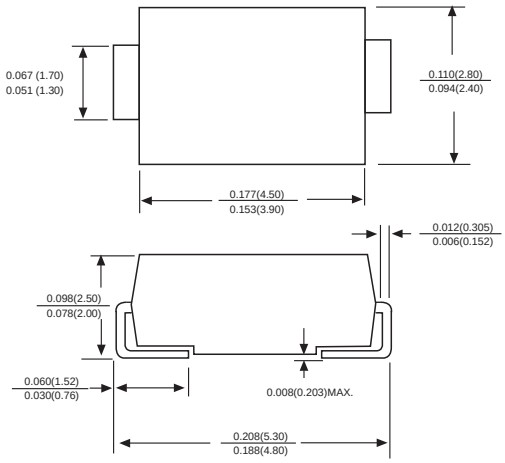
SMAJ5.0(C)A~SMAJ220(C)A

400W Surface Mount Transient Voltage Suppressors

Features

DO-214AC/SMA

- Optimzed for LAN protection applications
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 400w peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time:typically less than 1.0ps from 0v to V_{BR}min
- High temperature soldering guaranteed: 260°C/10S at terminals



Dimensions in inches and (millimeters)

Mechanical Data

Case : Molded plastic body
Terminals : Solder plated, solderable per MIL-STD-750,Method 2026
Polarity : Polarity symbol marking on body
Mounting Position : Any
Weight : 0.0023 ounce, 0.07 grams

Maximum Ratings And Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	SYMBOLS	VALUE	UNITS
Peak pulse power dissipation with a 10/1000μs wavetorm(NOTE 1,2,4,FIG.1)	P_{PPM}	Minimum 400	Watts
Peak forward surge current (Note 3)	I_{FSM}	40.0	Amps
Peak pulse current with a 10/1000μs waveform(NOTE 1,2,5)Fig.2	I_{PPM}	See Table 1	Amps
Steady State Power Dissipation(Note 4)	$P_{M(AV)}$	1.0	Watts
Operating junction and storage temperature range	T_{STG},T_J	-55 to + 150	°C

Notes:1.Non-repetitive current pulse,per Fig.3 and derated above T_A=25°C per Fig.2

2.Mounted on 5.0mm copper pads to each terminal

3.Measured on 8.3ms single half sine-wine.For uni-directional devices only.

4.Lead temperature at 75°C=T_L

5.Peak pulse power waveform is 10/1000μs

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Device	Working Peak Reverse Voltage V_{WM}(Volts)	Breakdown Voltage $V_{(BR)}$ (Volts) at I_T		Test Current I_T(mA)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)(NOTE5)	Maximum Peak Pulse Reverse Current I_{PPM}(NOTE5) (Amps)	Maximum Reverse Leakage a V_{WM} I_D(μA)
		MIN	MAX				
SMAJ5.0(C)	5.0	6.40	7.55	10	9.6	41.6	800
SMAJ5.0(C)A	5.0	6.40	7.25	10	9.2	43.5	800
SMAJ6.0(C)	6.0	6.67	8.45	10	11.4	35.1	800
SMAJ6.0(C)A	6.0	6.67	7.67	10	10.3	38.8	800
SMAJ6.5(C)	6.5	7.22	9.14	10	12.3	32.5	500
SMAJ6.5(C)A	6.5	7.22	8.3	10	11.2	35.7	500
SMAJ7.0(C)	7.0	7.78	9.86	10	13.3	30.1	200
SMAJ7.0(C)A	7.0	7.78	8.95	10	12.0	33.3	200
SMAJ7.5(C)	7.5	8.33	10.67	1.0	14.3	28.0	100
SMAJ7.5(C)A	7.5	8.33	9.58	1.0	12.9	31.0	100
SMAJ8.0(C)	8.0	8.89	11.3	1.0	15.0	26.5	50.0
SMAJ8.0(C)A	8.0	8.89	10.23	1.0	13.6	29.4	50.0
SMAJ8.5(C)	8.5	9.44	11.92	1.0	15.9	25.1	10.0
SMAJ8.5(C)A	8.5	9.44	10.82	1.0	14.4	27.7	10.0
SMAJ9.0(C)	9.0	10.0	12.6	1.0	16.9	23.6	5.0
SMAJ9.0(C)A	9.0	10.0	11.5	1.0	15.4	26.0	5.0
SMAJ10(C)	10.00	11.1	14.1	1.0	18.8	21.2	5.0
SMAJ10(C)A	10.00	11.1	12.8	1.0	17.0	23.5	5.0
SMAJ11(C)	11.00	12.2	15.4	1.0	20.1	20.0	5.0
SMAJ11(C)A	11.00	12.2	14	1.0	18.2	22.0	5.0
SMAJ12(C)	12.00	13.3	16.9	1.0	22.0	18.1	5.0
SMAJ12(C)A	12.00	13.3	15.3	1.0	19.9	20.1	5.0
SMAJ13(C)	13.00	14.4	18.2	1.0	23.8	16.8	5.0
SMAJ13(C)A	13.00	14.4	16.5	1.0	21.5	18.6	5.0
SMAJ14(C)	14.00	15.6	19.8	1.0	25.8	15.5	5.0
SMAJ14(C)A	14.00	15.6	17.9	1.0	23.2	17.2	5.0
SMAJ15(C)	15.00	16.7	21.1	1.0	26.9	14.8	5.0
SMAJ15(C)A	15.00	16.7	19.2	1.0	24.4	16.4	5.0
SMAJ16(C)	16.00	17.8	22.6	1.0	28.8	13.8	5.0
SMAJ16(C)A	16.00	17.8	20.5	1.0	26.0	15.3	5.0
SMAJ17(C)	17.00	18.9	23.9	1.0	30.5	13.1	5.0
SMAJ17(C)A	17.00	18.9	21.7	1.0	27.6	14.5	5.0
SMAJ18(C)	18.00	20.0	25.3	1.0	32.2	12.4	5.0
SMAJ18(C)A	18.00	20.0	23.3	1.0	29.2	13.7	5.0
SMAJ20(C)	20.00	22.2	28.1	1.0	35.8	11.1	5.0
SMAJ20(C)A	20.00	22.2	25.5	1.0	32.4	12.3	5.0
SMAJ22(C)	22.00	24.4	30.9	1.0	39.4	10.1	5.0
SMAJ22(C)A	22.00	24.4	28	1.0	35.5	11.2	5.0
SMAJ24(C)	24.00	26.7	33.8	1.0	43.0	9.3	5.0
SMAJ24(C)A	24.00	26.7	30.7	1.0	38.9	10.3	5.0
SMAJ26(C)	26.00	28.9	36.6	1.0	46.6	8.6	5.0
SMAJ26(C)A	26.00	28.9	33.2	1.0	42.1	9.5	5.0
SMAJ28(C)	28.00	31.1	39.4	1.0	50.0	8.0	5.0
SMAJ28(C)A	28.00	31.1	35.8	1.0	45.4	8.8	5.0
SMAJ30(C)	30.00	33.3	42.2	1.0	53.5	7.5	5.0
SMAJ30(C)A	30.00	33.3	38.3	1.0	48.4	8.3	5.0
SMAJ33(C)	33.00	36.7	46.5	1.0	59.0	6.8	5.0
SMAJ33(C)A	33.00	36.7	42.2	1.0	53.3	7.5	5.0
SMAJ36(C)	36.00	40.0	50.7	1.0	64.3	6.2	5.0
SMAJ36(C)A	36.00	40.0	46.0	1.0	58.1	6.9	5.0
SMAJ40(C)	40.00	44.4	56.3	1.0	71.4	5.6	5.0
SMAJ40(C)A	40.00	44.4	51.1	1.0	64.5	6.2	5.0

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Device	Working Peak Reverse Voltage VWM(Volts)	Breakdown Voltage V(BR) (Volts) at IT		Test Current IT(mA)	Maximum Clamping Voltage at IPPM Vc (Volts)	Maximum Peak Pulse Reverse Current IPPM(NOTE5) (Amps)	Maximum Reverse Leakage a VWM ID(μA)
		MIN	MAX				
SMAJ43(C)	43.00	47.8	60.5	1.0	76.7	5.2	5.0
SMAJ43(C)A	43.00	47.8	54.9	1.0	69.4	5.7	5.0
SMAJ45(C)	45.00	50.0	63.3	1.0	80.3	5.0	5.0
SMAJ45(C)A	45.00	50.0	57.5	1.0	72.7	5.5	5.0
SMAJ48(C)	48.00	53.3	67.5	1.0	85.5	4.7	5.0
SMAJ48(C)A	48.00	53.3	61.3	1.0	77.4	5.2	5.0
SMAJ51(C)	51.00	56.7	71.8	1.0	91.1	4.4	5.0
SMAJ51(C)A	51.00	56.7	65.2	1.0	82.4	4.9	5.0
SMAJ54(C)	54.00	60.0	76.0	1.0	96.3	4.2	5.0
SMAJ54(C)A	54.00	60.0	69.0	1.0	87.1	4.6	5.0
SMAJ58(C)	58.00	64.4	81.6	1.0	103.0	3.9	5.0
SMAJ58(C)A	58.00	64.4	74.1	1.0	93.6	4.3	5.0
SMAJ60(C)	60.00	66.7	84.5	1.0	107.0	3.7	5.0
SMAJ60(C)A	60.00	66.7	76.7	1.0	96.8	4.1	5.0
SMAJ64(C)	64.00	71.1	90.1	1.0	114.0	3.5	5.0
SMAJ64(C)A	64.00	71.1	81.8	1.0	103.0	3.9	5.0
SMAJ70(C)	70.00	77.8	98.6	1.0	125	3.2	5.0
SMAJ70(C)A	70.00	77.8	89.5	1.0	113	3.5	5.0
SMAJ75(C)	75.00	83.3	105.7	1.0	134	3.0	5.0
SMAJ75(C)A	75.00	83.3	95.8	1.0	121	3.3	5.0
SMAJ78(C)	78.00	86.7	109.8	1.0	139	2.9	5.0
SMAJ78(C)A	78.00	86.7	99.7	1.0	126	2.2	5.0
SMAJ85(C)	85.00	94.4	119.2	1.0	151	2.6	5.0
SMAJ85(C)A	85.00	94.4	108.2	1.0	137	2.9	5.0
SMAJ90(C)	90.00	100	126.5	1.0	160	2.5	5.0
SMAJ90(C)A	90.00	100	115.5	1.0	146	2.7	5.0
SMAJ100(C)	100.00	111	141	1.0	179	2.2	5.0
SMAJ100(C)A	100.00	111	128	1.0	162	2.5	5.0
SMAJ110(C)	110.00	122	154.4	1.0	196	2.0	5.0
SMAJ110(C)A	110.00	122	140.5	1.0	177	2.3	5.0
SMAJ120(C)	120.00	133	169	1.0	214	1.9	5.0
SMAJ120(C)A	120.00	133	153	1.0	193	2.0	5.0
SMAJ130(C)	130.00	144	182.5	1.0	231	1.7	5.0
SMAJ130(C)A	130.00	144	165.5	1.0	209	1.9	5.0
SMAJ150(C)	150.00	167	211.5	1.0	268	1.5	5.0
SMAJ150(C)A	150.00	167	192.5	1.0	243	1.6	5.0
SMAJ160(C)	160.00	178	226	1.0	287	1.4	5.0
SMAJ160(C)A	160.00	178	205	1.0	259	1.5	5.0
SMAJ170(C)	170.00	189	239.5	1.0	304	1.3	5.0
SMAJ170(C)A	170.00	189	217.5	1.0	275	1.4	5.0
SMAJ180(C)	180.00	198	253.8	1.0	322	1.2	5.0
SMAJ180(C)A	180.00	198	230.4	1.0	292	1.3	5.0
SMAJ190(C)	190.00	209	267.9	1.0	340	1.2	5.0
SMAJ190(C)A	190.00	209	243.2	1.0	308	1.3	5.0
SMAJ200(C)	200.00	220	282.0	1.0	358	1.1	5.0
SMAJ200(C)A	200.00	220	256.0	1.0	324	1.2	5.0
SMAJ210(C)	210.00	231	296.1	1.0	376	1.1	5.0
SMAJ210(C)A	210.00	231	268.8	1.0	340	1.2	5.0
SMAJ220(C)	220.00	242	310.2	1.0	394	1.0	5.0
SMAJ220(C)A	220.00	242	281.6	1.0	356	1.1	5.0

Ratings And Characteristic Curves

Fig.1 Peak Pulse Power Rating Curve

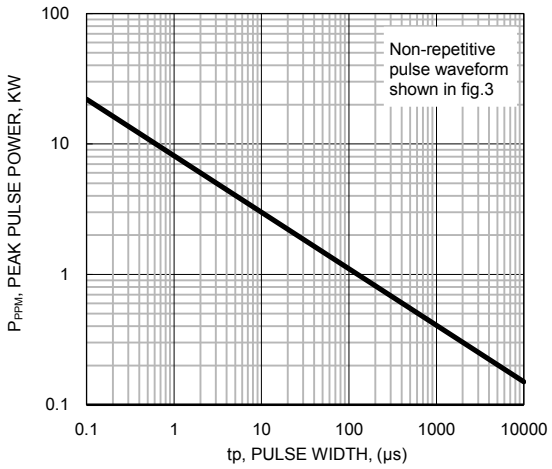


Fig.2 Pulse Derating Curve

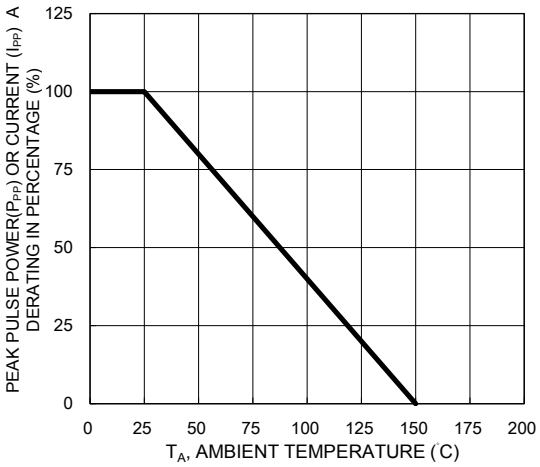


Fig.3 Claming Power Pulse Waveform

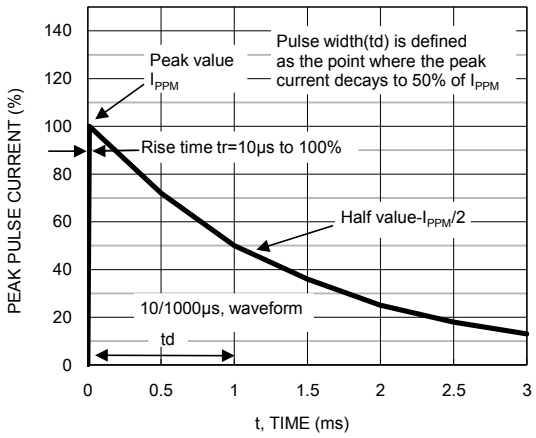


Fig.4 Maximum Non-repetitive Forward Surge Current

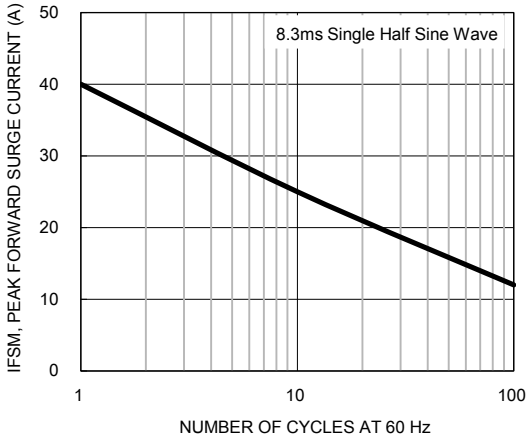
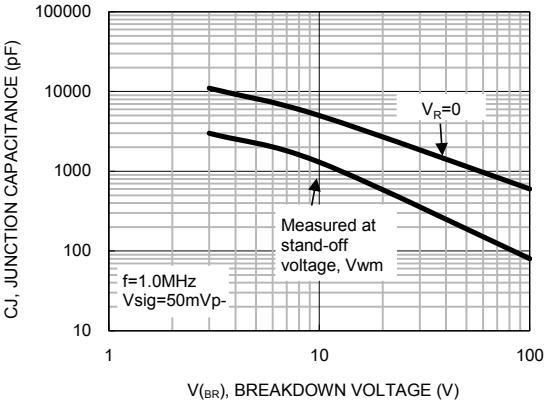
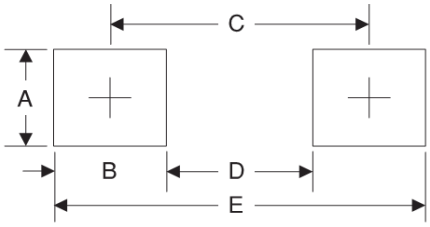


Fig.5 Typical Junction Capacitance

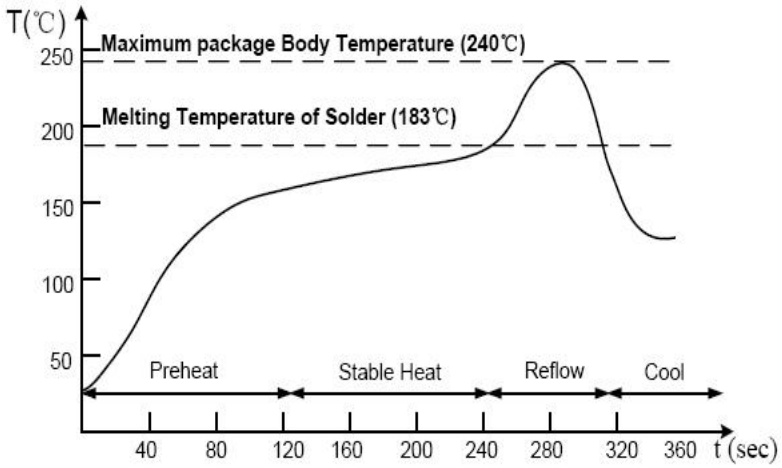


Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.90	0.154
D	2.41	0.095
E	5.45	0.215

Suggested Soldering Temperature Profile

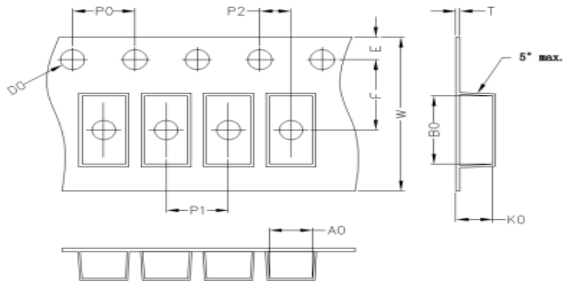


Note

- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 265°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Package Information

Carrier Dimension(mm)



A0	B0	K0	D0	E	F
2.80	5.30	2.36	1.55	1.75	5.50
P0	P1	P2	T	W	Tolerance
4.0	4.0	2.0	0.25	12	0.1

Package Specifications

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SMA	11'	278	5	285	10	355*310*310	80
	13'	330	7.5	340	15	360*360*360	120