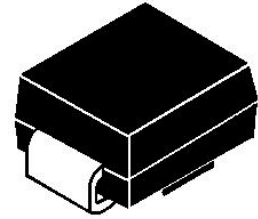




# 1000W Surface Mount Transient Voltage Suppressors

## Features

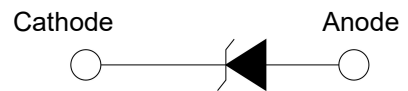
- Peak power dissipation 1000W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Fast response time: typically less than 1ps from 0 Volts to BV min
- Typical IR less than 1uA when VBR min above 12V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and RoHS compliant
- Lead-free finish



**SMB**



Bi-directional



Uni-directional

## Mechanical Characteristics

CASE: SMB (DO-214AA) Molded Plastic over glass passivated junction.

Mounting Position: Any

Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.

Terminal: Solder plated

## Maximum Ratings And Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P <sub>PPM</sub>	Min 1000	W
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =50°C	P <sub>D</sub>	5	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I <sub>PPM</sub>	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3)	I <sub>FSM</sub>	120	A
Operating Junction Temperature Range	T <sub>J</sub>	-55 to 150	°C
Storage Temperature Range	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 5.0x5.0mm<sup>2</sup> (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

# 1KSMBJ Series

## Electrical Specification @ Tamb 25°C

1KSMBJ5.0A	1KSMBJ5.0CA	10KE	10AE	5.0	6.40	7.00	10	9.2	108.7	800	
1KSMBJ6.0A	1KSMBJ6.0CA	10KG	10AG	6.0	6.67	7.37	10	10.3	97.1	800	
1KSMBJ6.5A	1KSMBJ6.5CA	10KK	10AK	6.5	7.22	7.98	10	11.2	89.3	500	
1KSMBJ7.0A	1KSMBJ7.0CA	10KM	10AM	7.0	7.78	8.60	10	12.0	83.3	200	
1KSMBJ7.5A	1KSMBJ7.5CA	10KP	10AP	7.5	8.33	9.21	1	12.9	77.5	100	
1KSMBJ8.0A	1KSMBJ8.0CA	10KR	10AR	8.0	8.89	9.83	1	13.6	73.5	50	
1KSMBJ8.5A	1KSMBJ8.5CA	10KT	10AA	8.5	9.44	10.40	1	14.4	69.4	20	
1KSMBJ9.0A	1KSMBJ9.0CA	10KV	10AV	9.0	10.00	11.10	1	15.4	64.9	10	
1KSMBJ10A	1KSMBJ10CA	10KX	10AX	10.0	11.10	12.30	1	17.0	58.8	5	
1KSMBJ11A	1KSMBJ11CA	10KZ	10AZ	11.0	12.20	13.50	1	18.2	54.9	1	
1KSMBJ12A	1KSMBJ12CA	10LE	10BE	12.0	13.30	14.70	1	19.9	50.3	1	
1KSMBJ13A	1KSMBJ13CA	10LG	10BG	13.0	14.40	15.90	1	21.5	46.5	1	
1KSMBJ14A	1KSMBJ14CA	10LK	10BK	14.0	15.60	17.20	1	23.2	43.1	1	
1KSMBJ15A	1KSMBJ15CA	10LM	10BM	15.0	16.70	18.50	1	24.4	41.0	1	
1KSMBJ16A	1KSMBJ16CA	10LP	10BP	16.0	17.80	19.70	1	26.0	38.5	1	
1KSMBJ17A	1KSMBJ17CA	10LR	10BR	17.0	18.90	20.90	1	27.6	36.2	1	
1KSMBJ18A	1KSMBJ18CA	10LT	10BT	18.0	20.00	22.10	1	29.2	34.2	1	
1KSMBJ20A	1KSMBJ20CA	10LV	10BV	20.0	22.20	24.50	1	32.4	30.9	1	
1KSMBJ22A	1KSMBJ22CA	10LX	10BX	22.0	24.40	26.90	1	35.5	28.2	1	
1KSMBJ24A	1KSMBJ24CA	10LZ	10BZ	24.0	26.70	29.50	1	38.9	25.7	1	
1KSMBJ26A	1KSMBJ26CA	10ME	10CE	26.0	28.90	31.90	1	42.1	23.8	1	
1KSMBJ28A	1KSMBJ28CA	10MG	10CG	28.0	31.10	34.40	1	45.4	22.0	1	
1KSMBJ30A	1KSMBJ30CA	10MK	10CK	30.0	33.30	36.80	1	48.4	20.7	1	
1KSMBJ33A	1KSMBJ33CA	10MM	10CM	33.0	36.70	40.60	1	53.3	18.8	1	
1KSMBJ36A	1KSMBJ36CA	10MP	10CP	36.0	40.00	44.20	1	58.1	17.2	1	
1KSMBJ40A	1KSMBJ40CA	10MR	10CR	40.0	44.40	49.10	1	64.5	15.5	1	
1KSMBJ43A	1KSMBJ43CA	10MT	10CT	43.0	47.80	52.80	1	69.4	14.4	1	
1KSMBJ45A	1KSMBJ45CA	10MV	10CV	45.0	50.00	55.30	1	72.7	13.8	1	
1KSMBJ48A	1KSMBJ48CA	10MX	10CX	48.0	53.30	58.90	1	77.4	12.9	1	
1KSMBJ51A	1KSMBJ51CA	10MZ	10CZ	51.0	56.70	62.70	1	82.4	12.1	1	
1KSMBJ54A	1KSMBJ54CA	10NE	10DE	54.0	60.00	66.30	1	87.1	11.5	1	
1KSMBJ58A	1KSMBJ58CA	10NG	10DG	58.0	64.40	71.20	1	93.6	10.7	1	
1KSMBJ60A	1KSMBJ60CA	10NK	10DK	60.0	66.70	73.70	1	96.8	10.3	1	
1KSMBJ64A	1KSMBJ64CA	10NM	10DM	64.0	71.10	78.60	1	103.0	9.7	1	
1KSMBJ70A	1KSMBJ70CA	10NP	10DP	70.0	77.80	86.00	1	113.0	8.8	1	
1KSMBJ75A	1KSMBJ75CA	10NR	10DR	75.0	83.30	92.10	1	121.0	8.3	1	

※ For Bi-directional type having  $V_{RWM}$  of 10 Volts and less, the  $I_R$  limit is double.

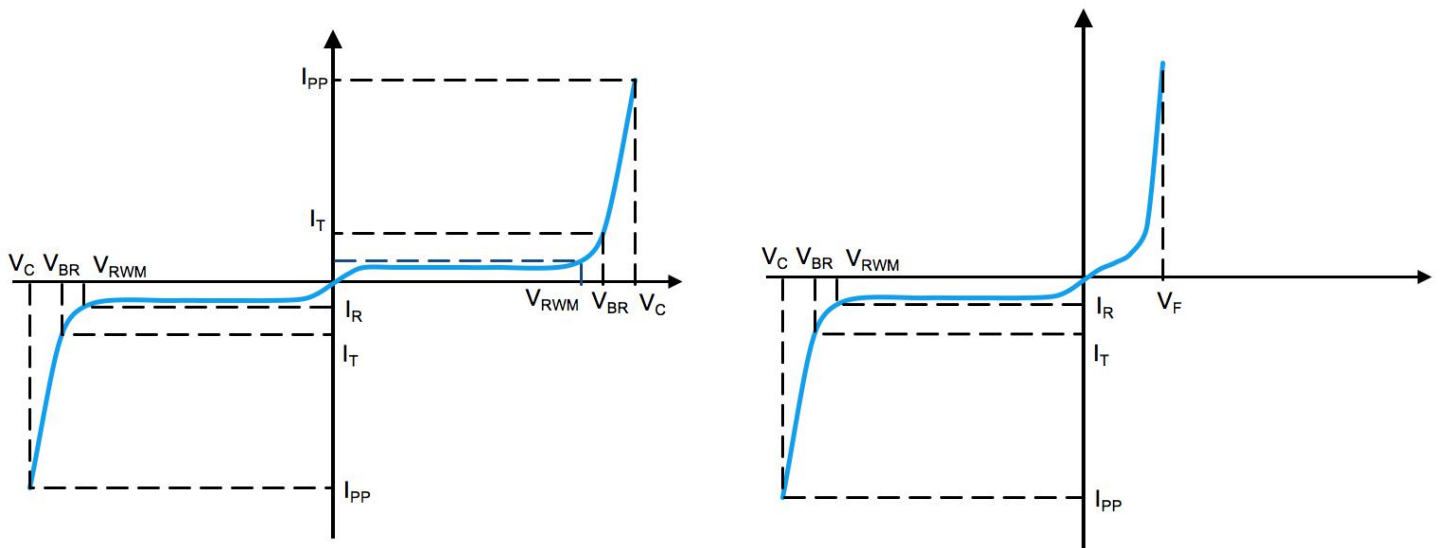
※ For parts without A, the VBR is  $\pm 10\%$  and VC is 5% higher than with A parts.

# 1KSMBJ Series

1KSMBJ78A	1KSMBJ78CA	10NT	10DT	78.0	86.70	95.80	1	126.0	7.9	1
1KSMBJ85A	1KSMBJ85CA	10NV	10DV	85.0	94.40	104.00	1	137.0	7.3	1
1KSMBJ90A	1KSMBJ90CA	10NX	10DX	90.0	100.00	111.00	1	146.0	6.8	1
1KSMBJ100A	1KSMBJ100CA	10NZ	10DZ	100.0	111.00	123.00	1	162.0	6.2	1
1KSMBJ110A	1KSMBJ110CA	10PE	10EE	110.0	122.00	135.00	1	177.0	5.6	1
1KSMBJ120A	1KSMBJ120CA	10PG	10EG	120.0	133.00	147.00	1	193.0	5.2	1
1KSMBJ130A	1KSMBJ130CA	10PK	10EK	130.0	144.00	159.00	1	209.0	4.8	1
1KSMBJ150A	1KSMBJ150CA	10PM	10EM	150.0	167.00	185.00	1	243.0	4.1	1
1KSMBJ160A	1KSMBJ160CA	10PP	10EP	160.0	178.00	197.00	1	259.0	3.9	1
1KSMBJ170A	1KSMBJ170CA	10PR	10ER	170.0	189.00	209.00	1	275.0	3.6	1

- ※ For Bi-directional type having  $V_{RWM}$  of 10 Volts and less, the  $I_R$  limit is double.
- ※ For parts without A, the  $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than with A parts.

## I-V Curve Characteristics



- Max power dissipation
- Maximum voltage that can be applied to TVS without operation
- Maximum voltage that flows though the TVS at a specified current ( $I_T$ )
- Peak voltage measured across the TVS at a specified  $I_{PPM}$  (peak impulse current)
- Current measured at  $V_R$

## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

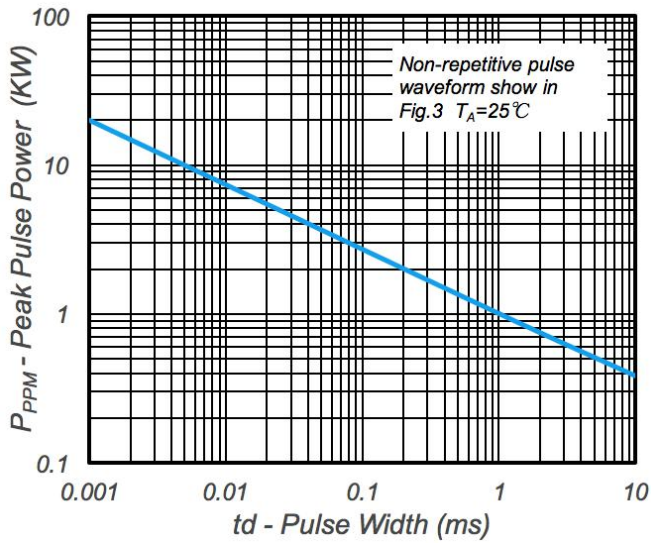


Fig.1 - Peak Pulse Power Rating

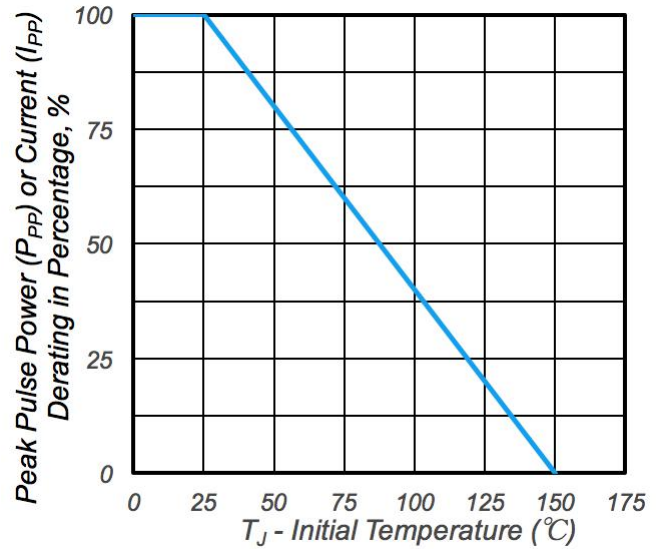
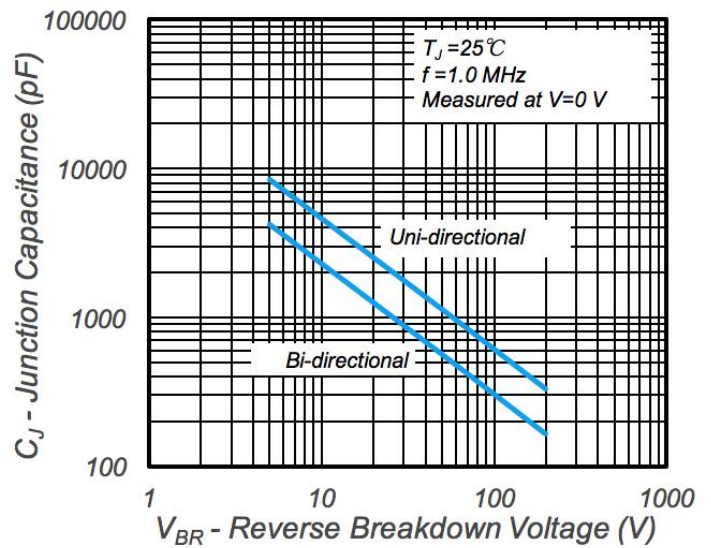
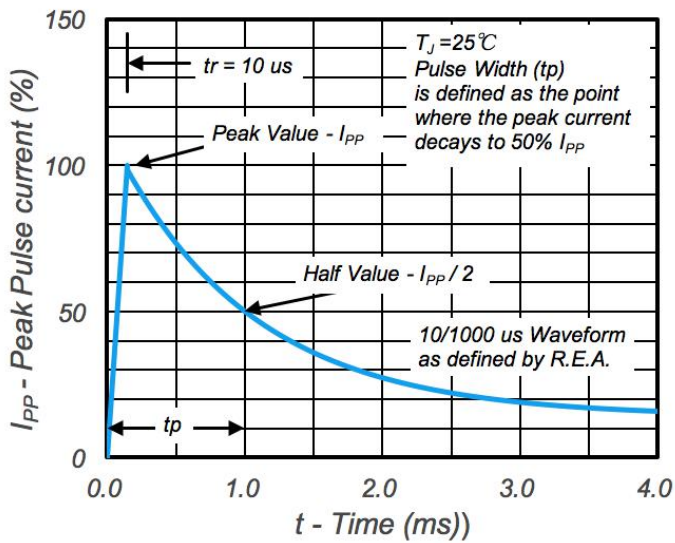


Fig.2 - Pulse Derating Curve

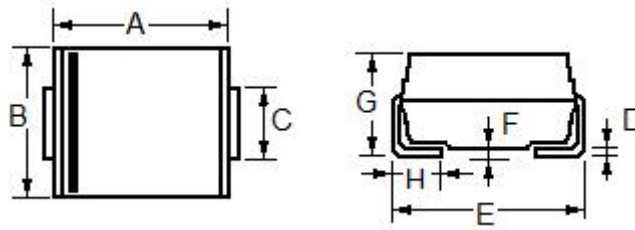


*Fig.3 – Pulse Waveform*

*Fig.4 - Typical Junction Capacitance*

## Package Outline Dimensions and Pad Layouts

### DO-214AA (SMB)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	4.06	4.57	0.160	0.180
B	3.30	3.94	0.130	0.155
C	1.78	2.20	0.070	0.086
D	0.13	0.31	0.006	0.012
E	5.08	5.59	0.200	0.220
F	----	0.20	----	0.008
G	1.95	2.62	0.077	0.103
H	0.76	1.52	0.030	0.060