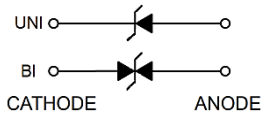
Transient Voltage Suppressors
600W DO-214AA AEC-Q101

SMBJ-A Series

MERITEK

FEATURE

- 600W Peak Pulse Power Capability (10/1000 μs), Repetitive Rate:0.01%
- Fast Response Time
- 5.0V to 440V Standoff Voltage
- Excellent Clamping Capability, Low Inductance
- Glass Passivated Junction
- UL Safety Approved Certification No: E223045
- AEC-Q101 Compliance



MECHANICAL DATA

- Case: DO-214AA(SMB), Molded Epoxy Meets UL94V-0
- 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 with 10/1000μs Waveform		P_{PPM}	600	W
Peak Pulse Current with 10/1000μs Waveform		I_{PP}	See Table	A
Power Dissipation at T_L = 75°C		P_D	5.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave		I_{FSM}	100	A
Maximum Instantaneous Forward Voltage at I_F=50A, Unidirectional Only		V_F	3.5/5.0	V
Typical Thermal Resistance	Junction to Ambient	$R_{\theta JA}$	50	°C/W
	Junction to Case	$R_{\theta JC}$	30	°C/W
Operating Junction And Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max. Reverse Leakage Current	Max. Clamping Voltage	Max. Reverse Surge Current
Uni-Polar	Bi-Polar	V_{RWM} (V)	$V_{BR,MIN}$ (V)	$V_{BR,MAX}$ (V)	I_T (mA)	I_R(μA) @V_{RWMM}	V_C(V) @ I_{PP}	I_{PP} (A)
SMBJ5.0A-A	SMBJ5.0CA-A	5.0	6.40	7.00	10	800	9.2	43.5
SMBJ6.0A-A	SMBJ6.0CA-A	6.0	6.67	7.37	10	800	10.3	38.0
SMBJ6.5A-A	SMBJ6.5CA-A	6.5	7.22	7.98	10	500	11.2	35.7
SMBJ7.0A-A	SMBJ7.0CA-A	7.0	7.78	8.60	10	200	12.0	33.3
SMBJ7.5A-A	SMBJ7.5CA-A	7.5	8.33	9.21	1.0	100	12.9	31.0
SMBJ8.0A-A	SMBJ8.0CA-A	8.0	8.89	9.83	1.0	50	13.6	29.4
SMBJ8.5A-A	SMBJ8.5CA-A	8.5	9.44	10.40	1.0	20	14.4	27.7
SMBJ9.0A-A	SMBJ9.0CA-A	9.0	10.00	11.10	1.0	10	15.4	26.0
SMBJ10A-A	SMBJ10CA-A	10.0	11.10	12.30	1.0	5	17.0	23.5
SMBJ11A-A	SMBJ11CA-A	11.0	12.20	13.50	1.0	1	18.2	22.0
SMBJ12A-A	SMBJ12CA-A	12.0	13.30	14.70	1.0	1	19.9	20.1
SMBJ13A-A	SMBJ13CA-A	13.0	14.40	15.90	1.0	1	21.5	18.6
SMBJ14A-A	SMBJ14CA-A	14.0	15.60	17.20	1.0	1	23.2	17.2
SMBJ15A-A	SMBJ15CA-A	15.0	16.70	18.50	1.0	1	24.4	16.4

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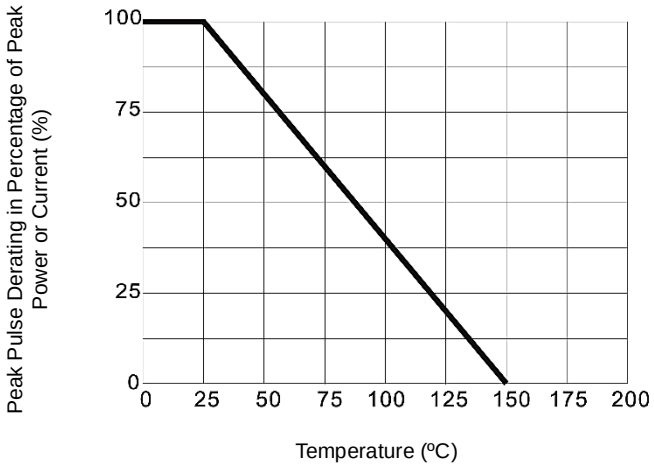
Uni-Polar	Bi-Polar	V_{RWM} (V)	$V_{BR,MIN}$ (V)	$V_{BR,MAX}$ (V)	I_T (mA)	I_R(μA) @V_{RWMM}	V_C(V) @ I_{PP}	I_{PP} (A)
SMBJ16A-A	SMBJ16CA-A	16.0	17.80	19.70	1.0	1	26.0	15.4
SMBJ17A-A	SMBJ17CA-A	17.0	18.90	20.90	1.0	1	27.6	14.5
SMBJ18A-A	SMBJ18CA-A	18.0	20.00	22.10	1.0	1	29.2	13.7
SMBJ20A-A	SMBJ20CA-A	20.0	22.20	24.50	1.0	1	32.4	12.3
SMBJ22A-A	SMBJ22CA-A	22.0	24.40	26.90	1.0	1	35.3	11.2
SMBJ24A-A	SMBJ24CA-A	24.0	26.70	29.50	1.0	1	38.9	10.3
SMBJ26A-A	SMBJ26CA-A	26.0	28.90	31.90	1.0	1	42.1	9.5
SMBJ28A-A	SMBJ28CA-A	28.0	31.10	34.40	1.0	1	45.4	8.8
SMBJ30A-A	SMBJ30CA-A	30.0	33.30	36.80	1.0	1	48.4	8.3
SMBJ33A-A	SMBJ33CA-A	33.0	33.70	40.60	1.0	1	53.3	7.5
SMBJ36A-A	SMBJ36CA-A	36.0	36.70	44.90	1.0	1	58.1	6.9
SMBJ40A-A	SMBJ40CA-A	40.0	40.00	44.20	1.0	1	64.5	6.2
SMBJ43A-A	SMBJ43CA-A	43.0	44.40	54.30	1.0	1	69.4	5.8
SMBJ45A-A	SMBJ45CA-A	45.0	47.80	58.40	1.0	1	72.7	5.5
SMBJ48A-A	SMBJ48CA-A	48.0	53.30	58.90	1.0	1	77.4	5.2
SMBJ51A-A	SMBJ51CA-A	51.0	56.70	62.70	1.0	1	82.4	4.9
SMBJ54A-A	SMBJ54CA-A	54.0	60.00	66.30	1.0	1	87.1	4.6
SMBJ58A-A	SMBJ58CA-A	58.0	64.40	71.20	1.0	1	93.6	4.3
SMBJ60A-A	SMBJ60CA-A	60.0	66.70	73.70	1.0	1	96.8	4.1
SMBJ64A-A	SMBJ64CA-A	64.0	71.10	78.60	1.0	1	103.0	3.9
SMBJ70A-A	SMBJ70CA-A	70.0	77.80	86.00	1.0	1	113.0	3.5
SMBJ75A-A	SMBJ75CA-A	75.0	83.30	92.10	1.0	1	121.0	3.3
SMBJ78A-A	SMBJ78CA-A	78.0	86.70	95.80	1.0	1	126.0	3.2
SMBJ85A-A	SMBJ85CA-A	85.0	94.40	104.00	1.0	1	137.0	2.9
SMBJ90A-A	SMBJ90CA-A	90.0	100.00	111.00	1.0	1	146.0	2.7
SMBJ100A-A	SMBJ100CA-A	100.0	111.00	123.00	1.0	1	162.0	2.5
SMBJ110A-A	SMBJ110CA-A	110.0	122.00	135.00	1.0	1	177.0	2.3
SMBJ120A-A	SMBJ120CA-A	120.0	133.00	147.00	1.0	1	193.0	2.1
SMBJ130A-A	SMBJ130CA-A	130.0	144.00	159.00	1.0	1	209.0	1.9
SMBJ150A-A	SMBJ150CA-A	150.0	167.00	185.00	1.0	1	243.0	1.6
SMBJ160A-A	SMBJ160CA-A	160.0	178.00	197.00	1.0	1	259.0	1.5
SMBJ170A-A	SMBJ170CA-A	170.0	189.00	209.00	1.0	1	275.0	2.2
SMBJ180A-A	SMBJ180CA-A	180.0	201.00	222.00	1.0	1	292.0	2.1
SMBJ200A-A	SMBJ200CA-A	200.0	224.00	247.00	1.0	1	324.0	1.9
SMBJ220A-A	SMBJ220CA-A	220.0	246.00	272.00	1.0	1	356.0	1.7
SMBJ250A-A	SMBJ250CA-A	250.0	279.00	309.00	1.0	1	405.0	1.5
SMBJ300A-A	SMBJ300CA-A	300.0	335.00	371.00	1.0	1	486.0	1.3
SMBJ350A-A	SMBJ350CA-A	350.0	391.00	432.00	1.0	1	567.0	1.1
SMBJ400A-A	SMBJ400CA-A	400.0	447.00	494.00	1.0	1	648.0	0.9
SMBJ440A-A	SMBJ440CA-A	440.0	492.00	543.00	1.0	1	713.0	0.9

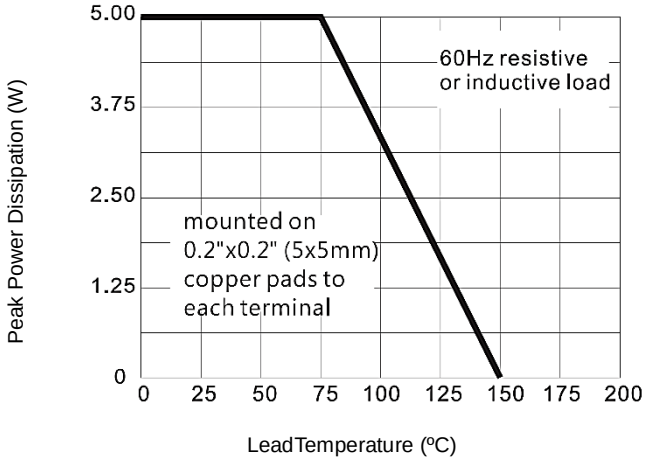
Note:
1. Non-repetitive current pulse and derated above T_A=25℃.
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3. V_F< 3.5V for devices of V_{BR}< 200V and V_F< 5.0V for devices of V_{BR}> 201V.
4. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.
5. For Bi-Directional devices having V_R of 10 volts and under the I_R limit is double.
6. Mounted on copper pad area of 0.2x0.2inch^2 (5.0x5.0mm^2)
7. All terms and symbols are consistent with ANS/IEEE C62.35

CHARACTERISTIC CURVES

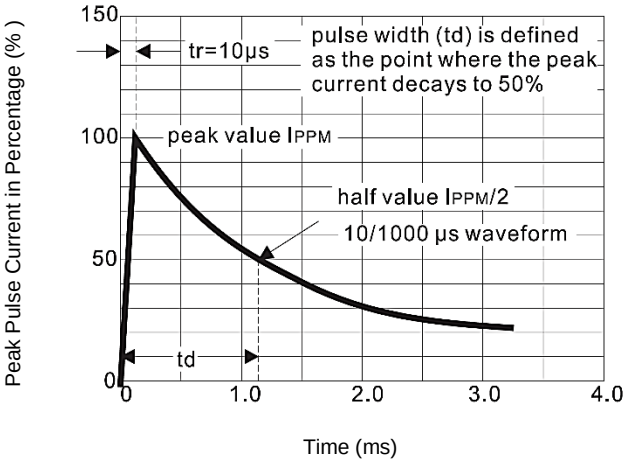
Pulse Derating Curve



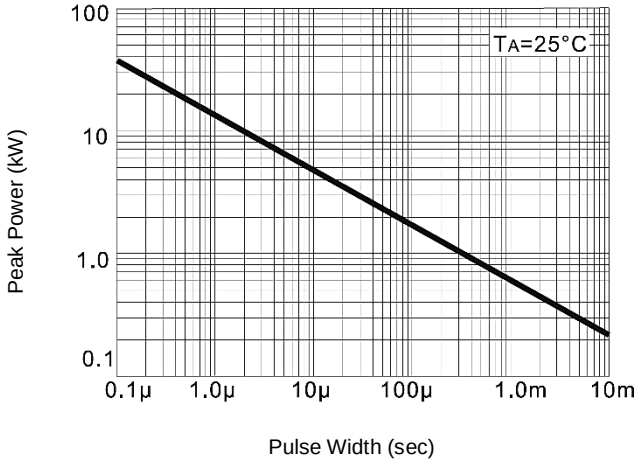
Steady State Pulse Derating Curve



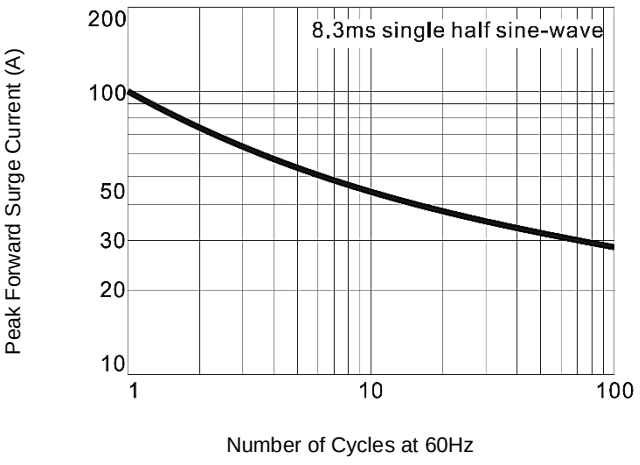
Pulse Waveform



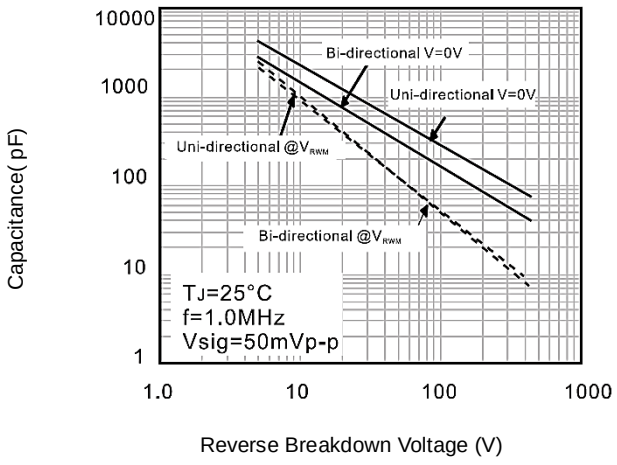
Peak Pulse Power Rating Curve



Maximum Non-Repetitive Surge Current



Typical Junction Capacitance



DIMENSIONS

Item	Min (mm)	Max (mm)
A	1.800	2.200
B	4.050	4.650
C	3.300	3.940
D	0.152	0.305
E	5.140	5.560
G	0.000	0.203
H	0.760	1.520
J	2.050	2.450
X	2.50	
X1	6.80	
X2	1.80	
Y	2.30