

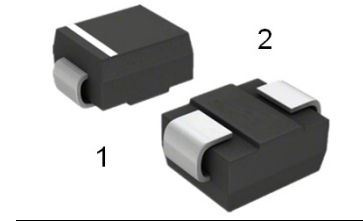
## 1500W Surface Mount Transient Voltage Suppressor

### Description

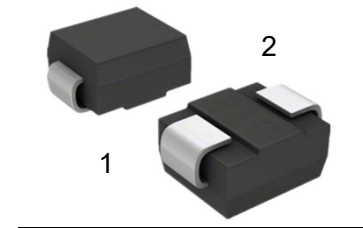
The 1.5SMBJ Series are designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Feature

- For surface mounted applications
- Excellent clamping capability
- 1500W peak pulse power capability with a 10/1000 $\mu$ s Waveform.
- $V_{RWM}$  5.0 - 75 V
- Low profile package and low inductance.
- Typical  $I_R$  less than 1 $\mu$ A above 10 V
- Fast response time: typically less than 1.0ps from 0V to  $V_{BR}$  min.



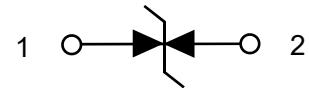
**SMB(Uni)**



**SMB(Bi)**

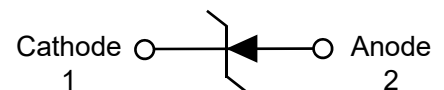
### Mechanical Characteristics

- Package: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 .RoHS compliant
- Moisture Sensitivity: Meet MSL 1
- Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Approx. Weight: 0.09g



Bi-directional

**Circuit Diagram**



Uni-directional

**Circuit Diagram**

### Applications

- Power lines
- I/O Interface.
- Automotive and Telecommunication Industrial Electronics

### Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 $\mu$ s Waveform	$P_{PP}$	1500	W
Steady State Power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	5.0	W
Operating Junction Temperature Range	$T_J$	-55~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~+150	$^\circ\text{C}$

## Electrical characteristics per line@25°C(unless otherwise specified)

Part Number		Mark		$V_R$	$I_R@V_R$	$V_{BR}@I_T$		$I_T$	$V_C@I_{PP}$	$I_{PP}^{1)}$
Uni	Bi	Uni	Bi	V	$\mu A$	min(V)	max(V)	mA	V	A
1.5SMBJ5.0A	1.5SMBJ5.0CA	1.5SMBJ5.0A	1.5SMBJ5.0CA	5	800	6.4	7	10	9.2	163.05
1.5SMBJ6.0A	1.5SMBJ6.0CA	1.5SMBJ6.0A	1.5SMBJ6.0CA	6	800	6.67	7.37	10	10.3	145.64
1.5SMBJ 6.5A	1.5SMBJ6.5CA	1.5SMBJ 6.5A	1.5SMBJ6.5CA	6.5	500	7.22	7.98	10	11.2	133.93
1.5SMBJ7.0 A	1.5SMBJ7.0CA	1.5SMBJ7.0 A	1.5SMBJ7.0CA	7	200	7.78	8.6	10	12	125
1.5SMBJ 7.5A	1.5SMBJ7.5CA	1.5SMBJ 7.5A	1.5SMBJ7.5CA	7.5	100	8.33	9.21	1	12.9	116.28
1.5SMBJ 8.0A	1.5SMBJ8.0CA	1.5SMBJ 8.0A	1.5SMBJ8.0CA	8	50	8.89	9.83	1	13.6	110.3
1.5SMBJ8.5 A	1.5SMBJ8.5CA	1.5SMBJ8.5 A	1.5SMBJ8.5CA	8.5	20	9.44	10.4	1	14.4	104.17
1.5SMBJ9.0 A	1.5SMBJ9.0CA	1.5SMBJ9.0 A	1.5SMBJ9.0CA	9	10	10	11.1	1	15.4	97.41
1.5SMBJ10A	1.5SMBJ10CA	1.5SMBJ10A	1.5SMBJ10CA	10	5	11.1	12.3	1	17	88.24
1.5SMBJ11A	1.5SMBJ11CA	1.5SMBJ11A	1.5SMBJ11CA	11	1	12.2	13.5	1	18.2	82.42
1.5SMBJ12A	1.5SMBJ12CA	1.5SMBJ12A	1.5SMBJ12CA	12	1	13.3	14.7	1	19.9	75.38
1.5SMBJ13A	1.5SMBJ13CA	1.5SMBJ13A	1.5SMBJ13CA	13	1	14.4	15.9	1	21.5	69.77
1.5SMBJ14A	1.5SMBJ14CA	1.5SMBJ14A	1.5SMBJ14CA	14	1	15.6	17.2	1	23.2	64.66
1.5SMBJ15A	1.5SMBJ15CA	1.5SMBJ15A	1.5SMBJ15CA	15	1	16.7	18.5	1	24.4	61.48
1.5SMBJ16A	1.5SMBJ16CA	1.5SMBJ16A	1.5SMBJ16CA	16	1	17.8	19.7	1	26	57.7
1.5SMBJ17A	1.5SMBJ17CA	1.5SMBJ17A	1.5SMBJ17CA	17	1	18.9	20.9	1	27.6	54.35
1.5SMBJ18A	1.5SMBJ18CA	1.5SMBJ18A	1.5SMBJ18CA	18	1	20	22.1	1	29.2	51.37
1.5SMBJ20A	1.5SMBJ20CA	1.5SMBJ20A	1.5SMBJ20CA	20	1	22.2	24.5	1	32.4	46.3
1.5SMBJ22A	1.5SMBJ22CA	1.5SMBJ22A	1.5SMBJ22CA	22	1	24.4	26.9	1	35.5	42.26
1.5SMBJ24A	1.5SMBJ24CA	1.5SMBJ24A	1.5SMBJ24CA	24	1	26.7	29.5	1	38.9	38.57
1.5SMBJ26A	1.5SMBJ26CA	1.5SMBJ26A	1.5SMBJ26CA	26	1	28.9	31.9	1	42.1	35.63
1.5SMBJ28A	1.5SMBJ28CA	1.5SMBJ28A	1.5SMBJ28CA	28	1	31.1	34.4	1	45.4	33.04
1.5SMBJ30A	1.5SMBJ30CA	1.5SMBJ30A	1.5SMBJ30CA	30	1	33.3	36.8	1	48.4	31
1.5SMBJ33A	1.5SMBJ33CA	1.5SMBJ33A	1.5SMBJ33CA	33	1	36.7	40.6	1	53.3	28.15
1.5SMBJ36A	1.5SMBJ36CA	1.5SMBJ36A	1.5SMBJ36CA	36	1	40	44.2	1	58.1	25.82
1.5SMBJ40A	1.5SMBJ40CA	1.5SMBJ40A	1.5SMBJ40CA	40	1	44.4	49.1	1	64.5	23.26
1.5SMBJ43A	1.5SMBJ43CA	1.5SMBJ43A	1.5SMBJ43CA	43	1	47.8	52.8	1	69.4	21.62
1.5SMBJ45A	1.5SMBJ45CA	1.5SMBJ45A	1.5SMBJ45CA	45	1	50	55.3	1	72.7	20.64
1.5SMBJ48A	1.5SMBJ48CA	1.5SMBJ48A	1.5SMBJ48CA	48	1	53.3	58.9	1	77.4	19.38
1.5SMBJ51A	1.5SMBJ51CA	1.5SMBJ51A	1.5SMBJ51CA	51	1	56.7	62.7	1	82.4	18.21
1.5SMBJ54A	1.5SMBJ54CA	1.5SMBJ54A	1.5SMBJ54CA	54	1	60	66.3	1	87.1	17.23
1.5SMBJ58A	1.5SMBJ58CA	1.5SMBJ58A	1.5SMBJ58CA	58	1	64.4	71.2	1	93.6	16.03
1.5SMBJ60A	1.5SMBJ60CA	1.5SMBJ60A	1.5SMBJ60CA	60	1	66.7	73.7	1	96.8	15.5
1.5SMBJ64A	1.5SMBJ64CA	1.5SMBJ64A	1.5SMBJ64CA	64	1	71.1	78.6	1	103	14.57
1.5SMBJ70A	1.5SMBJ70CA	1.5SMBJ70A	1.5SMBJ70CA	70	1	77.8	86	1	113	13.28
1.5SMBJ75A	1.5SMBJ75CA	1.5SMBJ75A	1.5SMBJ75CA	75	1	83.3	92.1	1	121	12.4

Note:

1) Surge waveform: 10/1000 $\mu$ s

## Electronics Parameter

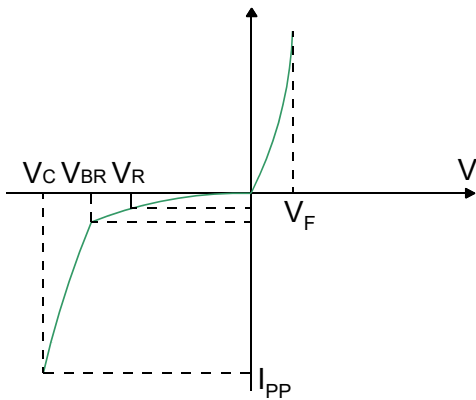


FIG.1: V- I curve characteristics (Uni-directional)

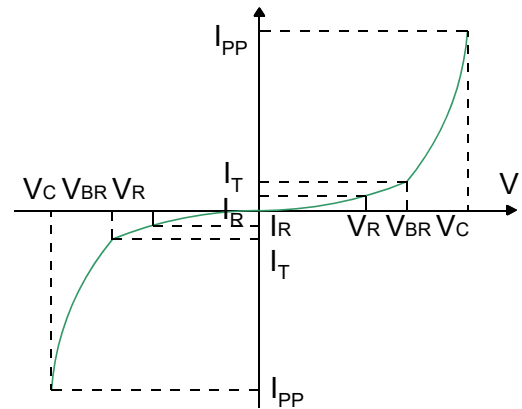


FIG.2: V- I curve characteristics (Bi-directional)

Symbol	Parameter	Symbol	Parameter
$I_F$	Mean Forward Current	$V_{BR}$	Breakdown Voltage @ $I_T$
$V_F$	Maximum Forward Voltage @ $I_F$	$I_T$	Test Current
$V_R$	Peak Reverse Working Voltage	$I_{PP}$	Maximum Reverse Peak Pulse Current
$I_R$	Reverse Leakage Current @ $V_R$	$V_C$	Clamping Voltage @ $I_{PP}$

## Typical Characteristics

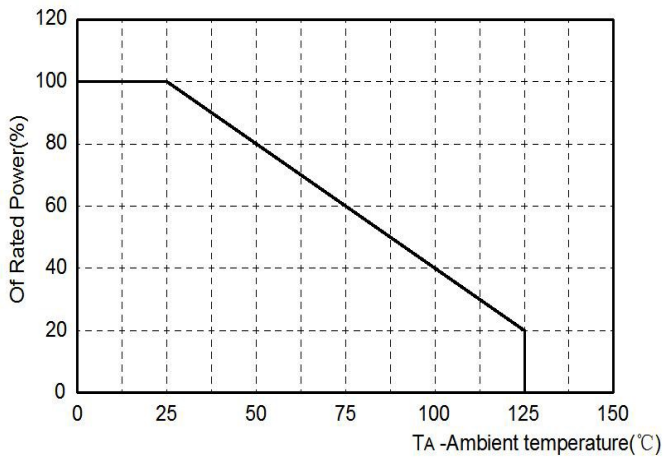


FIG.3: Pulse Derating Curve

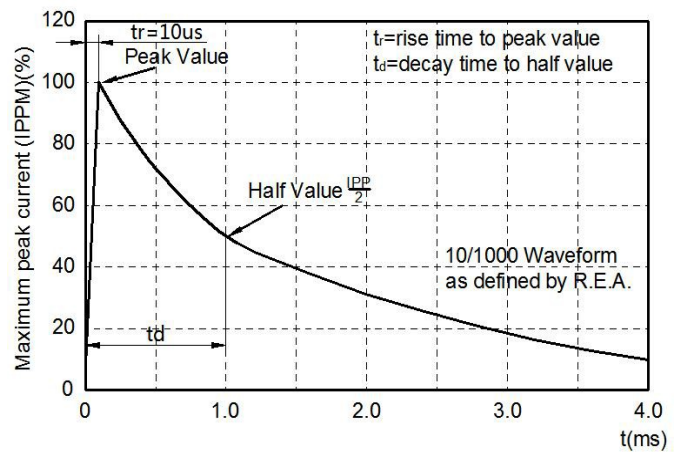
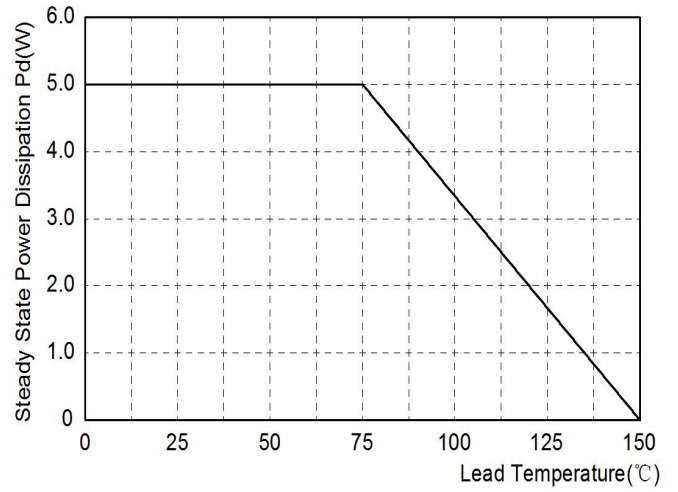
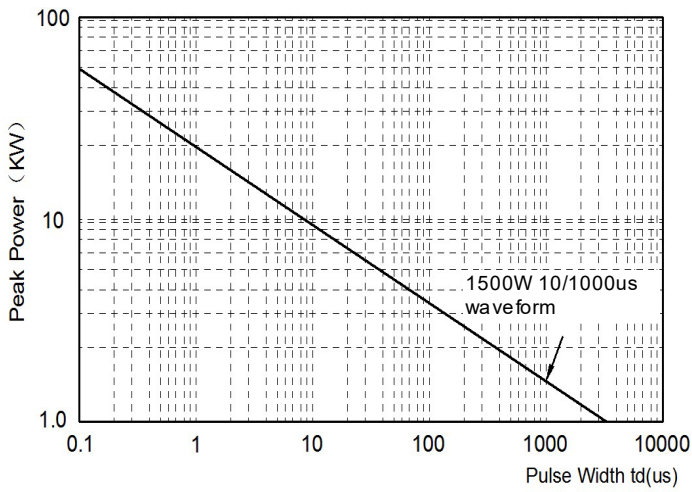
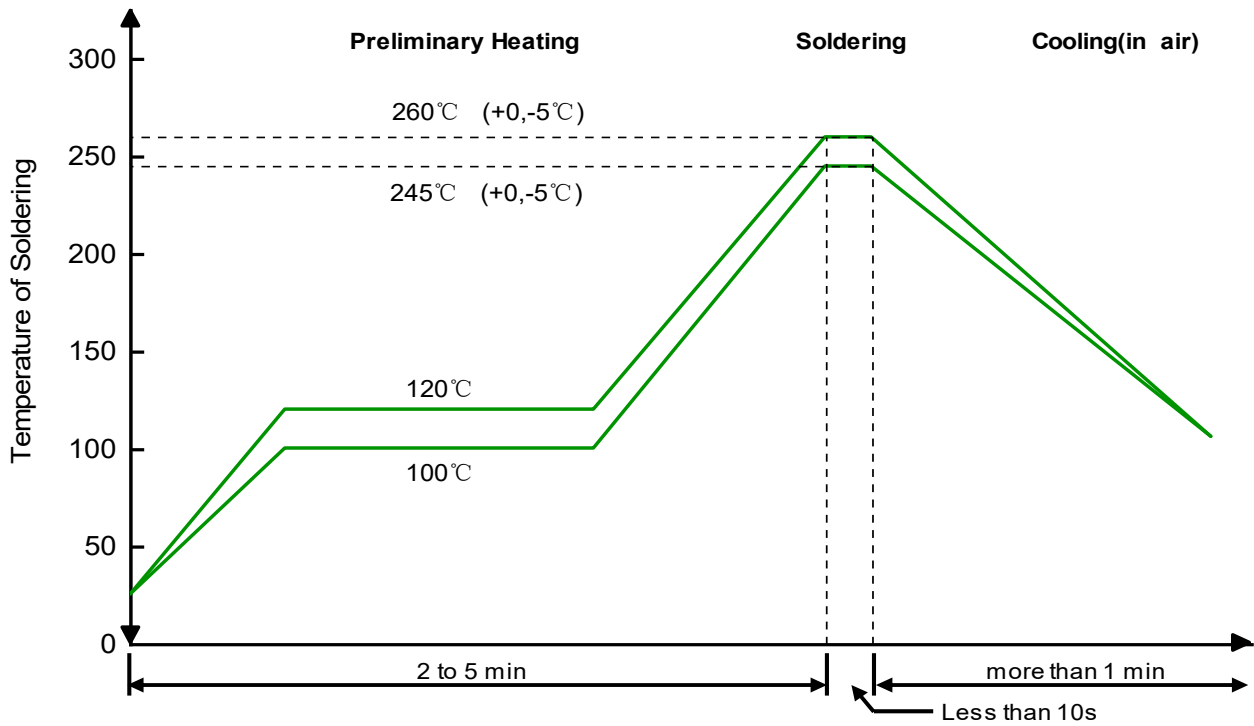


FIG.4: Pulse Waveform



## Solder Reflow Recommendation

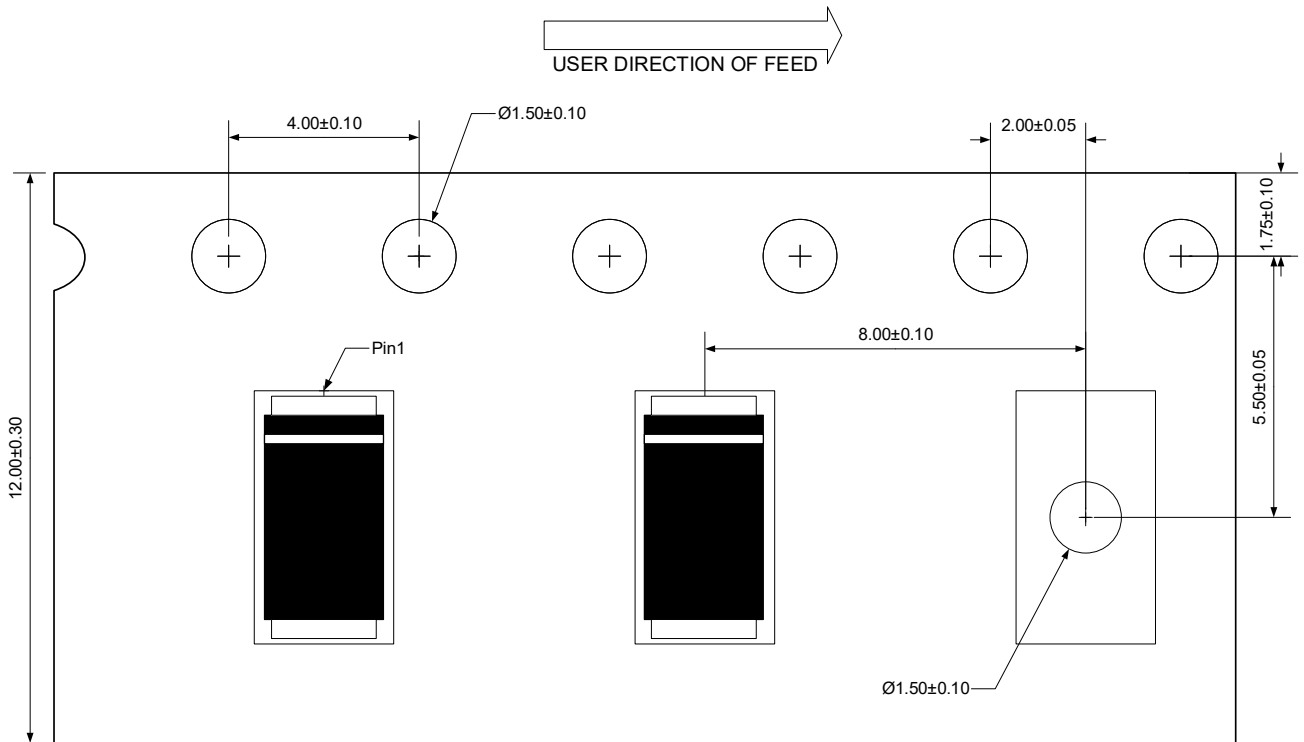


Remark: Pb free for 260°C; Pb for 245°C.

# Transient Voltage Suppressor

# 1.5SMBJ Series

## Load with information

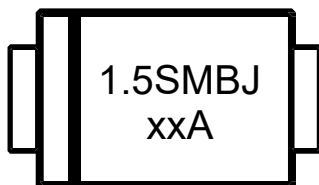


Unit:mm

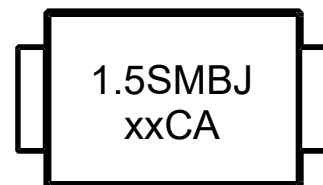
## Ordering information

Package	Reel	Shipping
SMB	13"	3000 / Tape & Reel

## Marking information



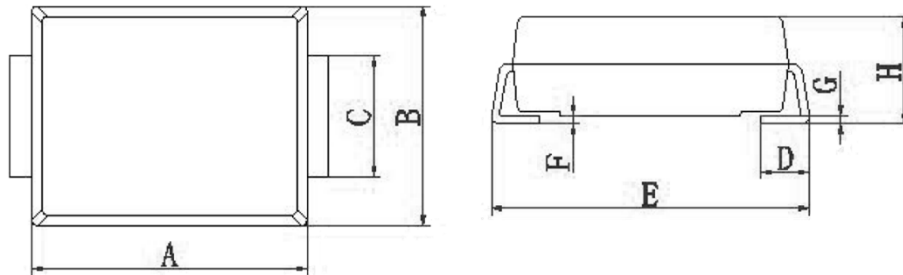
Uni-directional



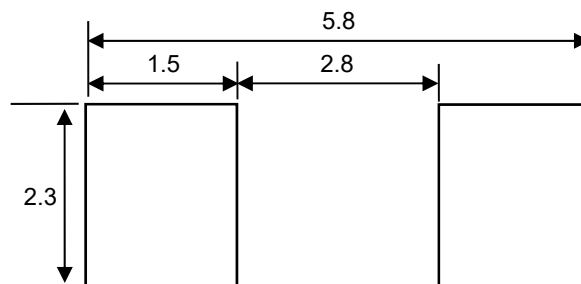
Bi-directional

Note: Detailed Marking See table above

Product Dimension (SMB)




Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	4.22	4.70	0.166	0.185
B	3.40	3.94	0.134	0.155
C	1.90	2.10	0.075	0.083
D	0.90	1.42	0.035	0.056
E	5.21	5.59	0.205	0.220
F	0.00	0.23	0.000	0.009
G	0.15	0.25	0.006	0.010
H	1.95	2.60	0.077	0.102



Unit: mm

Suggested PCB Layout


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