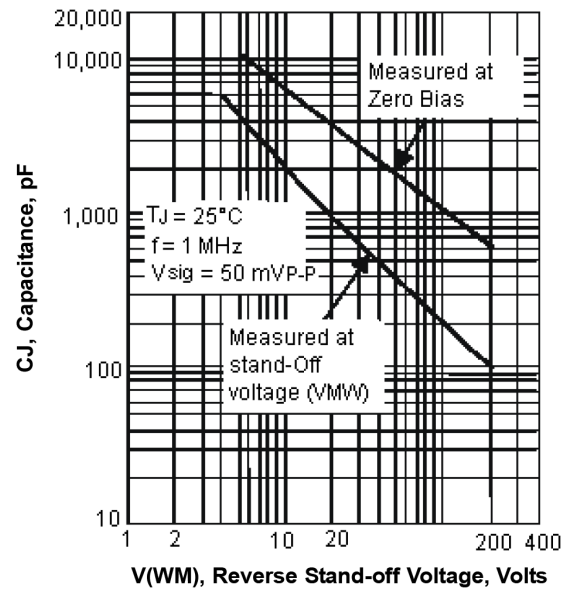


Fig. 4-Typical Junction Capacitance

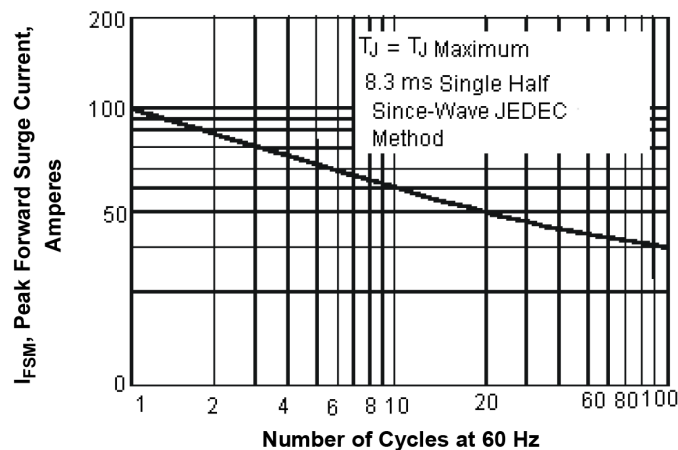


Fig. 5-Maximum Non-Repetitive Peak Forward Surge Current



# SMBJ / 1.5SMCJ Series

## Surface Mount Voltage Suppressors



### Uni-Directional 600 Watt Surface Mount TVS

Device Marking Code	Stand-off Voltage $V_{rm}$ (V)	Breakdown Voltage $V_{br}$ (V) Min. at IT	Breakdown Voltage $V_{br}$ (V) Max. at IT	Test Current $I_{test}$ (mA)	Max. Clamping Voltage $V_{clamp}$ (V)	Peak Pulse Current $I_{pp}$ (A)	Part Number	
KE	5	6.4	7.25	10	9.2	65.2	SMBJ5.0A	
KP	7.5	8.33	9.58		12.9	46.5	SMBJ7.5A	
LE	12	13.3	15.3		19.9	30.2	SMBJ12A	
LM	15	16.7	19.2		24.4	24	SMBJ15A	
LZ	24	26.7	30.7		38.9	15.4	SMBJ24A	
MK	30	33.3	38.3		1	48.4	12.4	SMBJ30A

### Uni-Directional 1,500 Watt Surface Mount TVS

Device Marking Code	Stand-off Voltage $V_{rm}$ (V)	Breakdown Voltage $V_{br}$ (V) Min. at IT	Breakdown Voltage $V_{br}$ (V) Max. at IT	Test Current $I_{test}$ (mA)	Max. Clamping Voltage $V_{clamp}$ (V)	Peak Pulse Current $I_{pp}$ (A)	Part Number	
GDE	5	6.4	7.25	10	9.2	163	1.5SMCJ5.0A	
GDG	6	6.67	7.67		10.3	145.6	1.5SMCJ6.0A	
GDV	9	10	11.5	1	15.4	97.4	1.5SMCJ9.0A	
GEE	12	13.3	15.3		19.9	75.3	1.5SMCJ12A	
GEM	15	16.7	19.2		24.4	61.5	1.5SMCJ15A	
GEX	22	24.4	28		35.5	42.2	1.5SMCJ22A	
GFM	33	36.7	42.2		53.3	28.1	1.5SMCJ33A	
GFX	48	53.3	61.3		1	77.4	19.4	1.5SMCJ48A

### Uni-Directional 600 Watt Surface Mount TVS

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AE	5	6.4	7.25	10	9.2	65.2	SMBJ5.0CA	
AP	7.5	8.33	9.58	1	12.9	46.5	SMBJ7.5CA	
BE	12	13.3	15.3		19.9	30.2	SMBJ12CA	
BM	15	16.7	19.2		24.4	24	SMBJ15CA	
BZ	24	26.7	30.7		38.9	15.4	SMBJ24CA	
CK	30	33.3	38.3		1	48.4	12.4	SMBJ30CA

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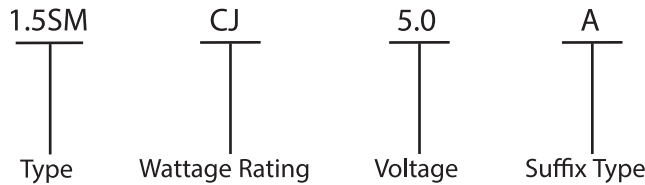
## Surface Mount Voltage Suppressors



### Uni-Directional 1,500 Watt Surface Mount TVS

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BDE	5	6.4	7.25	10	9.2	163	1.5SMCJ5.0CA
BDG	6	6.67	7.67		10.3	145.6	1.5SMCJ6.0CA
BDV	9	10	11.5		15.4	97.4	1.5SMCJ9.0CA
BEE	12	13.3	15.3	1	19.9	75.3	1.5SMCJ12CA
BEM	15	16.7	19.2		24.4	61.5	1.5SMCJ15CA
BEX	22	24.4	28		35.5	42.2	1.5SMCJ22CA
BFM	33	36.7	42.2		53.3	28.1	1.5SMCJ33CA
BFX	48	53.3	61.3		77.4	19.4	1.5SMCJ48CA

### Part Number Explanation:



- Wattage Rating : BJ = 600 W and CJ = 1,500 W
- Voltage : 5, 6, 7.5, 9, 12, 15, 22, 24, 30, 33 and 48 V
- Suffix Type : A = Uni-directional and CA = Bi-directional

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