

Surface Mount Transient Voltage Suppressor

SMAJ SERIES

Diodes Features

- ◆ Excellent clamping capability
- ◆ Low dynamic impedance
- ◆ Solder dip 260 °C max. 10 s, per JESD 22-B106

Mechanical Data

Case: DO-214AC (SMA) Molded plastic body

Terminals: Tin plated leads, solderable per J-STD- 002
and JESD22-B102

Mounting Position: Any



Maximum Ratings & Electrical Characteristics

Ratings at $T_A = 25^\circ\text{C}$ unless otherwise specified

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1) (2)	P_{PPM}	W	400
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$ (2)	P_D	W	1.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (2)	I_{FSM}	A	40
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$	-55 to +150
Maximum instantaneous forward voltage at 25A for unidirectional only(3)	V_{FM}	V	3.5/5.0
Junction to ambient Junction to lead	$R_{\theta JA}$	$^\circ\text{C/W}$	120
	$R_{\theta JL}$	$^\circ\text{C/W}$	30

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
- (3) $V_F=3.5\text{V}$ Max for devices of $V_{BR} \leq 220\text{v}$, and $V_F=5.0\text{v}$ Max for devices of $V_{BR} > 220\text{v}$.



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Part No.		Peak Power Dissipation 10/1000μ sec(W)	Reverse Stand-Off Voltage V _{RWM} (V)	Breakdown Voltage V _{BR} (V) Min @ I _T	Breakdown Voltage V _{BR} (V) Max @ I _T	Test Current I _T (mA)	Max Clamping Voltage V _C (V)@ I _{PP}	Peak Pulse Current I _{PP} (A)	Reverse Leakage I _R (μA) @ V _{RWM}
SMAJ5.0A	SMAJ5.0CA	400	5.0	6.40	7.00	10	9.2	43.47	800
SMAJ6.0A	SMAJ6.0CA	400	6.0	6.67	7.37	10	10.3	38.83	800
SMAJ6.5A	SMAJ6.5CA	400	6.5	7.22	7.98	10	11.2	35.71	500
SMAJ7.0A	SMAJ7.0CA	400	7.0	7.78	8.60	10	12.0	33.33	200
SMAJ7.5A	SMAJ7.5CA	400	7.5	8.33	9.21	1	12.9	31.00	100
SMAJ8.0A	SMAJ8.0CA	400	8.0	8.89	9.83	1	13.6	29.41	50
SMAJ8.5A	SMAJ8.5CA	400	8.5	9.44	10.40	1	14.4	27.77	10
SMAJ9.0A	SMAJ9.0CA	400	9.0	10.00	11.10	1	15.4	25.97	5
SMAJ10A	SMAJ10CA	400	10.0	11.10	12.30	1	17.0	23.53	5
SMAJ11A	SMAJ11CA	400	11.0	12.20	13.50	1	18.2	21.98	5
SMAJ12A	SMAJ12CA	400	12.0	13.30	14.70	1	19.9	20.10	5
SMAJ13A	SMAJ13CA	400	13.0	14.40	15.90	1	21.5	18.60	5
SMAJ14A	SMAJ14CA	400	14.0	15.60	17.20	1	23.2	17.24	5
SMAJ15A	SMAJ15CA	400	15.0	16.70	18.50	1	24.4	16.39	5
SMAJ16A	SMAJ16CA	400	16.0	17.80	19.70	1	26.0	15.38	5
SMAJ17A	SMAJ17CA	400	17.0	18.90	20.90	1	27.6	14.49	5
SMAJ18A	SMAJ18CA	400	18.0	20.00	22.10	1	29.2	13.70	5
SMAJ19A	SMAJ19CA	400	19.0	21.10	23.30	1	30.8	13.00	5
SMAJ20A	SMAJ20CA	400	20.0	22.20	24.50	1	32.4	12.35	5
SMAJ22A	SMAJ22CA	400	22.0	24.40	26.90	1	35.5	11.27	5
SMAJ24A	SMAJ24CA	400	24.0	26.70	29.50	1	38.9	10.28	5
SMAJ26A	SMAJ26CA	400	26.0	28.90	31.90	1	42.1	9.50	5
SMAJ28A	SMAJ28CA	400	28.0	31.10	34.40	1	45.4	8.81	5
SMAJ30A	SMAJ30CA	400	30.0	33.30	36.80	1	48.4	8.26	5
SMAJ33A	SMAJ33CA	400	33.0	36.70	40.60	1	53.3	7.50	5
SMAJ36A	SMAJ36CA	400	36.0	40.00	44.20	1	58.1	6.88	5
SMAJ40A	SMAJ40CA	400	40.0	44.40	49.10	1	64.5	6.20	5
SMAJ43A	SMAJ43CA	400	43.0	47.80	52.80	1	69.4	5.76	5
SMAJ45A	SMAJ45CA	400	45.0	50.00	55.30	1	72.7	5.50	5
SMAJ48A	SMAJ48CA	400	48.0	53.30	58.90	1	77.4	5.17	5
SMAJ51A	SMAJ51CA	400	51.0	56.70	62.70	1	82.4	4.85	5
SMAJ54A	SMAJ54CA	400	54.0	60.00	66.30	1	87.1	4.59	5
SMAJ58A	SMAJ58CA	400	58.0	64.40	71.20	1	93.6	4.27	5
SMAJ60A	SMAJ60CA	400	60.0	66.70	73.70	1	96.8	4.13	5
SMAJ64A	SMAJ64CA	400	64.0	71.10	78.60	1	103.0	3.88	5
SMAJ70A	SMAJ70CA	400	70.0	77.80	86.00	1	113.0	3.54	5
SMAJ75A	SMAJ75CA	400	75.0	83.30	92.10	1	121.0	3.31	5
SMAJ78A	SMAJ78CA	400	78.0	86.70	95.80	1	126.0	3.17	5
SMAJ80A	SMAJ80CA	400	80.0	88.80	97.60	1	129.6	3.09	5
SMAJ85A	SMAJ85CA	400	85.0	94.40	104.00	1	137.0	2.92	5
SMAJ90A	SMAJ90CA	400	90.0	100.00	111.00	1	146.0	2.74	5
SMAJ100A	SMAJ100CA	400	100.0	111.00	123.00	1	162.0	2.47	5
SMAJ110A	SMAJ110CA	400	110.0	122.00	135.00	1	177.0	2.26	5
SMAJ120A	SMAJ120CA	400	120.0	133.00	147.00	1	193.0	2.07	5
SMAJ130A	SMAJ130CA	400	130.0	144.00	159.00	1	209.0	1.91	5
SMAJ140A	SMAJ140CA	400	140.0	155.00	171.00	1	226.8	1.76	5
SMAJ150A	SMAJ150CA	400	150.0	167.00	185.00	1	243.0	1.65	5
SMAJ160A	SMAJ160CA	400	160.0	178.00	197.00	1	259.0	1.54	5
SMAJ170A	SMAJ170CA	400	170.0	189.00	209.00	1	275.0	1.45	5
SMAJ180A	SMAJ180CA	400	180.0	200.00	220.00	1	291.6	1.37	5
SMAJ190A	SMAJ190CA	400	190.0	211.00	232.00	1	307.8	1.30	5
SMAJ200A	SMAJ200CA	400	200.0	224.00	247.00	1	324.0	1.23	5
SMAJ220A	SMAJ220CA	400	220.0	246.00	272.00	1	356.0	1.12	5
SMAJ250A	SMAJ250CA	400	250.0	279.00	309.00	1	405.0	0.99	5
SMAJ300A	SMAJ300CA	400	300.0	335.00	371.00	1	486.0	0.82	5
SMAJ350A	SMAJ350CA	400	350.0	391.00	432.00	1	567.0	0.71	5
SMAJ400A	SMAJ400CA	400	400.0	447.00	494.00	1	648.0	0.62	5
SMAJ440A	SMAJ440CA	400	440.0	492.00	543.00	1	713.0	0.56	5

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Typical Characteristics

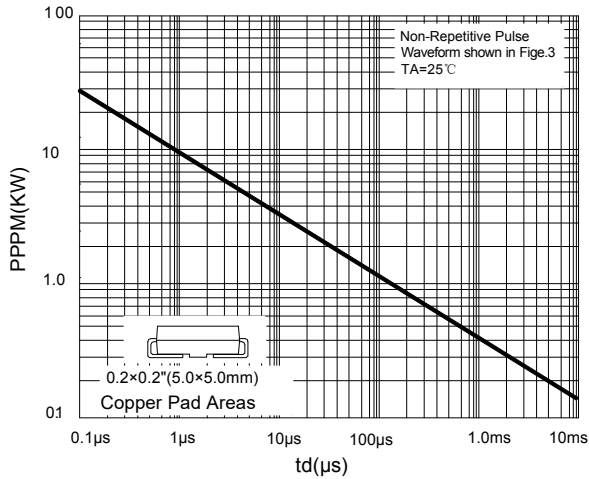


FIG1: Peak Pulse Power Rating Curve

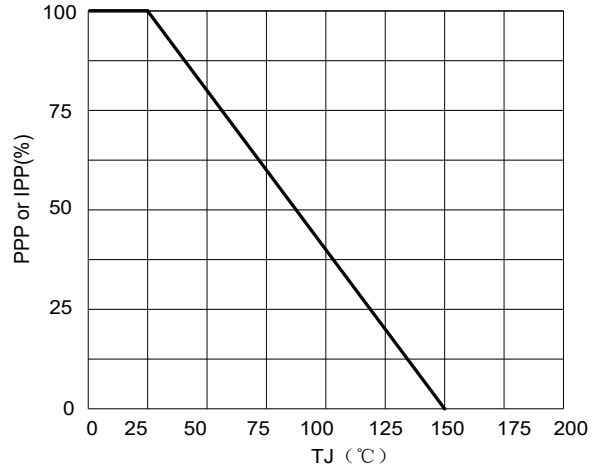


FIG2: Pulse Power or Current vs. Initial Junction Temperature

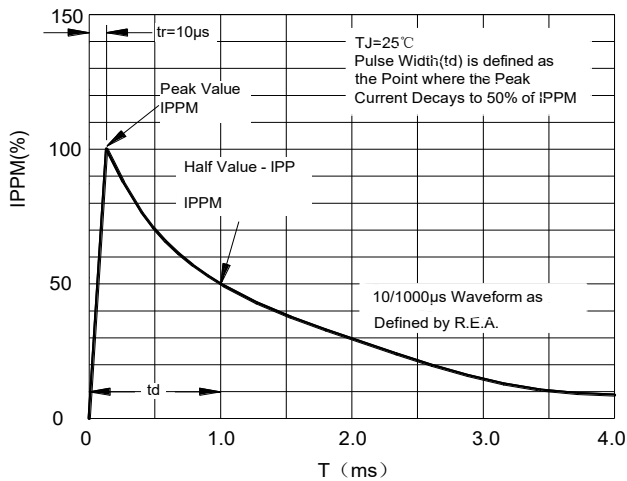


FIG3: Pulse Waveform

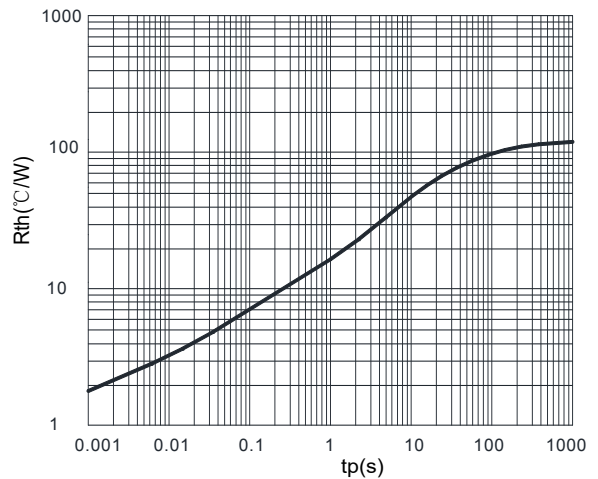


FIG4: Typical Transient Thermal Impedance

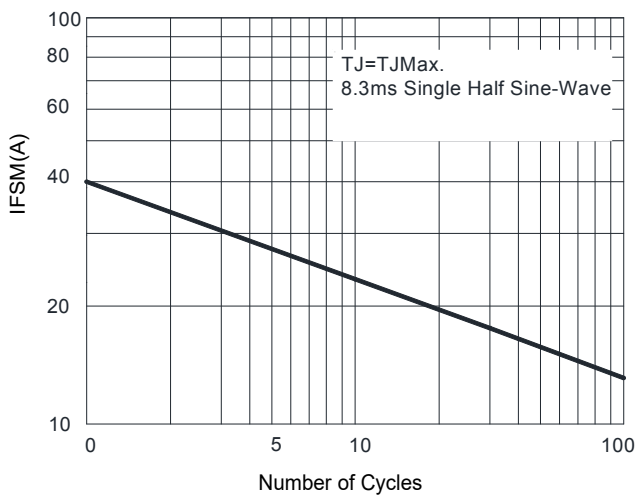


FIG5: Maximum Non-Repetitive Surge Current

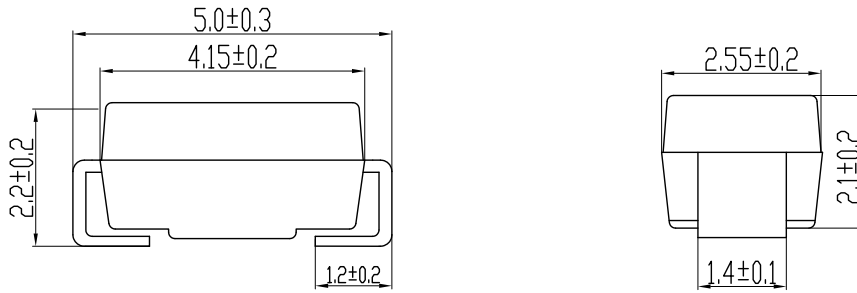


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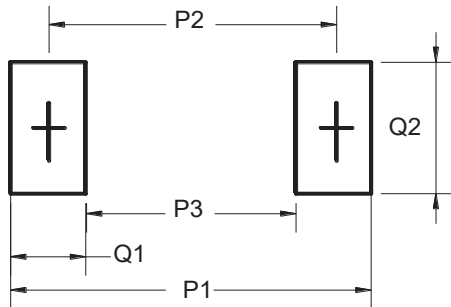
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Package Outline Dimensions(unit:mm)

DO-214AC (SMA)



Mounting Pad Layout(unit:mm)



Dim	Millimeters
P1	6.50
P2	4.00
P3	1.50
Q1	2.50
Q2	1.70

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