

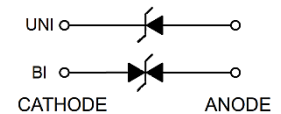
Transient Voltage Suppressors 400W DO-214AC AEC-Q101

SMAJ-A Series

MERITEK

FEATURE

- 5.0V to 440V Standoff Voltage
- 400W Peak Pulse Power Capability (10/1000 μ s), Repetitive Rate:0.01%
- Glass Passivated Die Construction
- Excellent Clamping Capability
- Fast Response Time
- UL Safety Approved Certification No: E223045
- AEC-Q101 Compliance



MECHANICAL DATA

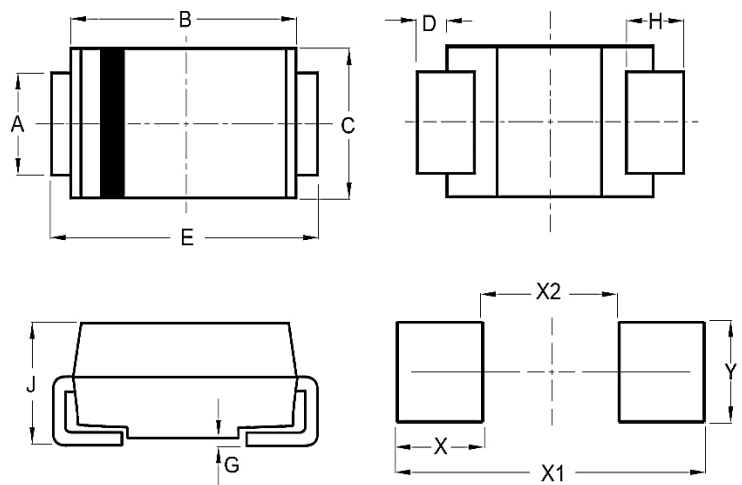
- Case: DO-214AC(SMA), Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- UL Flammability Classification Rating: 94V-0
- Polarity: Color Band Denotes Cathode End Except Bipolar

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Peak Power Dissipation with 10/1000 μ s Waveform	P_{PPM}	400	W
Peak Pulse Current with 10/1000 μ s Waveform	I_{PP}	See Table	A
Power Dissipation at $T_L = 75^\circ\text{C}$	P_D	1.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave	I_{FSM}	40	A
Maximum Instantaneous Forward Voltage at $I_F=50\text{A}$, Unidirectional Only	V_F	3.5/6.5	V
Typical Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	120	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

DIMENSIONS

Item	Min (mm)	Max (mm)
A	1.300	1.700
B	3.990	4.500
C	2.450	3.000
D	0.152	0.305
E	4.800	5.280
G	0.000	0.203
H	0.760	1.520
J	1.980	2.420
X		1.50
X1		5.80
X2		2.80
Y		1.60



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ELECTRICAL CHARACTERISTICS

Part Number		Reverse Standoff Voltage	Max. Reverse Leakage Current @V _{RWM}	Breakdown Voltage @ I _T		Test Current	Max. Clamping Voltage @ I _{PP}	
Uni-Polar	Bi-Polar	V _{RWM} (V)	I _R (μA)	V _{BR,MIN} (V)	V _{BR,MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)
SMAJ5.0A-A	SMAJ5.0CA-A	5.0	800	6.40	7.00	10	9.2	43.5
SMAJ6.0A-A	SMAJ6.0CA-A	6.0	800	6.67	7.37	10	10.3	38.0
SMAJ6.5A-A	SMAJ6.5CA-A	6.5	500	7.22	7.98	10	11.2	35.7
SMAJ7.0A-A	SMAJ7.0CA-A	7.0	200	7.78	8.60	10	12.0	33.3
SMAJ7.5A-A	SMAJ7.5CA-A	7.5	100	8.33	9.21	1.0	12.9	31.0
SMAJ8.0A-A	SMAJ8.0CA-A	8.0	50	8.89	9.83	1.0	13.6	29.4
SMAJ8.5A-A	SMAJ8.5CA-A	8.5	20	9.44	10.40	1.0	14.4	27.7
SMAJ9.0A-A	SMAJ9.0CA-A	9.0	10	10.00	11.10	1.0	15.4	26.0
SMAJ10A-A	SMAJ10CA-A	10.0	5	11.10	12.30	1.0	17.0	23.5
SMAJ11A-A	SMAJ11CA-A	11.0	1	12.20	13.50	1.0	18.2	22.0
SMAJ12A-A	SMAJ12CA-A	12.0	1	13.30	14.70	1.0	19.9	20.1
SMAJ13A-A	SMAJ13CA-A	13.0	1	14.40	15.90	1.0	21.5	18.6
SMAJ14A-A	SMAJ14CA-A	14.0	1	15.60	17.20	1.0	23.2	17.2
SMAJ15A-A	SMAJ15CA-A	15.0	1	16.70	18.50	1.0	24.4	16.4
SMAJ16A-A	SMAJ16CA-A	16.0	1	17.80	19.70	1.0	26.0	15.4
SMAJ17A-A	SMAJ17CA-A	17.0	1	18.90	20.90	1.0	27.6	14.5
SMAJ18A-A	SMAJ18CA-A	18.0	1	20.00	22.10	1.0	29.2	13.7
SMAJ20A-A	SMAJ20CA-A	20.0	1	22.20	24.50	1.0	32.4	12.3
SMAJ22A-A	SMAJ22CA-A	22.0	1	24.40	26.90	1.0	35.3	11.2
SMAJ24A-A	SMAJ24CA-A	24.0	1	26.70	29.50	1.0	38.9	10.3
SMAJ26A-A	SMAJ26CA-A	26.0	1	28.90	31.90	1.0	42.1	9.5
SMAJ28A-A	SMAJ28CA-A	28.0	1	31.10	34.40	1.0	45.4	8.8
SMAJ30A-A	SMAJ30CA-A	30.0	1	33.30	36.80	1.0	48.4	8.3
SMAJ33A-A	SMAJ33CA-A	33.0	1	33.70	40.60	1.0	53.3	7.5
SMAJ36A-A	SMAJ36CA-A	36.0	1	36.70	44.90	1.0	58.1	6.9
SMAJ40A-A	SMAJ40CA-A	40.0	1	40.00	44.20	1.0	64.5	6.2
SMAJ43A-A	SMAJ43CA-A	43.0	1	44.40	54.30	1.0	69.4	5.8
SMAJ45A-A	SMAJ45CA-A	45.0	1	47.80	58.40	1.0	72.7	5.5
SMAJ48A-A	SMAJ48CA-A	48.0	1	53.30	58.90	1.0	77.4	5.2
SMAJ51A-A	SMAJ51CA-A	51.0	1	56.70	62.70	1.0	82.4	4.9
SMAJ54A-A	SMAJ54CA-A	54.0	1	60.00	66.30	1.0	87.1	4.6
SMAJ58A-A	SMAJ58CA-A	58.0	1	64.40	71.20	1.0	93.6	4.3
SMAJ60A-A	SMAJ60CA-A	60.0	1	66.70	73.70	1.0	96.8	4.1
SMAJ64A-A	SMAJ64CA-A	64.0	1	71.10	78.60	1.0	103.0	3.9
SMAJ70A-A	SMAJ70CA-A	70.0	1	77.80	86.00	1.0	113.0	3.5
SMAJ75A-A	SMAJ75CA-A	75.0	1	83.30	92.10	1.0	121.0	3.3
SMAJ78A-A	SMAJ78CA-A	78.0	1	86.70	95.80	1.0	126.0	3.2
SMAJ85A-A	SMAJ85CA-A	85.0	1	94.40	104.00	1.0	137.0	2.9
SMAJ90A-A	SMAJ90CA-A	90.0	1	100.00	111.00	1.0	146.0	2.7
SMAJ100A-A	SMAJ100CA-A	100.0	1	111.00	123.00	1.0	162.0	2.5
SMAJ110A-A	SMAJ110CA-A	110.0	1	122.00	135.00	1.0	177.0	2.3
SMAJ120A-A	SMAJ120CA-A	120.0	1	133.00	147.00	1.0	193.0	2.1
SMAJ130A-A	SMAJ130CA-A	130.0	1	144.00	159.00	1.0	209.0	1.9
SMAJ150A-A	SMAJ150CA-A	150.0	1	167.00	185.00	1.0	243.0	1.6
SMAJ160A-A	SMAJ160CA-A	160.0	1	178.00	197.00	1.0	259.0	1.5

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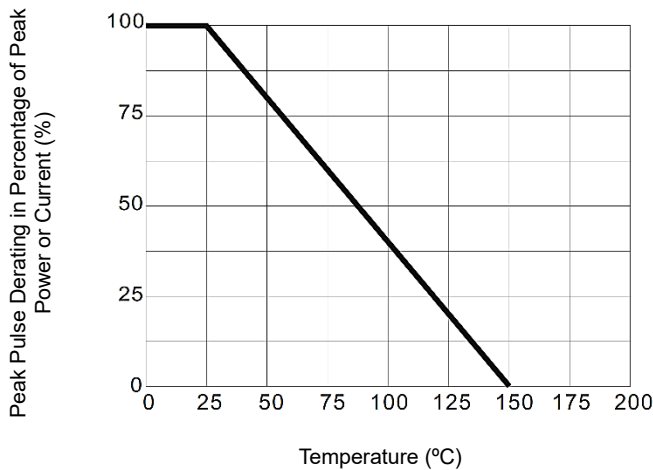
Part Number		Reverse Standoff Voltage	Max. Reverse Leakage Current @ V_{RWM}	Breakdown Voltage @ I_T		Test Current	Max. Clamping Voltage @ I_{PP}	
Uni-Polar	Bi-Polar	V_{RWM} (V)	I_R (μ A)	$V_{BR,MIN}$ (V)	$V_{BR,MAX}$ (V)	I_T (mA)	V_C (V)	I_{PP} (A)
SMAJ170A-A	SMAJ170CA-A	170.0	1	189.00	209.00	1.0	275.0	1.5
SMAJ180A-A	SMAJ180CA-A	180.0	1	201.00	222.00	1.0	292.0	1.4
SMAJ200A-A	SMAJ200CA-A	200.0	1	224.00	247.00	1.0	324.0	1.2
SMAJ220A-A	SMAJ220CA-A	220.0	1	246.00	272.00	1.0	356.0	1.1
SMAJ250A-A	SMAJ250CA-A	250.0	1	279.00	309.00	1.0	405.0	1.0
SMAJ300A-A	SMAJ300CA-A	300.0	1	335.00	371.00	1.0	486.0	0.8
SMAJ350A-A	SMAJ350CA-A	350.0	1	391.00	432.00	1.0	567.0	0.7
SMAJ400A-A	SMAJ400CA-A	400.0	1	447.00	494.00	1.0	648.0	0.6
SMAJ440A-A	SMAJ440CA-A	440.0	1	492.00	543.00	1.0	713.0	0.6

Note:

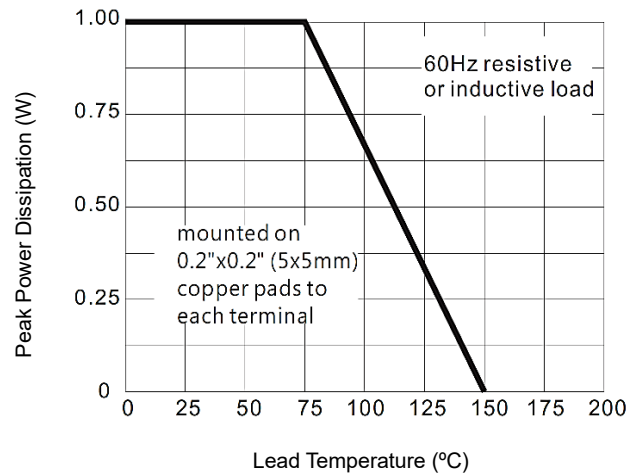
1. Non-repetitive current pulse and derated above $T_A=25^{\circ}\text{C}$.
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3. $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for devices of $V_{BR} > 201\text{V}$.
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 $0.2 \times 0.2 \text{ inch}^2$ ($5.0 \times 5.0 \text{ mm}^2$)
7. All terms and symbols are consistent with ANS/IEEE C62.35

CHARACTERISTIC CURVES

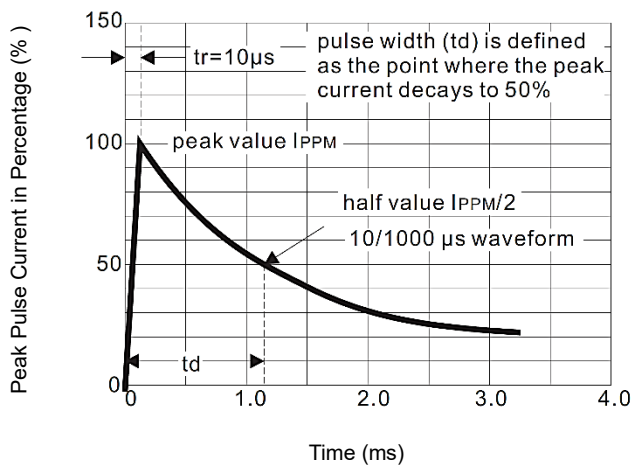
Pulse Derating Curve



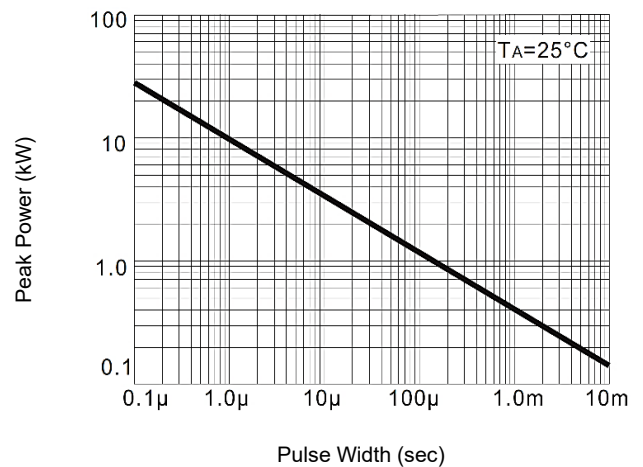
Steady State Pulse Derating Curve



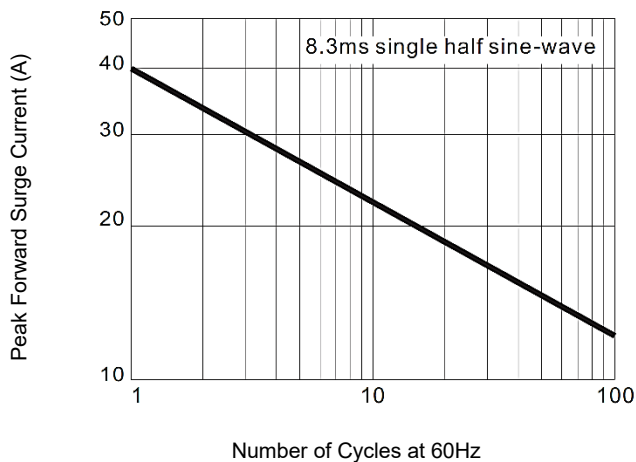
Pulse Waveform



Peak Pulse Power Rating Curve



Maximum Non-Repetitive Surge Current



Typical Junction Capacitance

