

Transient Voltage Suppressors 400W DO-214AC

SMAJ Series

MERITEK

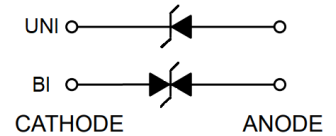
FEATURE

- 400W Peak Pulse Power (10/1000 μ s), Repetitive rate: 0.01%
- 5.0V to 440V Reverse Voltage
- Very Fast Response Time
- Excellent Clamping Capability
- Glass Passivated Chip
- Low Leakage
- UL Flammability Classification Rating: 94V-0



MECHANICAL DATA

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



MAXIMUM RATINGS

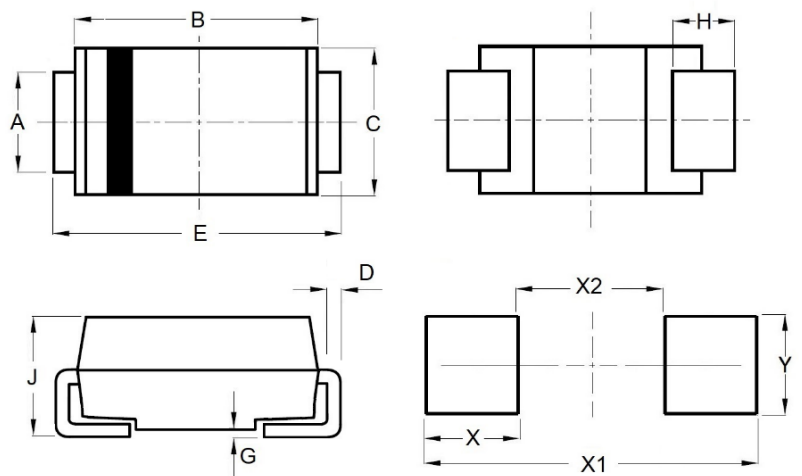
Parameter	Symbol	Value	Unit
Peak Power Dissipation With A 10/1000 μ s Waveform	P_{PPM}	400	W
Peak Pulse Current With A 10/1000 μ s Waveform	I_{PPM}	see next table	A
Power Dissipation On Infinite Heatsink At $T_L = 75^\circ\text{C}$	P_D	1.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	40	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 8.3 ms 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-214(SMA)

Item	Min (mm)	Max (mm)
A	1.23	1.63
B	4.10	4.55
C	2.51	2.76
D	0.15	0.30
E	4.87	5.22
G	0.02	0.20
H	0.75	1.51
J	1.96	2.26
X	2.07	
X1	5.80	
X2	1.66	
Y	2.06	



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ELECTRICAL CHARACTERISTICS

Part Number		Working Reverse Voltage	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
SMAJ5.0	SMAJ5.0C	5.0	6.40	7.30	10	800	9.6	41.67
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.00	10	800	9.2	43.48
SMAJ6.0	SMAJ6.0C	6.0	6.67	8.15	10	800	11.4	35.09
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.37	10	800	10.3	38.83
SMAJ6.5	SMAJ6.5C	6.5	7.22	8.82	10	500	12.3	32.52
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	500	11.2	35.71
SMAJ7.0	SMAJ7.0C	7.0	7.78	9.51	10	200	13.3	30.08
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.60	10	200	12.0	33.33
SMAJ7.5	SMAJ7.5C	7.5	8.33	10.20	1	100	14.3	27.97
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	100	12.9	31.01
SMAJ8.0	SMAJ8.0C	8.0	8.89	10.90	1	50	15.0	26.67
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1	50	13.6	29.41
SMAJ8.5	SMAJ8.5C	8.5	9.44	11.50	1	10	15.9	25.16
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.40	1	10	14.4	27.78
SMAJ9.0	SMAJ9.0C	9.0	10.00	12.20	1	5	16.9	23.67
SMAJ9.0A	SMAJ9.0CA	9.0	10.00	11.10	1	5	15.4	25.97
SMAJ10	SMAJ10C	10.0	11.10	13.60	1	5	18.8	21.28
SMAJ10A	SMAJ10CA	10.0	11.10	12.30	1	5	17.0	23.53
SMAJ11	SMAJ11C	11.0	12.20	14.90	1	1	20.1	19.90
SMAJ11A	SMAJ11CA	11.0	12.20	13.50	1	1	18.2	21.98
SMAJ12	SMAJ12C	12.0	13.30	16.30	1	1	22.0	18.18
SMAJ12A	SMAJ12CA	12.0	13.30	14.70	1	1	19.9	20.10
SMAJ13	SMAJ13C	13.0	14.40	17.60	1	1	23.8	16.81
SMAJ13A	SMAJ13CA	13.0	14.40	15.90	1	1	21.5	18.60
SMAJ14	SMAJ14C	14.0	15.60	19.10	1	1	25.8	15.50
SMAJ14A	SMAJ14CA	14.0	15.60	17.20	1	1	23.2	17.24
SMAJ15	SMAJ15C	15.0	16.70	20.40	1	1	26.9	14.87
SMAJ15A	SMAJ15CA	15.0	16.70	18.50	1	1	24.4	16.39
SMAJ16	SMAJ16C	16.0	17.80	21.80	1	1	28.8	13.89
SMAJ16A	SMAJ16CA	16.0	17.80	19.70	1	1	26.0	15.38
SMAJ17	SMAJ17C	17.0	18.90	23.10	1	1	30.5	13.11
SMAJ17A	SMAJ17CA	17.0	18.90	20.90	1	1	27.6	14.49
SMAJ18	SMAJ18C	18.0	20.00	24.40	1	1	32.2	12.42
SMAJ18A	SMAJ18CA	18.0	20.00	22.10	1	1	29.2	13.70
SMAJ19	SMAJ19C	19.0	21.13	25.76	1	1	34.0	11.76
SMAJ19A	SMAJ19CA	19.0	21.10	23.30	1	1	30.8	13.00
SMAJ20	SMAJ20C	20.0	22.20	27.10	1	1	35.8	11.17
SMAJ20A	SMAJ20CA	20.0	22.20	24.50	1	1	32.4	12.35
SMAJ22	SMAJ22C	22.0	24.40	29.80	1	1	39.4	10.15
SMAJ22A	SMAJ22CA	22.0	24.40	26.90	1	1	35.5	11.27
SMAJ24	SMAJ24C	24.0	26.70	32.60	1	1	43.0	9.30
SMAJ24A	SMAJ24CA	24.0	26.70	29.50	1	1	38.9	10.28
SMAJ26	SMAJ26C	26.0	28.90	35.30	1	1	46.6	8.58
SMAJ26A	SMAJ26CA	26.0	28.90	31.90	1	1	42.1	9.50
SMAJ28	SMAJ28C	28.0	31.10	38.00	1	1	50.0	8.00
SMAJ28A	SMAJ28CA	28.0	31.10	34.40	1	1	45.4	8.81
SMAJ30	SMAJ30C	30.0	33.30	40.70	1	1	53.5	7.48
SMAJ30A	SMAJ30CA	30.0	33.30	36.80	1	1	48.4	8.26
SMAJ33	SMAJ33C	33.0	36.70	44.90	1	1	59.0	6.78
SMAJ33A	SMAJ33CA	33.0	36.70	40.60	1	1	53.3	7.50
SMAJ36	SMAJ36C	36.0	40.00	48.90	1	1	64.3	6.22
SMAJ36A	SMAJ36CA	36.0	40.00	44.20	1	1	58.1	6.88
SMAJ40	SMAJ40C	40.0	44.40	54.30	1	1	71.4	5.60
SMAJ40A	SMAJ40CA	40.0	44.40	49.10	1	1	64.5	6.20
SMAJ43	SMAJ43C	43.0	47.80	58.40	1	1	76.7	5.22

ELECTRICAL CHARACTERISTICS

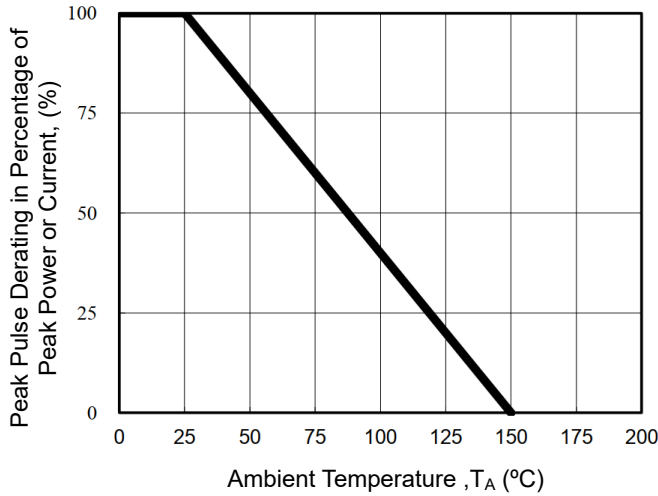
Part Number		Working Reverse Voltage	Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V _{RWM} (V)	V _{BR} (V) Min	V _{BR} (V)Max	I _T (mA)	I _R (uA) @ V _{RWM}	V _C (V) @ I _{PP}	I _{PP} (A) Max
SMAJ43A	SMAJ43CA	43.0	47.80	52.80	1	1	69.4	5.76
SMAJ45	SMAJ45C	45.0	50.00	61.10	1	1	80.3	4.98
SMAJ45A	SMAJ45CA	45.0	50.00	55.30	1	1	72.7	5.50
SMAJ48	SMAJ48C	48.0	53.30	65.10	1	1	85.5	4.68
SMAJ48A	SMAJ48CA	48.0	53.30	58.90	1	1	77.4	5.17
SMAJ51	SMAJ51C	51.0	56.70	69.30	1	1	91.1	4.39
SMAJ51A	SMAJ51CA	51.0	56.70	62.70	1	1	82.4	4.85
SMAJ54	SMAJ54C	54.0	60.00	73.30	1	1	96.3	4.15
SMAJ54A	SMAJ54CA	54.0	60.00	66.30	1	1	87.1	4.59
SMAJ58	SMAJ58C	58.0	64.40	78.70	1	1	103.0	3.88
SMAJ58A	SMAJ58CA	58.0	64.40	71.20	1	1	93.6	4.27
SMAJ60	SMAJ60C	60.0	66.70	81.50	1	1	107.0	3.74
SMAJ60A	SMAJ60CA	60.0	66.70	73.70	1	1	96.8	4.13
SMAJ64	SMAJ64C	64.0	71.10	86.90	1	1	114.0	3.51
SMAJ64A	SMAJ64CA	64.0	71.10	78.60	1	1	103.0	3.88
SMAJ70	SMAJ70C	70.0	77.80	95.10	1	1	125.0	3.20
SMAJ70A	SMAJ70CA	70.0	77.80	86.00	1	1	113.0	3.54
SMAJ75	SMAJ75C	75.0	83.30	102.00	1	1	134.0	2.99
SMAJ75A	SMAJ75CA	75.0	83.30	92.10	1	1	121.0	3.31
SMAJ78	SMAJ78C	78.0	86.70	106.00	1	1	139.0	2.88
SMAJ78A	SMAJ78CA	78.0	86.70	95.80	1	1	126.0	3.17
SMAJ80	SMAJ80C	80.0	88.96	108.80	1	1	143.2	2.79
SMAJ80A	SMAJ80CA	80.0	88.80	97.60	1	1	129.6	3.09
SMAJ85	SMAJ85C	85.0	94.40	115.00	1	1	151.0	2.65
SMAJ85A	SMAJ85CA	85.0	94.40	104.00	1	1	137.0	2.92
SMAJ90	SMAJ90C	90.0	100.00	122.00	1	1	160.0	2.50
SMAJ90A	SMAJ90CA	90.0	100.00	111.00	1	1	146.0	2.74
SMAJ100	SMAJ100C	100.0	111.00	136.00	1	1	179.0	2.23
SMAJ100A	SMAJ100CA	100.0	111.00	123.00	1	1	162.0	2.47
SMAJ110	SMAJ110C	110.0	122.00	149.00	1	1	196.0	2.04
SMAJ110A	SMAJ110CA	110.0	122.00	135.00	1	1	177.0	2.26
SMAJ120	SMAJ120C	120.0	133.00	163.00	1	1	214.0	1.87
SMAJ120A	SMAJ120CA	120.0	133.00	147.00	1	1	193.0	2.07
SMAJ130	SMAJ130C	130.0	144.00	176.00	1	1	231.0	1.73
SMAJ130A	SMAJ130CA	130.0	144.00	159.00	1	1	209.0	1.91
SMAJ140	SMAJ140C	140.0	155.68	190.40	1	1	250.6	1.60
SMAJ140A	SMAJ140CA	140.0	155.00	171.00	1	1	226.8	1.76
SMAJ150	SMAJ150C	150.0	167.00	204.00	1	1	268.0	1.49
SMAJ150A	SMAJ150CA	150.0	167.00	185.00	1	1	243.0	1.65
SMAJ160	SMAJ160C	160.0	178.00	218.00	1	1	287.0	1.39
SMAJ160A	SMAJ160CA	160.0	178.00	197.00	1	1	259.0	1.54
SMAJ170	SMAJ170C	170.0	189.00	231.00	1	1	304.0	1.32
SMAJ170A	SMAJ170CA	170.0	189.00	209.00	1	1	275.0	1.45
SMAJ180	SMAJ180C	180.0	200.16	244.80	1	1	322.2	1.24
SMAJ180A	SMAJ180CA	180.0	200.00	220.00	1	1	291.6	1.37
SMAJ190	SMAJ190C	190.0	211.28	258.40	1	1	340.1	1.18
SMAJ190A	SMAJ190CA	190.0	211.00	232.00	1	1	307.8	1.30
SMAJ200A	SMAJ200CA	200.0	224.00	247.00	1	1	324.0	1.23
SMAJ220A	SMAJ220CA	220.0	246.00	272.00	1	1	356.0	1.12
SMAJ250A	SMAJ250CA	250.0	279.00	309.00	1	1	405.0	0.99
SMAJ300A	SMAJ300CA	300.0	335.00	371.00	1	1	486.0	0.82
SMAJ350A	SMAJ350CA	350.0	391.00	432.00	1	1	567.0	0.71
SMAJ400A	SMAJ400CA	400.0	447.00	494.00	1	1	648.0	0.62
SMAJ440A	SMAJ440CA	440.0	492.00	543.00	1	1	713.0	0.56

Note:

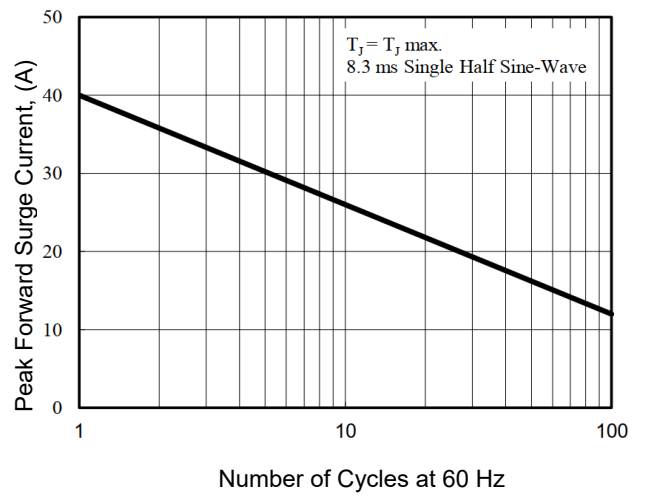
1. T_A = 25°C ambient temperature unless otherwise specified.
2. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
3. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
4. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit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

CHARACTERISTIC CURVES

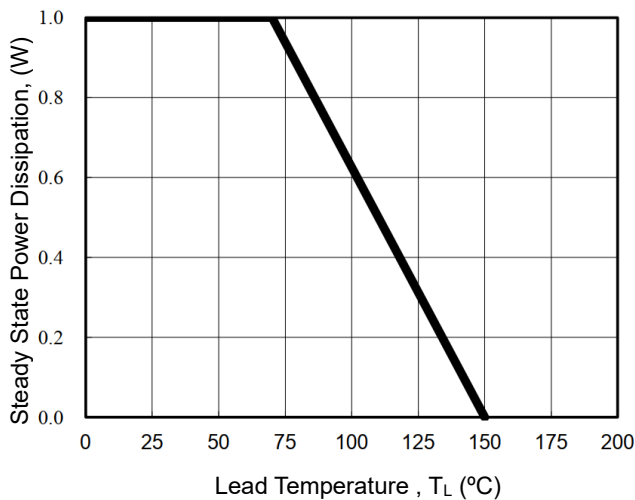
Pulse Derating Curve



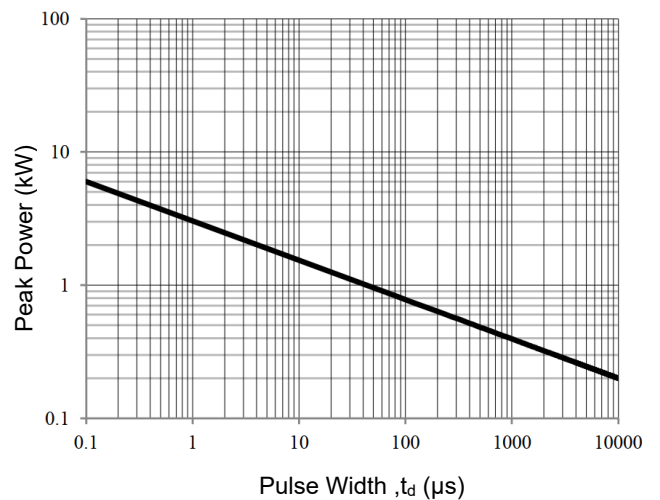
Maximum Non-Repetitive Surge Current



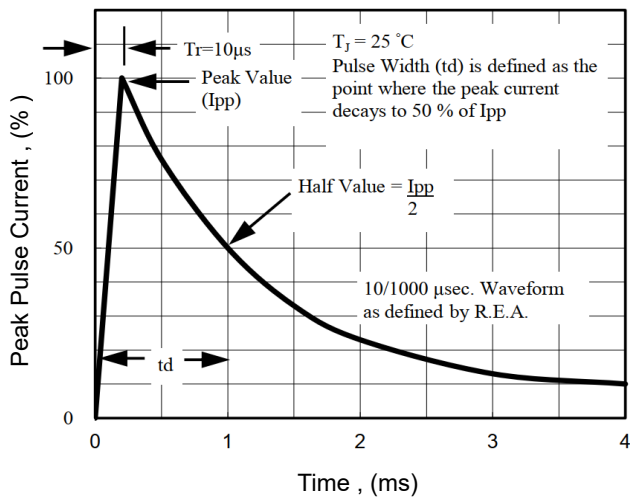
Steady State Power Derating Curve



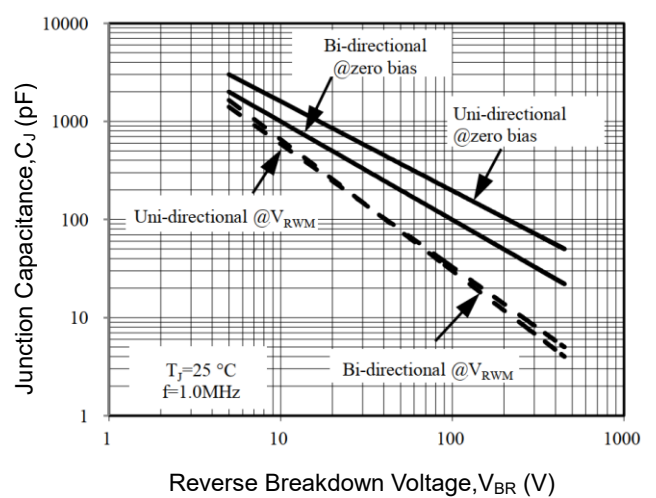
Peak Pulse Power Rating Curve



Pulse Waveform



Typical Junction Capacitance



*Specifications subject to change without notice.