

Transient Voltage Suppressors 1500W DO-214AB

SMCJ series

MERITEK

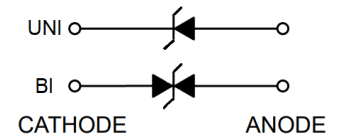
FEATURE

- 1500W Peak Pulse Power (10/1000 μ s Waveform), Repetitive Rate:0.01%
- 5.0V to 440V Standoff Voltage
- Fast Response Time
- Excellent Clamping Capability
- Glass Passivated Junction
- Low Leakage
- UL Flammability Classification Rating 94V-0



MECHANICAL DATA

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



MAXIMUM RATINGS

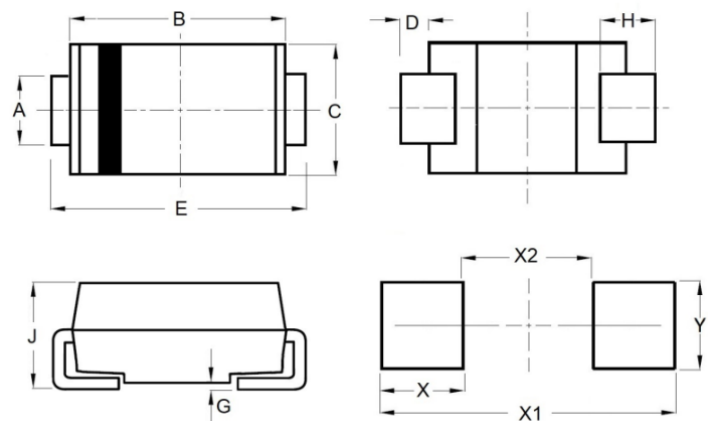
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation On 10/1000 μ s Waveform	P_{PPM}	1500	W
Peak Pulse Current On 10/1000 μ s Waveform	I_{PPM}	See Table	A
Power Dissipation on infinite Heatsink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed On Rated Load	I_{FSM}	200	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V_F	3.5/5.0	V
Operating Junction And Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	75	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Lead	$R_{\theta JL}$	15	$^\circ\text{C/W}$

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 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 device of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$

DIMENSIONS

DO-214AB	Min (mm)	Max (mm)
A	2.90	3.20
B	6.60	7.15
C	5.55	6.04
D	0.15	0.30
E	7.75	7.95
G	--	0.20
H	0.75	1.51
J	1.98	2.53
X	3.03	
X1	9.90	
X2	3.84	
Y	3.82	



ELECTRICAL CHARACTERISTICS

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Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V _{RWM} (V)	V _{BR} (V) Min	V _{BR} (V) Max	IT(mA)	I _R (uA) @ V _{RWM}	V _C (V) @ I _{PP}	I _{PP} (A) Max
SMCJ5.0	SMCJ5.0C	5.0	6.40	7.30	10	800	9.6	156.25
SMCJ5.0A	SMCJ5.0CA	5.0	6.40	7.00	10	800	9.2	163.04
SMCJ6.0	SMCJ6.0C	6.0	6.67	8.15	10	800	11.4	131.58
SMCJ6.0A	SMCJ6.0CA	6.0	6.67	7.37	10	800	10.3	145.63
SMCJ6.5	SMCJ6.5C	6.5	7.22	8.82	10	500	12.3	121.95
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	500	11.2	133.93
SMCJ7.0	SMCJ7.0C	7.0	7.78	9.51	10	200	13.3	112.78
SMCJ7.0A	SMCJ7.0CA	7.0	7.78	8.60	10	200	12.0	125.0
SMCJ7.5	SMCJ7.5C	7.5	8.33	10.20	1	100	14.3	104.9
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.21	1	100	12.9	116.3
SMCJ8.0	SMCJ8.0C	8.0	8.89	10.90	1	50	15.0	100.0
SMCJ8.0A	SMCJ8.0CA	8.0	8.89	9.83	1	50	13.6	110.3
SMCJ8.5	SMCJ8.5C	8.5	9.44	11.50	1	20	15.9	94.3
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.40	1	20	14.4	104.2
SMCJ9.0	SMCJ9.0C	9.0	10.00	12.20	1	10	16.9	88.8
SMCJ9.0A	SMCJ9.0CA	9.0	10.00	11.10	1	10	15.4	97.4
SMCJ10	SMCJ10C	10	11.10	13.60	1	5	18.8	79.8
SMCJ10A	SMCJ10CA	10	11.10	12.30	1	5	17.0	88.2
SMCJ11	SMCJ11C	11	12.20	14.90	1	1	20.1	74.6
SMCJ11A	SMCJ11CA	11	12.20	13.50	1	1	18.2	82.4
SMCJ12	SMCJ12C	12	13.30	16.30	1	1	22.0	68.2
SMCJ12A	SMCJ12CA	12	13.30	14.70	1	1	19.9	75.4
SMCJ13	SMCJ13C	13	14.40	17.60	1	1	23.8	63.0
SMCJ13A	SMCJ13CA	13	14.40	15.90	1	1	21.5	69.8
SMCJ14	SMCJ14C	14	15.60	19.10	1	1	25.8	58.1
SMCJ14A	SMCJ14CA	14	15.60	17.20	1	1	23.2	64.7
SMCJ15	SMCJ15C	15	16.70	20.40	1	1	26.9	55.8
SMCJ15A	SMCJ15CA	15	16.70	18.50	1	1	24.4	61.5
SMCJ16	SMCJ16C	16	17.80	21.80	1	1	28.8	52.1
SMCJ16A	SMCJ16CA	16	17.80	19.70	1	1	26.0	57.7
SMCJ17	SMCJ17C	17	18.90	23.10	1	1	30.5	49.2
SMCJ17A	SMCJ17CA	17	18.90	20.90	1	1	27.6	54.4
SMCJ18	SMCJ18C	18	20.00	24.40	1	1	32.2	46.6
SMCJ18A	SMCJ18CA	18	20.00	22.10	1	1	29.2	51.4
SMCJ19	SMCJ19C	19	21.13	25.76	1	1	34.0	44.1
SMCJ19A	SMCJ19CA	19	21.1	23.30	1	1	30.8	48.7
SMCJ20	SMCJ20C	20	22.2	27.10	1	1	35.8	41.9
SMCJ20A	SMCJ20CA	20	22.2	24.50	1	1	32.4	46.3
SMCJ22	SMCJ22C	22	24.4	29.80	1	1	39.4	38.1
SMCJ22A	SMCJ22CA	22	24.4	26.90	1	1	35.5	42.3
SMCJ24	SMCJ24C	24	26.7	32.60	1	1	43.0	34.9
SMCJ24A	SMCJ24CA	24	26.7	29.50	1	1	38.9	38.6
SMCJ26	SMCJ26C	26	28.9	35.30	1	1	46.6	32.2
SMCJ26A	SMCJ26CA	26	28.9	31.90	1	1	42.1	35.6
SMCJ28	SMCJ28C	28	31.1	38.00	1	1	50.0	30.0
SMCJ28A	SMCJ28CA	28	31.1	34.40	1	1	45.4	33.0
SMCJ30	SMCJ30C	30	33.3	40.70	1	1	53.5	28.0
SMCJ30A	SMCJ30CA	30	33.3	36.80	1	1	48.4	31.0
SMCJ33	SMCJ33C	33	36.7	44.90	1	1	59.0	25.4
SMCJ33A	SMCJ33CA	33	36.7	40.60	1	1	53.3	28.1
SMCJ36	SMCJ36C	36	40.0	48.90	1	1	64.3	23.3
SMCJ36A	SMCJ36CA	36	40.0	44.20	1	1	58.1	25.8
SMCJ40	SMCJ40C	40	44.4	54.30	1	1	71.4	21.0
SMCJ40A	SMCJ40CA	40	44.4	49.10	1	1	64.5	23.3
SMCJ43	SMCJ43C	43	47.8	58.40	1	1	76.7	19.6
SMCJ43A	SMCJ43CA	43	47.8	52.80	1	1	69.4	21.6
SMCJ45	SMCJ45C	45	50.0	61.10	1	1	80.3	18.7
SMCJ45A	SMCJ45CA	45	50.0	55.30	1	1	72.7	20.6
SMCJ48	SMCJ48C	48	53.3	65.10	1	1	85.5	17.5
SMCJ48A	SMCJ48CA	48	53.3	58.90	1	1	77.4	19.4

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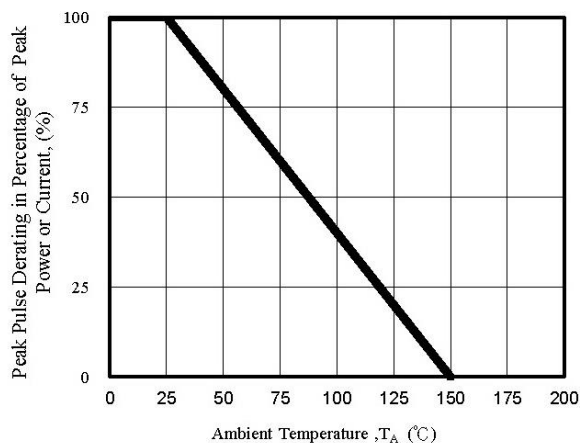
Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V_{RWM} (V)	V_{BR} (V) Min	V_{BR} (V) Max	I_T (mA)	I_R (uA) @ V_{RWM}	V_C (V) @ I_{PP}	I_{PP} (A) Max
SMCJ51	SMCJ51C	51	56.7	69.30	1	1	91.1	16.5
SMCJ51A	SMCJ51CA	51	56.7	62.70	1	1	82.4	18.2
SMCJ54	SMCJ54C	54	60.0	73.30	1	1	96.3	15.6
SMCJ54A	SMCJ54CA	54	60.0	66.30	1	1	87.1	17.2
SMCJ58	SMCJ58C	58	64.4	78.70	1	1	103.0	14.6
SMCJ58A	SMCJ58CA	58	64.4	71.20	1	1	93.6	16.0
SMCJ60	SMCJ60C	60	66.7	81.50	1	1	107.0	14.0
SMCJ60A	SMCJ60CA	60	66.7	73.70	1	1	96.8	15.5
SMCJ64	SMCJ64C	64	71.1	86.90	1	1	114.0	13.2
SMCJ64A	SMCJ64CA	64	71.1	78.60	1	1	103.0	14.6
SMCJ70	SMCJ70C	70	77.8	95.10	1	1	125.0	12.0
SMCJ70A	SMCJ70CA	70	77.8	86.00	1	1	113.0	13.3
SMCJ75	SMCJ75C	75	83.3	102.0	1	1	134.0	11.2
SMCJ75A	SMCJ75CA	75	83.3	92.1	1	1	121.0	12.4
SMCJ78	SMCJ78C	78	86.7	106.0	1	1	139.0	10.8
SMCJ78A	SMCJ78CA	78	86.7	95.8	1	1	126.0	11.9
SMCJ80	SMCJ80C	80	88.96	108.8	1	1	143.2	10.5
SMCJ80A	SMCJ80CA	80	88.80	97.6	1	1	129.6	11.6
SMCJ85	SMCJ85C	85	94.40	115.0	1	1	151.0	9.9
SMCJ85A	SMCJ85CA	85	94.40	104.0	1	1	137.0	11.0
SMCJ90	SMCJ90C	90	100.00	122.0	1	1	160.0	9.4
SMCJ90A	SMCJ90CA	90	100.00	111.0	1	1	146.0	10.3
SMCJ100	SMCJ100C	100	111.00	136.0	1	1	179.0	8.4
SMCJ100A	SMCJ100CA	100	111.00	123.0	1	1	162.0	9.3
SMCJ110	SMCJ110C	110	122.00	149.0	1	1	196.0	7.7
SMCJ110A	SMCJ110CA	110	122.00	135.0	1	1	177.0	8.5
SMCJ120	SMCJ120C	120	133.00	163.0	1	1	214.0	7.0
SMCJ120A	SMCJ120CA	120	133.00	147.0	1	1	193.0	7.8
SMCJ130	SMCJ130C	130	144.00	176.0	1	1	231.0	6.5
SMCJ130A	SMCJ130CA	130	144.00	159.0	1	1	209.0	7.2
SMCJ140	SMCJ140C	140	155.68	190.4	1	1	250.6	6.0
SMCJ140A	SMCJ140CA	140	155.00	171.0	1	1	226.8	6.6
SMCJ150	SMCJ150C	150	167.00	204.0	1	1	268.0	5.6
SMCJ150A	SMCJ150CA	150	167.00	185.0	1	1	243.0	6.2
SMCJ160	SMCJ160C	160	178.00	218.0	1	1	287.0	5.2
SMCJ160A	SMCJ160CA	160	178.00	197.0	1	1	259.0	5.8
SMCJ170	SMCJ170C	170	189.00	231.0	1	1	304.0	4.9
SMCJ170A	SMCJ170CA	170	189.00	209.0	1	1	275.0	5.5
SMCJ180	SMCJ180C	180	200.16	244.8	1	1	322.2	4.7
SMCJ180A	SMCJ180CA	180	200.00	220.0	1	1	291.6	5.1
SMCJ190	SMCJ190C	190	211.28	258.4	1	1	340.1	4.4
SMCJ190A	SMCJ190CA	190	211.00	232.0	1	1	307.8	4.9
SMCJ200A	SMCJ200CA	200	224.00	247.0	1	1	324.0	4.6
SMCJ220A	SMCJ220CA	220	246.00	272.0	1	1	356.0	4.2
SMCJ250A	SMCJ250CA	250	279.00	309.0	1	1	405.0	3.7
SMCJ300A	SMCJ300CA	300	335.00	371.0	1	1	486.0	3.1
SMCJ350A	SMCJ350CA	350	391.00	432.0	1	1	567.0	2.6
SMCJ400A	SMCJ400CA	400	447.00	494.0	1	1	648.0	2.3
SMCJ440A	SMCJ440CA	440	492.00	543.0	1	1	713.0	2.1

Note:

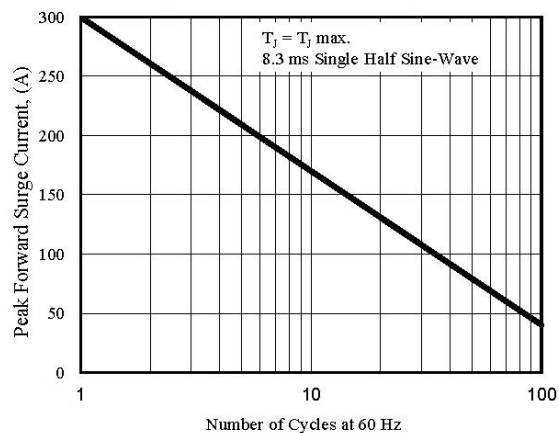
1. $T_A = 25^\circ\text{C}$ ambient temperature unless otherwise specified.
2. The available parts are "A" type only, the parts without A(V_{BR} is $\pm 10\%$) is not availed
3. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
4. For Bi-Directional device having VR of 10 volts and under, the IR limit is double

CHARACTERISTIC CURVES

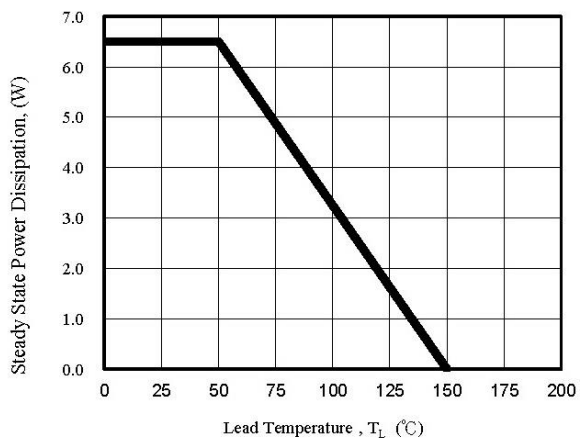
Pulse Derating Curve



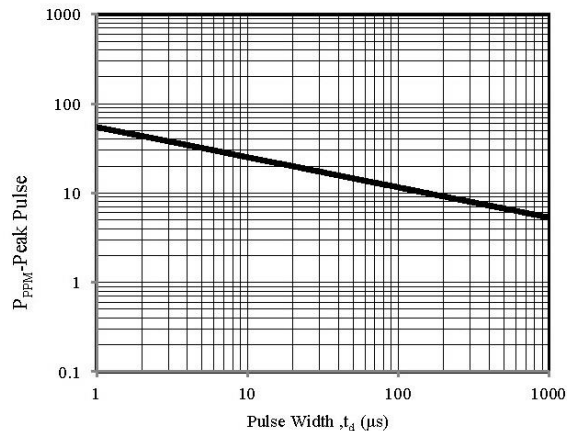
Maximum Non-Repetitive Surge Current



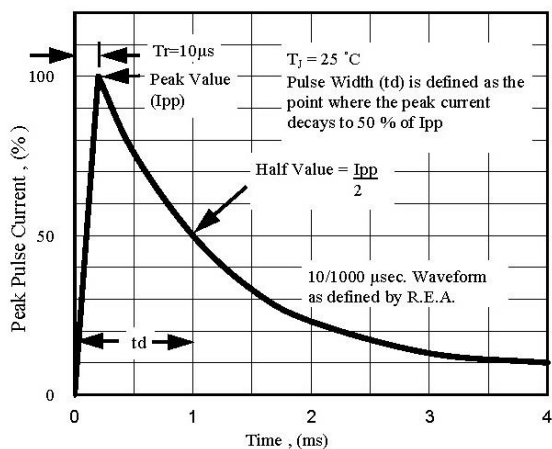
Steady State Power Derating Curve



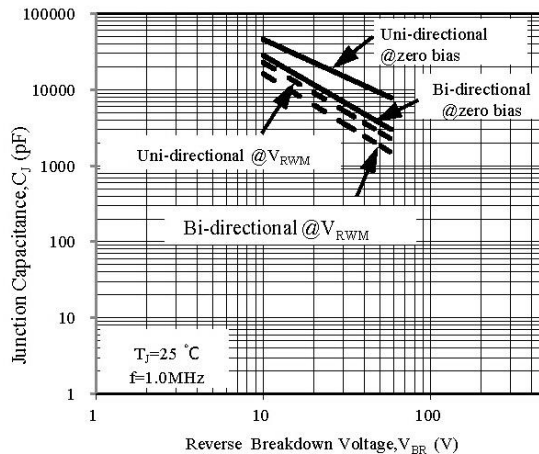
Peak Pulse Power Rating Curve



Pulse Waveform



Typical Junction Capacitance



*Specifications subject to change without notice.