

Transient Voltage Suppressors 600W DO-214AA

SMBJ Series

MERITEK

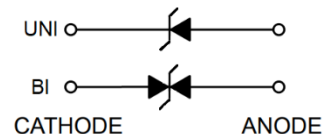
FEATURE

- 600W Peak Pulse Power (10/1000 μ s), Repetitive Rate: 0.01%
- 5.0V to 440V 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

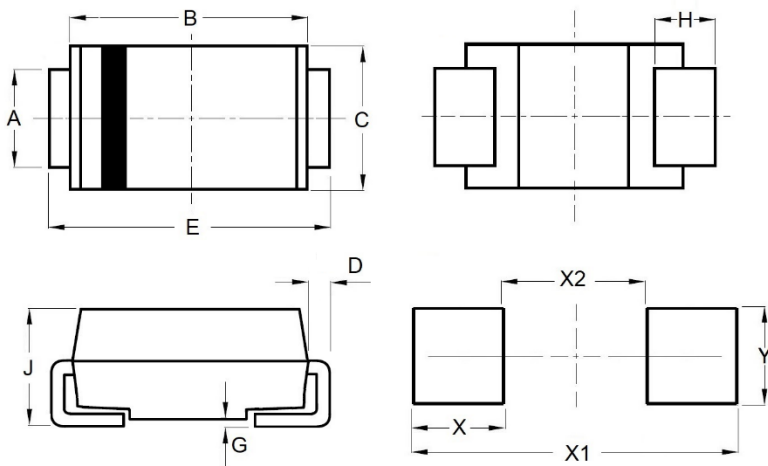
Parameter	Symbol	Value	Unit
Peak Power Dissipation on 10/1000 μ s Waveform	P_{PP}	600	W
Peak Pulse Current on 10/1000 μ s Waveform	I_{PP}	See Next Table	A
Power Dissipation on Infinite Heat Sink at $T_L = 75^\circ\text{C}$	P_D	5.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Unidirectional Only	I_{FSM}	100	A
Maximum Instantaneous Forward Voltage at 50A, 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 $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$.

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	



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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} (V) Min	V _{BR} (V) Max	I _T (mA)	I _R (μA) at V _{RWM}	V _C (V) @ I _{PP}	I _{PP} (A) Max
SMBJ5.0	SMBJ5.0C	5.0	6.40	7.30	10	800	9.6	62.50
SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.00	10	800	9.2	65.22
SMBJ6.0	SMBJ6.0C	6.0	6.67	8.15	10	800	11.4	52.63
SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.37	10	800	10.3	58.25
SMBJ6.5	SMBJ6.5C	6.5	7.22	8.82	10	500	12.3	48.78
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	500	11.2	53.57
SMBJ7.0	SMBJ7.0C	7.0	7.78	9.51	10	200	13.3	45.11
SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.60	10	200	12.0	50.00
SMBJ7.5	SMBJ7.5C	7.5	8.33	10.2	1	100	14.3	41.96
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	100	12.9	46.51
SMBJ8.0	SMBJ8.0C	8.0	8.89	10.9	1	50	15.0	40.00
SMBJ8.0A	SMBJ8.0CA	8.0	8.89	9.83	1	50	13.6	44.12
SMBJ8.5	SMBJ8.5C	8.5	9.44	11.5	1	10	15.9	37.74
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.4	1	10	14.4	41.67
SMBJ9.0	SMBJ9.0C	9.0	10.0	12.2	1	5	16.9	35.50
SMBJ9.0A	SMBJ9.0CA	9.0	10.0	11.1	1	5	15.4	38.96
SMBJ10	SMBJ10C	10	11.1	13.6	1	5	18.8	31.91
SMBJ10A	SMBJ10CA	10	11.1	12.3	1	5	17.0	35.29
SMBJ11	SMBJ11C	11	12.2	14.9	1	1	20.1	29.85
SMBJ11A	SMBJ11CA	11	12.2	13.5	1	1	18.2	32.97
SMBJ12	SMBJ12C	12	13.3	16.3	1	1	22.0	27.27
SMBJ12A	SMBJ12CA	12	13.3	14.7	1	1	19.9	30.15
SMBJ13	SMBJ13C	13	14.4	17.6	1	1	23.8	25.21
SMBJ13A	SMBJ13CA	13	14.4	15.9	1	1	21.5	27.91
SMBJ14	SMBJ14C	14	15.6	19.1	1	1	25.8	23.26
SMBJ14A	SMBJ14CA	14	15.6	17.2	1	1	23.2	25.86
SMBJ15	SMBJ15C	15	16.7	20.4	1	1	26.9	22.30
SMBJ15A	SMBJ15CA	15	16.7	18.5	1	1	24.4	24.59
SMBJ16	SMBJ16C	16	17.8	21.8	1	1	28.8	20.83
SMBJ16A	SMBJ16CA	16	17.8	19.7	1	1	26.0	23.08
SMBJ17	SMBJ17C	17	18.9	23.1	1	1	30.5	19.67
SMBJ17A	SMBJ17CA	17	18.9	20.9	1	1	27.6	21.74
SMBJ18	SMBJ18C	18	20.0	24.4	1	1	32.2	18.63
SMBJ18A	SMBJ18CA	18	20.0	22.1	1	1	29.2	20.55
SMBJ19	SMBJ19C	19	21.13	25.76	1	1	34.0	17.64
SMBJ19A	SMBJ19CA	19	21.10	23.30	1	1	30.8	19.49
SMBJ20	SMBJ20C	20	22.2	27.1	1	1	35.8	16.76
SMBJ20A	SMBJ20CA	20	22.2	24.5	1	1	32.4	18.52
SMBJ22	SMBJ22C	22	24.4	29.8	1	1	39.4	15.23
SMBJ22A	SMBJ22CA	22	24.4	26.9	1	1	35.5	16.90
SMBJ24	SMBJ24C	24	26.7	32.6	1	1	43.0	13.95
SMBJ24A	SMBJ24CA	24	26.7	29.5	1	1	38.9	15.42
SMBJ26	SMBJ26C	26	28.9	35.3	1	1	46.6	12.88
SMBJ26A	SMBJ26CA	26	28.9	31.9	1	1	42.1	14.25
SMBJ28	SMBJ28C	28	31.1	38.0	1	1	50.0	12.00
SMBJ28A	SMBJ28CA	28	31.1	34.4	1	1	45.4	13.22
SMBJ30	SMBJ30C	30	33.3	40.7	1	1	53.5	11.21
SMBJ30A	SMBJ30CA	30	33.3	36.8	1	1	48.4	12.40
SMBJ33	SMBJ33C	33	36.7	44.9	1	1	59.0	10.17
SMBJ33A	SMBJ33CA	33	36.7	40.6	1	1	53.3	11.26
SMBJ36	SMBJ36C	36	40.0	48.9	1	1	64.3	9.33
SMBJ36A	SMBJ36CA	36	40.0	44.2	1	1	58.1	10.33
SMBJ40	SMBJ40C	40	44.4	54.3	1	1	71.4	8.40
SMBJ40A	SMBJ40CA	40	44.4	49.1	1	1	64.5	9.30
SMBJ43	SMBJ43C	43	47.8	58.4	1	1	76.7	7.82

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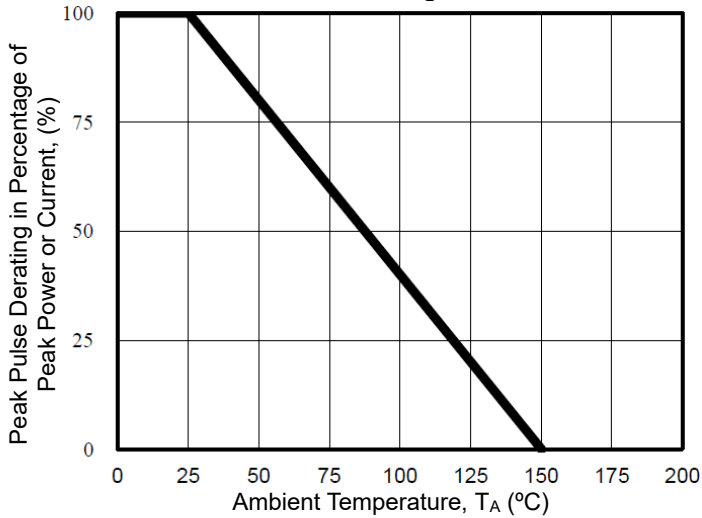
Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Maximum Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V _{RWM} (V)	V _{BR} (V) Min	V _{BR} (V) Max	I _T (mA)	I _R (μA) at V _{RWM}	V _C (V) @ I _{PP}	I _{PP} (A) Max
SMBJ43A	SMBJ43CA	43	47.8	52.8	1	1	69.4	8.65
SMBJ45	SMBJ45C	45	50.0	61.1	1	1	80.3	7.47
SMBJ45A	SMBJ45CA	45	50.0	55.3	1	1	72.7	8.25
SMBJ48	SMBJ48C	48	53.3	65.1	1	1	85.5	7.02
SMBJ48A	SMBJ48CA	48	53.3	58.9	1	1	77.4	7.75
SMBJ51	SMBJ51C	51	56.7	69.3	1	1	91.1	6.59
SMBJ51A	SMBJ51CA	51	56.7	62.7	1	1	82.4	7.28
SMBJ54	SMBJ54C	54	60.0	73.3	1	1	96.3	6.23
SMBJ54A	SMBJ54CA	54	60.0	66.3	1	1	87.1	6.89
SMBJ58	SMBJ58C	58	64.4	78.7	1	1	103	5.83
SMBJ58A	SMBJ58CA	58	64.4	71.2	1	1	93.6	6.41
SMBJ60	SMBJ60C	60	66.7	81.5	1	1	107	5.61
SMBJ60A	SMBJ60CA	60	66.7	73.7	1	1	96.8	6.20
SMBJ64	SMBJ64C	64	71.1	86.9	1	1	114	5.26
SMBJ64A	SMBJ64CA	64	71.1	78.6	1	1	103	5.83
SMBJ70	SMBJ70C	70	77.8	95.1	1	1	125	4.80
SMBJ70A	SMBJ70CA	70	77.8	86.0	1	1	113	5.31
SMBJ75	SMBJ75C	75	83.3	102	1	1	134	4.48
SMBJ75A	SMBJ75CA	75	83.3	92.1	1	1	121	4.96
SMBJ78	SMBJ78C	78	86.7	106.0	1	1	139	4.32
SMBJ78A	SMBJ78CA	78	86.7	95.8	1	1	126	4.76
SMBJ80	SMBJ80C	80	88.96	108.8	1	1	143.2	4.19
SMBJ80A	SMBJ80CA	80	88.80	97.60	1	1	129.6	4.63
SMBJ85	SMBJ85C	85	94.4	115	1	1	151	3.97
SMBJ85A	SMBJ85CA	85	94.4	104	1	1	137	4.38
SMBJ90	SMBJ90C	90	100	122	1	1	160	3.75
SMBJ90A	SMBJ90CA	90	100	111	1	1	146	4.11
SMBJ100	SMBJ100C	100	111	136	1	1	179	3.35
SMBJ100A	SMBJ100CA	100	111	123	1	1	162	3.70
SMBJ110	SMBJ110C	110	122	149	1	1	196	3.06
SMBJ110A	SMBJ110CA	110	122	135	1	1	177	3.39
SMBJ120	SMBJ120C	120	133	163	1	1	214	2.80
SMBJ120A	SMBJ120CA	120	133	147	1	1	193	3.11
SMBJ130	SMBJ130C	130	144	176	1	1	231	2.60
SMBJ130A	SMBJ130CA	130	144	159	1	1	209	2.87
SMBJ140	SMBJ140C	140	155.68	190.40	1	1	250.6	2.39
SMBJ140A	SMBJ140CA	140	155.00	171.00	1	1	226.8	2.65
SMBJ150	SMBJ150C	150	167	204	1	1	268	2.24
SMBJ150A	SMBJ150CA	150	167	185	1	1	243	2.47
SMBJ160	SMBJ160C	160	178	218	1	1	287	2.09
SMBJ160A	SMBJ160CA	160	178	197	1	1	259	2.32
SMBJ170	SMBJ170C	170	189	231	1	1	304	1.97
SMBJ170A	SMBJ170CA	170	189	209	1	1	275	2.18
SMBJ180	SMBJ180C	180	200.16	244.80	1	1	322.2	1.86
SMBJ180A	SMBJ180CA	180	200.00	220.00	1	1	291.6	2.06
SMBJ190	SMBJ190C	190	211.28	258.40	1	1	340.1	1.76
SMBJ190A	SMBJ190CA	190	211.00	232.00	1	1	307.8	1.95
SMBJ200A	SMBJ200CA	200	224	247	1	1	324	1.85
SMBJ220A	SMBJ220CA	220	246	272	1	1	356	1.69
SMBJ250A	SMBJ250CA	250	279	309	1	1	405	1.48
SMBJ300A	SMBJ300CA	300	335	371	1	1	486	1.23
SMBJ350A	SMBJ350CA	350	391	432	1	1	567	1.06
SMBJ400A	SMBJ400CA	400	447	494	1	1	648	0.93
SMBJ440A	SMBJ440CA	440	492	543	1	1	713	0.84

Note:

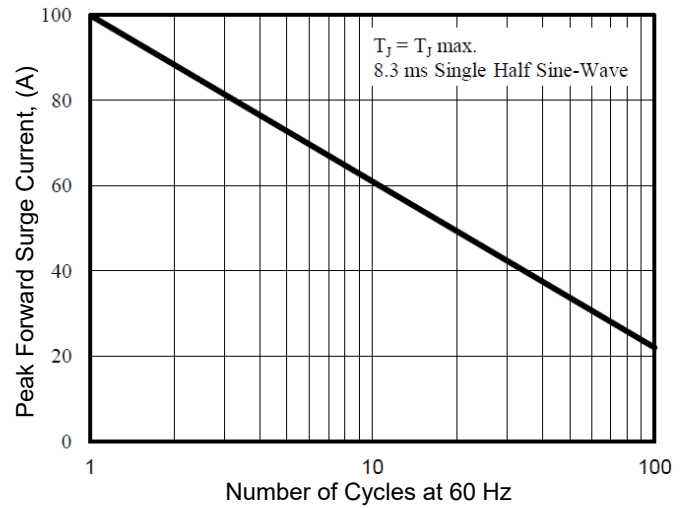
- Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
- For Bi-directional devices having V_R of 10 volts and under, the I_R limit is double.

CHARACTERISTIC CURVES

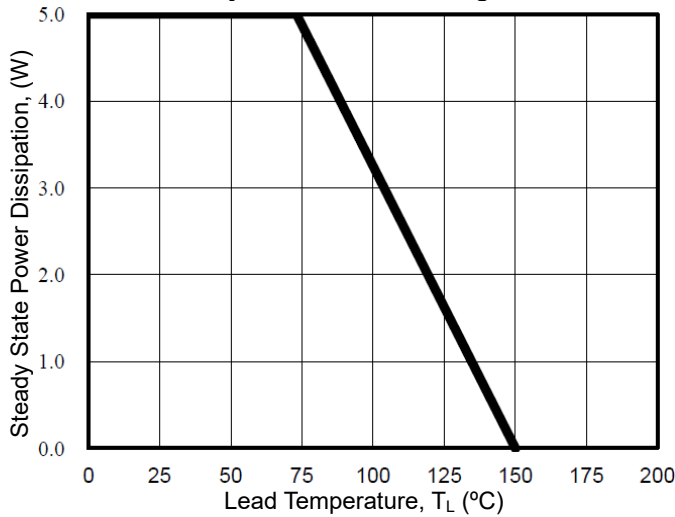
Pulse Derating Curve



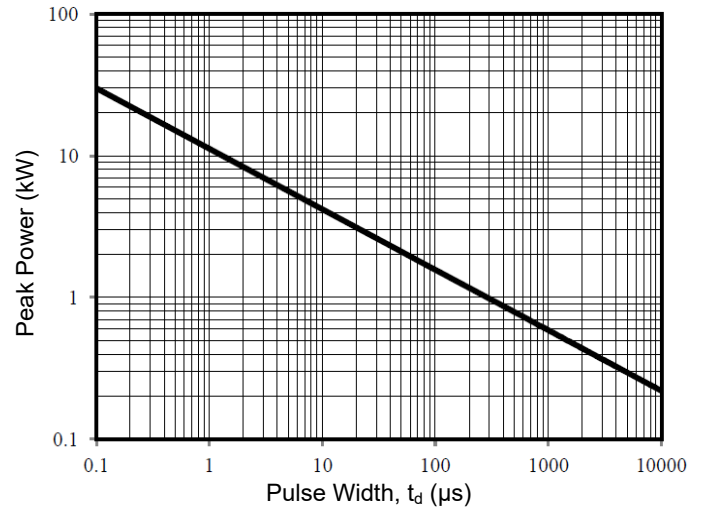
Maximum Non-Repetitive Surge Current



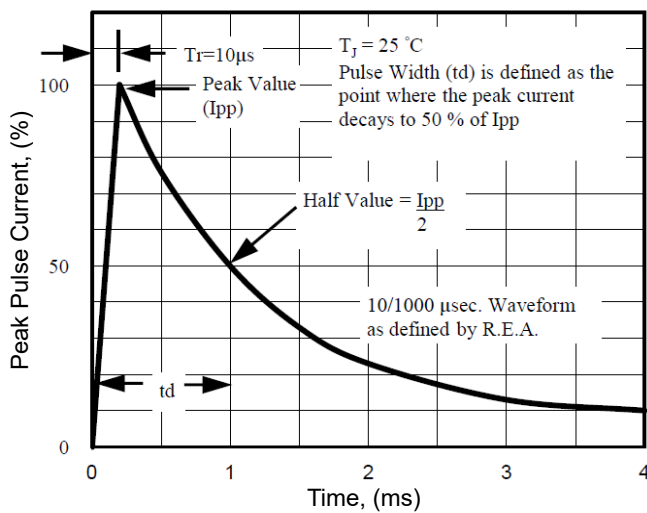
Steady State Power Derating Curve



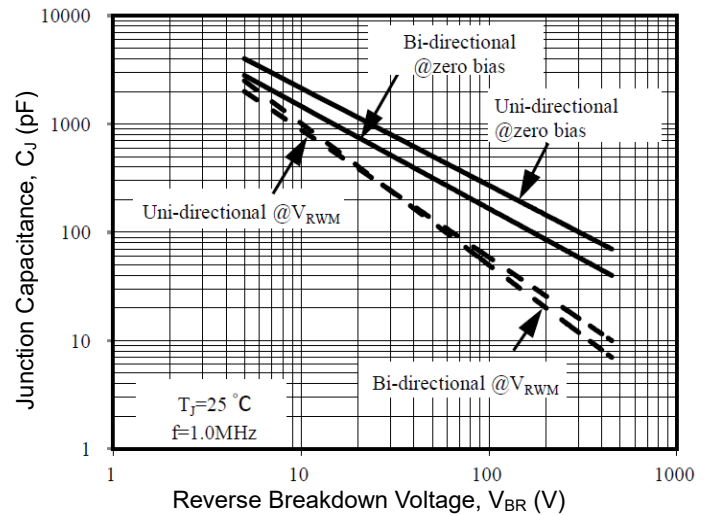
Peak Pulse Power Rating Curve



Pulse Waveform



Typical Junction Capacitance



*Specifications subject to change without notice.