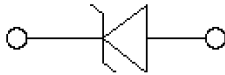
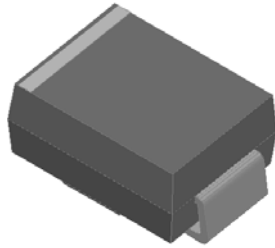
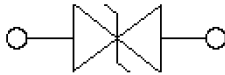
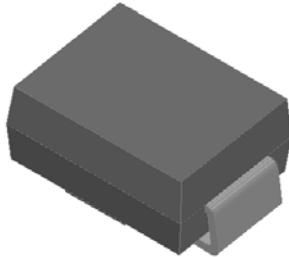


## Surface Mount Transient Voltage Suppressors

### Uni-directional



### Bi-directional



### Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 1000 W peak pulse power capability with a 10/1000  $\mu$ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

### Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

### Mechanical Data

- **Package:** DO-214AA (SMB)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

### ■Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform <sup>(1)</sup> <sup>(2)</sup> (Fig.1)	$P_{PPM}$	W	1000
Peak pulse current, with a 10/1000us waveform <sup>(1)</sup>	$I_{PPM}$	A	See Next Table
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$	$P_D$	W	5.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	A	100
Operating junction and storage temperature range	$T_J, T_{STG}$	$^\circ\text{C}$	-55 to +150

### ■Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage @ at 50A for unidirectional only	$V_F$	V	3.5



# SMB10J SERIES

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	R <sub>θJL</sub>	°C/W	junction to lead	20
	R <sub>θJA</sub>	°C/W	junction to ambient	100

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub>= 25°C per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V <sub>BR@IT</sub>			Maximum Reverse Leakage I <sub>R</sub> <sup>(5)</sup> @ V <sub>RWM</sub> (μA)	Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Surge Current I <sub>PP</sub> <sup>(4)</sup> (A)	Maximum Clamping Voltage V <sub>c</sub> @ I <sub>PP</sub> (V)
		Min(V)	Max (V)	I <sub>T</sub> <sup>(3)</sup> (mA)				
SMB10J5.0A	SMB10J5.0CA	6.4	7.07	10	1000	5	108.70	9.2
SMB10J6.0A	SMB10J6.0CA	6.67	7.37	10	1000	6	97.09	10.3
SMB10J6.5A	SMB10J6.5CA	7.22	7.98	10	500	6.5	89.29	11.2
SMB10J7.0A	SMB10J7.0CA	7.78	8.6	10	200	7	83.33	12
SMB10J7.5A	SMB10J7.5CA	8.33	9.21	1	100	7.5	77.52	12.9
SMB10J8.0A	SMB10J8.0CA	8.89	9.83	1	50	8	73.53	13.6
SMB10J8.5A	SMB10J8.5CA	9.44	10.4	1	20	8.5	69.44	14.4
SMB10J9.0A	SMB10J9.0CA	10	11.1	1	10	9	64.94	15.4
SMB10J10A	SMB10J10CA	11.1	12.3	1	5	10	58.82	17
SMB10J11A	SMB10J11CA	12.2	13.5	1	5	11	54.95	18.2
SMB10J12A	SMB10J12CA	13.3	14.7	1	5	12	50.25	19.9
SMB10J13A	SMB10J13CA	14.4	15.9	1	1	13	46.51	21.5
SMB10J14A	SMB10J14CA	15.6	17.2	1	1	14	43.10	23.2
SMB10J15A	SMB10J15CA	16.7	18.5	1	1	15	40.98	24.4
SMB10J16A	SMB10J16CA	17.8	19.7	1	1	16	38.46	26
SMB10J17A	SMB10J17CA	18.9	20.9	1	1	17	36.23	27.6
SMB10J18A	SMB10J18CA	20	22.1	1	1	18	34.25	29.2
SMB10J19A	SMB10J19CA	21.1	23.3	1	1	19	32.47	30.8
SMB10J20A	SMB10J20CA	22.2	24.5	1	1	20	30.86	32.4
SMB10J22A	SMB10J22CA	24.4	26.9	1	1	22	28.17	35.5
SMB10J24A	SMB10J24CA	26.7	29.5	1	1	24	25.71	38.9
SMB10J26A	SMB10J26CA	28.9	31.9	1	1	26	23.75	42.1
SMB10J28A	SMB10J28CA	31.1	34.4	1	1	28	22.03	45.4
SMB10J30A	SMB10J30CA	33.3	36.8	1	1	30	20.66	48.4
SMB10J33A	SMB10J33CA	36.7	40.6	1	1	33	18.76	53.3
SMB10J36A	SMB10J36CA	40	44.2	1	1	36	17.21	58.1
SMB10J40A	SMB10J40CA	44.4	49.1	1	1	40	15.50	64.5
SMB10J43A	SMB10J43CA	47.8	52.8	1	1	43	14.41	69.4



# SMB10J SERIES

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(5)}@V_{RWM}$ ( $\mu A$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}^{(4)}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
		Min(V)	Max (V)	$I_T^{(3)}$ (mA)				
SMB10J45A	SMB10J45CA	50	55.3	1	1	45	13.76	72.7
SMB10J48A	SMB10J48CA	53.3	58.9	1	1	48	12.92	77.4
SMB10J51A	SMB10J51CA	56.7	62.7	1	1	51	12.14	82.4
SMB10J54A	SMB10J54CA	60	66.3	1	1	54	11.48	87.1
SMB10J58A	SMB10J58CA	64.4	71.2	1	1	58	10.68	93.6
SMB10J45A	SMB10J45CA	50	55.3	1	1	45	13.76	72.7
SMB10J48A	SMB10J48CA	53.3	58.9	1	1	48	12.92	77.4
SMB10J51A	SMB10J51CA	56.7	62.7	1	1	51	12.14	82.4
SMB10J54A	SMB10J54CA	60	66.3	1	1	54	11.48	87.1
SMB10J58A	SMB10J58CA	64.4	71.2	1	1	58	10.68	93.6
SMB10J60A	SMB10J60CA	66.7	73.7	1	1	60	10.33	96.8
SMB10J64A	SMB10J64CA	71.1	78.6	1	1	64	9.71	103
SMB10J70A	SMB10J70CA	77.8	86	1	1	70	8.85	113
SMB10J75A	SMB10J75CA	83.3	92.1	1	1	75	8.26	121
SMB10J78A	SMB10J78CA	86.7	95.8	1	1	78	7.94	126
SMB10J80A	SMB10J80CA	88.8	97.6	1	1	80	7.72	129.6
SMB10J85A	SMB10J85CA	94.4	104	1	1	85	7.30	137

Notes:

- (3) Pulse test:  $t_p \leq 50ms$ .
- (4) Surge current waveform per Fig. 3 and derated per Fig.2.
- (5) For bi-directional types having  $V_{RWM}$  of 10 V and less, the  $I_R$  limit is doubled.

## ■ Characteristics (Typical)

FIG1: Peak Pulse Power Rating Curve

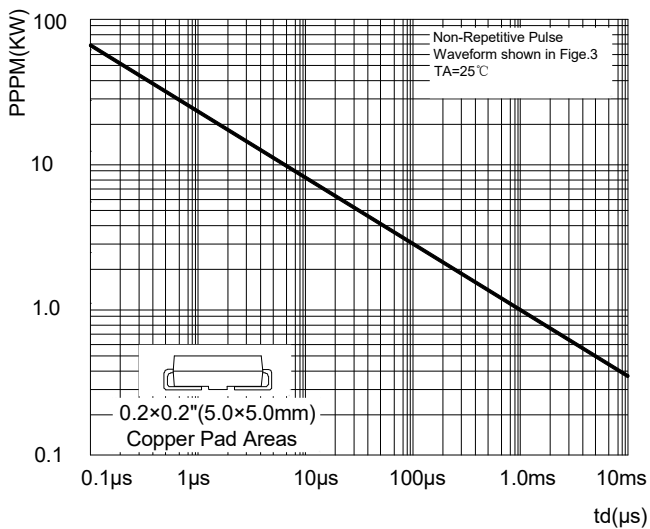
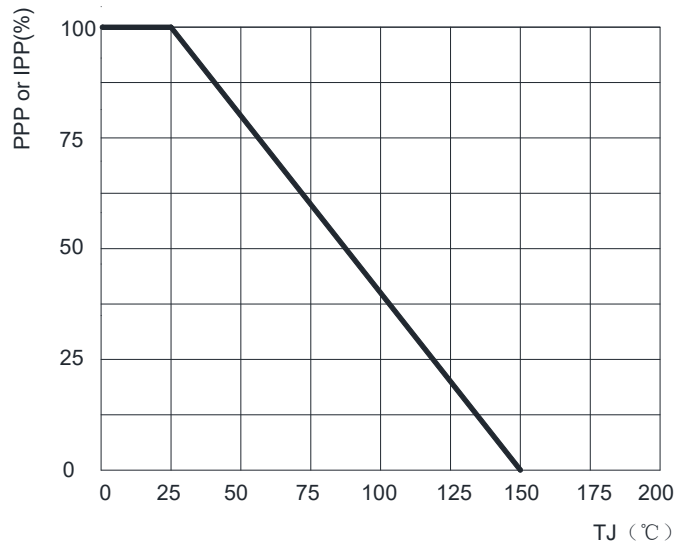


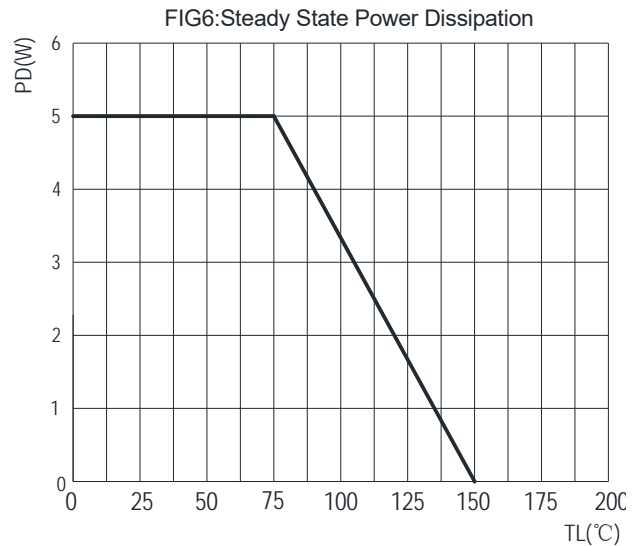
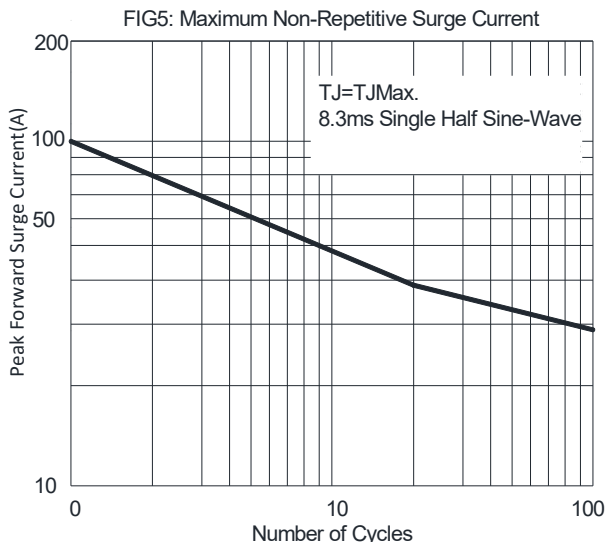
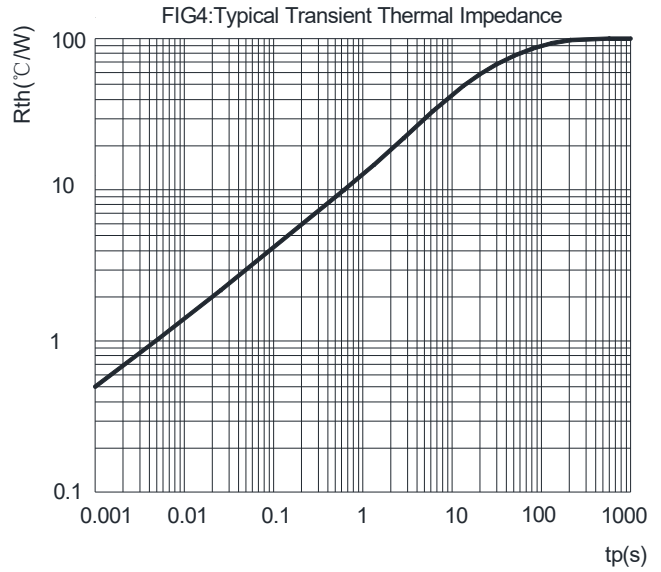
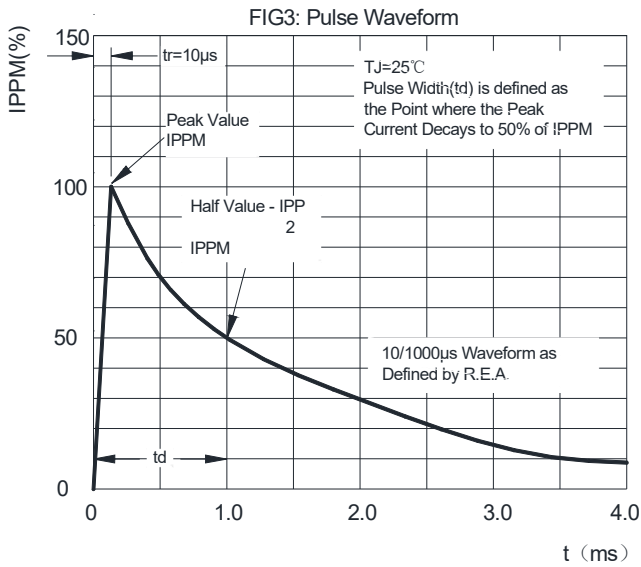
FIG2: Pulse Power or Current vs. Initial Junction Temperature





# SMB10J SERIES

## ■ Characteristics (Typical)



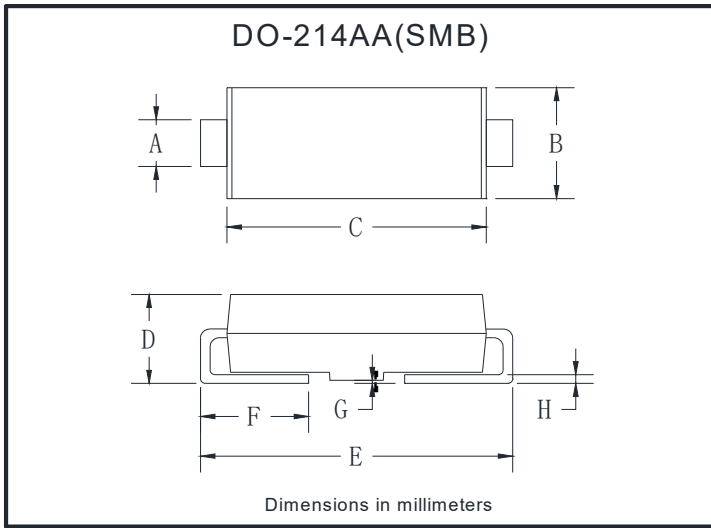
## ■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMB10J SERIES	F1	0.0975	3000	/	48000	13" reel
SMB10J SERIES	F2	0.0975	750	3000	24000	7" reel
SMB10J SERIES	F3	0.0975	500	2000	16000	7" reel



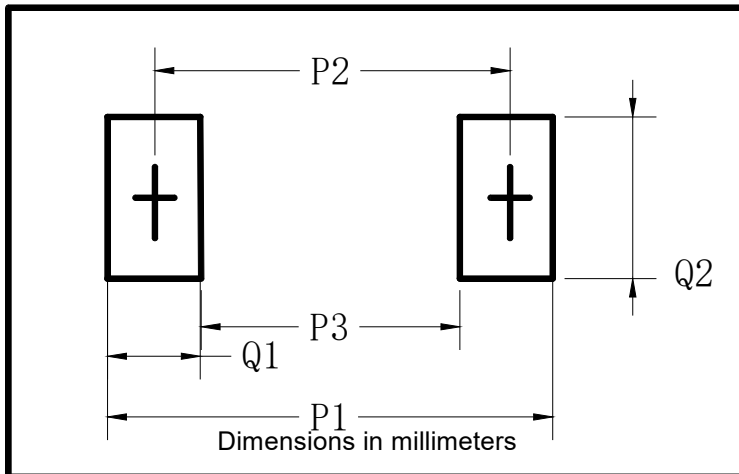
# SMB10J SERIES

## ■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

## ■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3



## SMB10J SERIES

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