

# Transient Voltage Suppressors 1000W DO-214AA

SMB10J Series

MERITEK

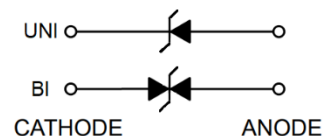
## FEATURE

- 1000W Peak Pulse Power (10/1000 $\mu$ s), Repetitive Rate: 0.01%
- 5.0V to 120V Stand-Off Voltage
- Excellent Clamping Capability, Low Leakage
- Glass Passivated Junction
- Very Fast Response Time
- UL Flammability Classification Rating: 94V-0



## MECHANICAL DATA

- Case: DO-214AA (SMB), Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Color Band Denotes Cathode End Except Bipolar



## MAXIMUM RATINGS

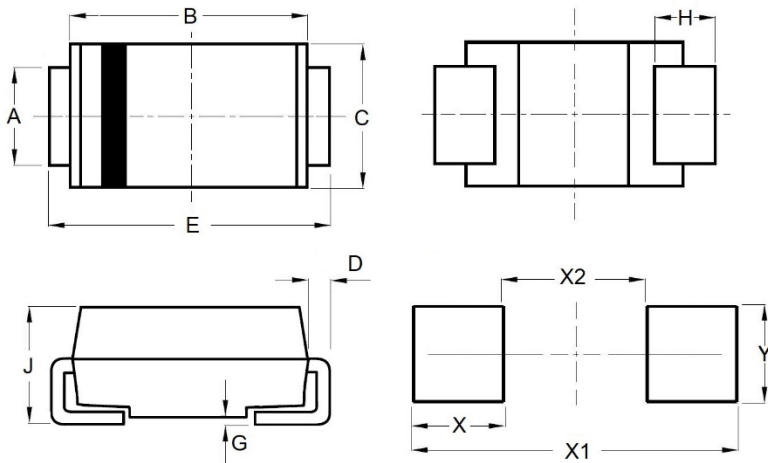
Parameter	Symbol	Value	Unit
Peak Power Dissipation on 10/1000 $\mu$ s Waveform	$P_{PP}$	1000	W
Peak Pulse Current on 10/1000 $\mu$ s Waveform	$I_{PP}$	See Next Table	A
Power Dissipation on Infinite Heat Sink at $T_L = 75^\circ\text{C}$	$P_D$	5.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Unidirectional Only	$I_{FSM}$	100	A
Maximum Instantaneous Forward Voltage at 25A, For Unidirectional Only	$V_F$	3.5/5.0	V
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

Note:

1.  $T_A = 25^\circ\text{C}$  ambient temperature unless otherwise specified.
2. Non-repetitive current pulse, and derated above  $T_A = 25^\circ\text{C}$ .
3. Measured on 8.3ms single half sine-wave or equivalent square wave, Duty cycle = 4 pulses per minute maximum.
4.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 50\text{V}$ .

## DIMENSIONS

DO-214AA(SMB)	Min (mm)	Max (mm)
A	1.96	2.20
B	4.35	4.85
C	3.30	3.75
D	0.15	0.30
E	5.10	5.50
G	-	0.20
H	0.75	1.51
J	2.13	2.44
X	2.29	
X1	6.34	
X2	1.76	
Y	2.72	



### ELECTRICAL CHARACTERISTICS

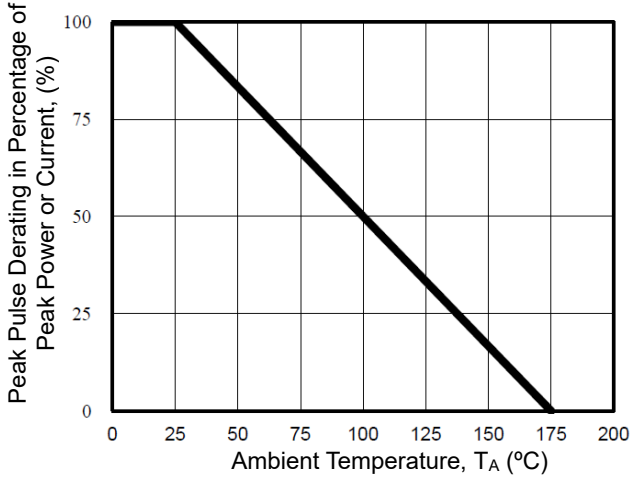
Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Maximum Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	$V_{RWM}$ (V)	$V_{BR}$ Min(V)	$V_{BR}$ Max(V)	$I_T$ (mA)	$I_R$ ( $\mu$ A) at $V_{RWM}$	$V_C$ (V) @ $I_{PP}$	$I_{PP}$ (A) Max
SMB10J5.0A	SMB10J5.0CA	5.0	6.40	7.00	10	800	9.20	108.7
SMB10J6.0A	SMB10J6.0CA	6.0	6.67	7.37	10	800	10.3	97.09
SMB10J6.5A	SMB10J6.5CA	6.5	7.22	7.98	10	500	11.2	89.29
SMB10J7.0A	SMB10J7.0CA	7.0	7.78	8.60	10	200	12.0	83.33
SMB10J7.5A	SMB10J7.5CA	7.5	8.33	9.21	1	100	12.9	77.52
SMB10J8.0A	SMB10J8.0CA	8.0	8.89	9.83	1	50	13.6	73.53
SMB10J8.5A	SMB10J8.5CA	8.5	9.44	10.4	1	10	14.4	69.44
SMB10J9.0A	SMB10J9.0CA	9.0	10.0	11.1	1	5	15.4	64.94
SMB10J10A	SMB10J10CA	10	11.1	12.3	1	5	17.0	58.82
SMB10J11A	SMB10J11CA	11	12.2	13.5	1	5	18.2	54.95
SMB10J12A	SMB10J12CA	12	13.3	14.7	1	5	19.9	50.25
SMB10J13A	SMB10J13CA	13	14.4	15.9	1	1	21.5	46.51
SMB10J14A	SMB10J14CA	14	15.6	17.2	1	1	23.2	43.10
SMB10J15A	SMB10J15CA	15	16.7	18.5	1	1	24.4	40.98
SMB10J16A	SMB10J16CA	16	17.8	19.7	1	1	26.0	38.46
SMB10J17A	SMB10J17CA	17	18.9	20.9	1	1	27.6	36.23
SMB10J18A	SMB10J18CA	18	20.0	22.1	1	1	29.2	34.25
SMB10J19A	SMB10J19CA	19	21.1	23.3	1	1	30.8	32.49
SMB10J20A	SMB10J20CA	20	22.2	24.5	1	1	32.4	30.86
SMB10J22A	SMB10J22CA	22	24.4	26.9	1	1	35.5	28.17
SMB10J24A	SMB10J24CA	24	26.7	29.5	1	1	38.9	25.71
SMB10J26A	SMB10J26CA	26	28.9	31.9	1	1	42.1	23.75
SMB10J28A	SMB10J28CA	28	31.1	34.4	1	1	45.4	22.03
SMB10J30A	SMB10J30CA	30	33.3	36.8	1	1	48.4	20.66
SMB10J33A	SMB10J33CA	33	36.7	40.6	1	1	53.3	18.76
SMB10J36A	SMB10J36CA	36	40.0	44.2	1	1	58.1	17.21
SMB10J40A	SMB10J40CA	40	44.4	49.1	1	1	64.5	15.50
SMB10J43A	SMB10J43CA	43	47.8	52.8	1	1	69.4	14.41
SMB10J45A	SMB10J45CA	45	50.0	55.3	1	1	72.7	13.76
SMB10J48A	SMB10J48CA	48	53.3	58.9	1	1	77.4	12.92
SMB10J51A	SMB10J51CA	51	56.7	62.7	1	1	82.4	12.14
SMB10J54A	SMB10J54CA	54	60.0	66.3	1	1	87.1	11.48
SMB10J58A	SMB10J58CA	58	64.4	71.2	1	1	93.6	10.68
SMB10J60A	SMB10J60CA	60	66.7	73.7	1	1	96.8	10.33
SMB10J64A	SMB10J64CA	64	71.1	78.6	1	1	103	9.71
SMB10J70A	SMB10J70CA	70	77.8	86.0	1	1	113	8.85
SMB10J75A	SMB10J75CA	75	83.3	92.1	1	1	121	8.26
SMB10J78A	SMB10J78CA	78	86.7	95.8	1	1	126	7.94
SMB10J80A	SMB10J80CA	80	88.8	97.6	1	1	129.6	7.72
SMB10J85A	SMB10J85CA	85	94.4	104	1	1	137	7.30
SMB10J90A	SMB10J90CA	90	100	111	1	1	146	6.85
SMB10J100A	SMB10J100CA	100	111	123	1	1	162	6.17
SMB10J110A	SMB10J110CA	110	122	135	1	1	177	5.65
SMB10J120A	SMB10J120CA	120	133	147	1	1	193	5.18

Note:

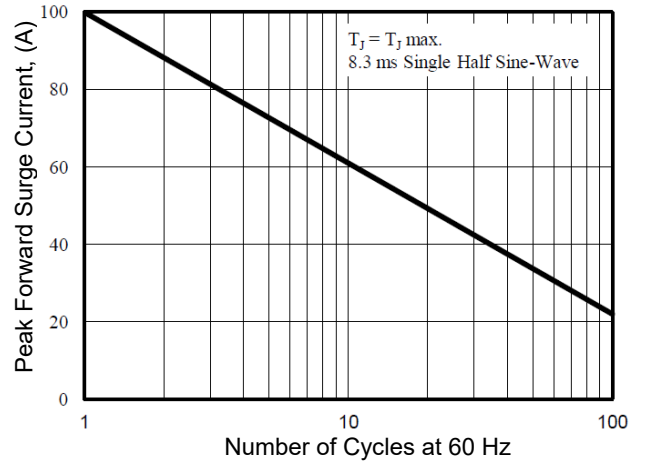
1.  $T_A = 25^\circ\text{C}$  ambient temperature unless otherwise specified.
2. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device.
3. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
4. For Bi-directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double.

### CHARACTERISTIC CURVES

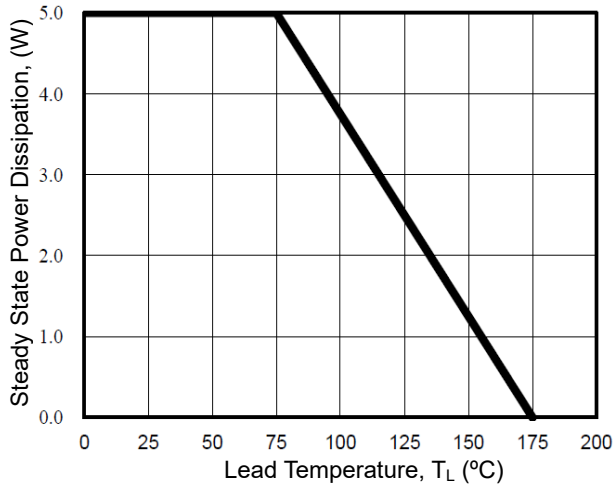
Pulse Derating Curve



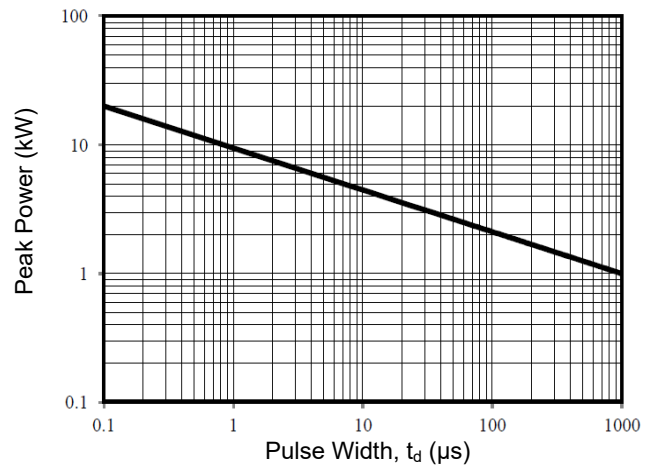
Maximum Non-Repetitive Surge Current



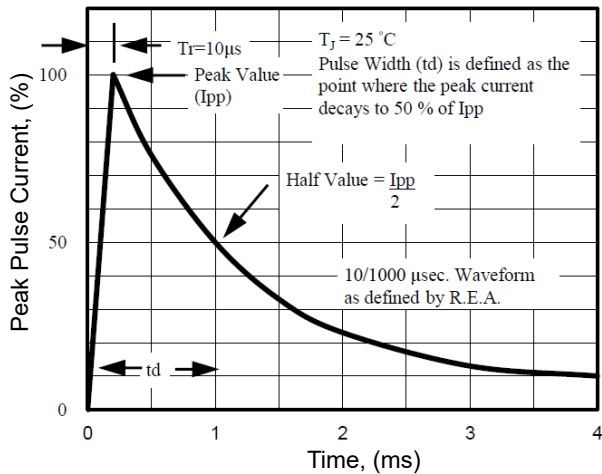
Steady State Power Derating Curve



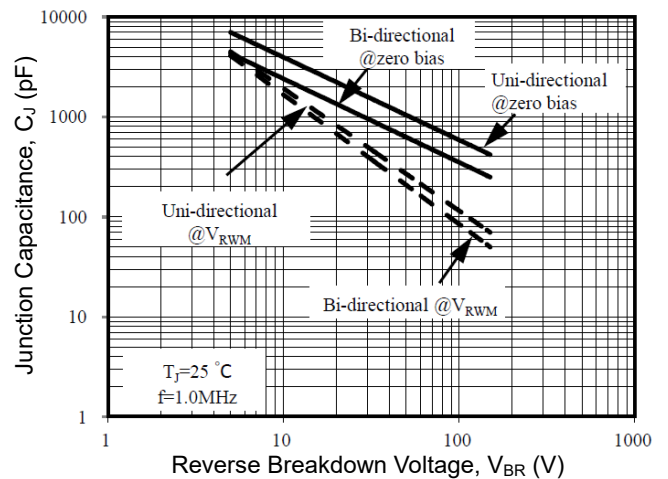
Peak Pulse Power Rating Curve



Pulse Waveform



Typical Junction Capacitance



\*Specifications subject to change without notice.