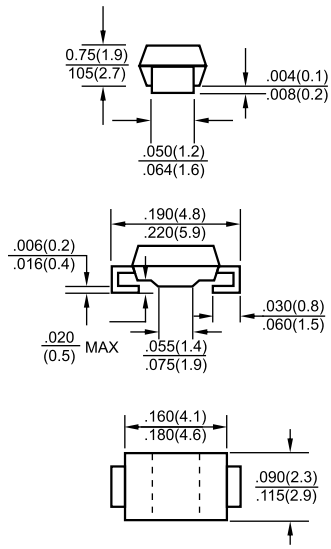
SMAJ SERIES

400Watts Surface Mount Transient Voltage Suppressor

SMA/DO-214AC



Dimensions in inches and (millimeters)

Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- ✧ Typical I_R less than 1μA above 10V
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- ✧ 400 watts peak pulse power capability with a 10 x 1000 us waveform by 0.01% duty cycle (300W above 78V).

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated lead free,
- ✧ Polarity: Indicated by cathode band
- ✧ Standard packaging: 12mm tape
- ✧ Weight: 0.064 gram

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A=25°C, Tp=1ms(Note 1)	P_{PK}	Minimum 400	Watts
Steady State Power Dissipation	Pd	1	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3)	I_{FSM}	40.0	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional Only	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-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 5.0mm² (.013 mm Thick) Copper Pads to Each Terminal.
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.

Devices for Bipolar Applications

1. For Bidirectional Use C or CA Suffix for Types SMAJ5.0 through Types SMAJ188.
2. Electrical Characteristics Apply in Both Directions.

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RATINGS AND CHARACTERISTIC CURVES (SMAJ SERIES)

FIG.1- PEAK PULSE POWER RATING CURVE

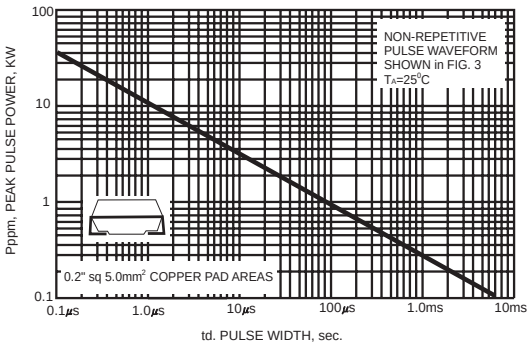


FIG.2- PULSE DERATING CURVE

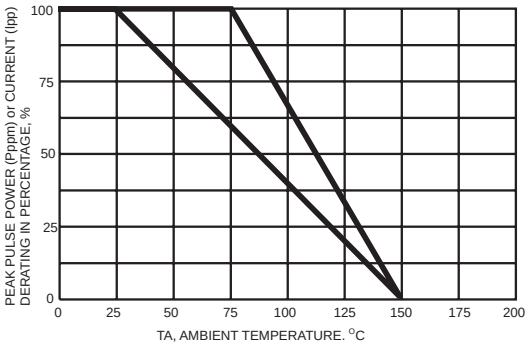


FIG.3- CLAMPING POWER PULSE WAVEFORM

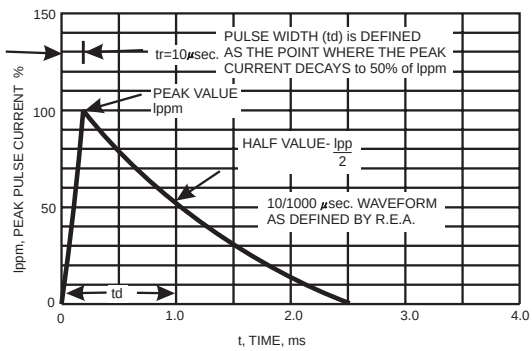


FIG.4- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

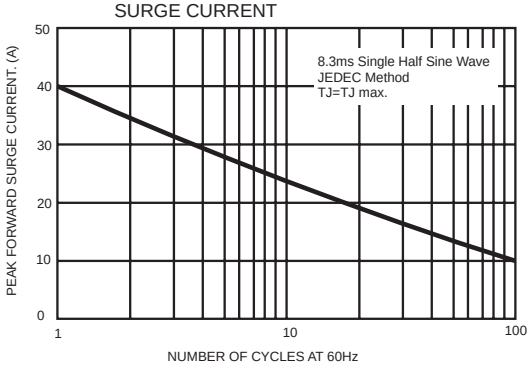
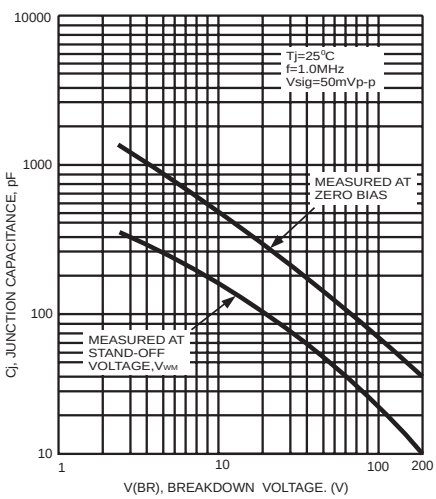


FIG.5- TYPICAL JUNCTION CAPACITANCE



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ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STANDOFF 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	MAXIMUM CLAMPING VOLTAGE @I_{PP} V_C (V)	PEAK PULSE CURRENT I_{PP} (A)	REVERSE LEAKAGE @ V_{RWM} I_R (μA)
		UNI	BI							
SMAJ5.0A	SMAJ5.0CA	AE	WE	5.00	6.40	7.00	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	AG	WG	6.00	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	AK	WK	6.50	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	SMAJ7.0CA	AM	WM	7.00	7.78	8.60	10	12.0	33.3	200
SMAJ7.5A	SMAJ7.5CA	AP	WP	7.50	8.33	9.21	1	12.9	31.0	100
SMAJ8.0A	SMAJ8.0CA	AR	WR	8.00	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	SMAJ8.5CA	AT	WT	8.50	9.44	10.40	1	14.4	27.8	20
SMAJ9.0A	SMAJ9.0CA	AV	WV	9.00	10.00	11.10	1	15.4	26.0	10
SMAJ10A	SMAJ10CA	AX	WX	10.00	11.10	12.30	1	17.0	23.5	5
SMAJ11A	SMAJ11CA	AZ	WZ	11.00	12.20	13.50	1	18.2	22.0	5
SMAJ12A	SMAJ12CA	BE	XE	12.00	13.30	14.70	1	19.9	20.1	5
SMAJ13A	SMAJ13CA	BG	XG	13.00	14.40	15.90	1	21.5	18.6	5
SMAJ14A	SMAJ14CA	BK	XK	14.00	15.60	17.20	1	23.2	17.2	5
SMAJ15A	SMAJ15CA	BM	XM	15.00	16.70	18.50	1	24.4	16.4	5
SMAJ16A	SMAJ16CA	BP	XP	16.00	17.80	19.70	1	26.0	15.4	5
SMAJ17A	SMAJ17CA	BR	XR	17.00	18.90	20.90	1	27.6	14.5	5
SMAJ18A	SMAJ18CA	BT	XT	18.00	20.00	22.10	1	29.2	13.7	5
SMAJ20A	SMAJ20CA	BV	XV	20.00	22.20	24.50	1	32.4	12.3	5
SMAJ22A	SMAJ22CA	BX	XX	22.00	24.40	26.90	1	35.5	11.3	5
SMAJ24A	SMAJ24CA	BZ	XZ	24.00	26.70	29.50	1	38.9	10.3	5
SMAJ26A	SMAJ26CA	CE	YE	26.00	28.90	31.90	1	42.1	9.5	5
SMAJ28A	SMAJ28CA	CG	YG	28.00	31.10	34.40	1	45.4	8.8	5
SMAJ30A	SMAJ30CA	CK	YK	30.00	33.30	36.80	1	48.4	8.3	5
SMAJ33A	SMAJ33CA	CM	YM	33.00	36.70	40.60	1	53.3	7.5	5
SMAJ36A	SMAJ36CA	CP	YP	36.00	40.00	44.20	1	58.1	6.9	5
SMAJ40A	SMAJ40CA	CR	YR	40.00	44.40	49.10	1	64.5	6.2	5
SMAJ43A	SMAJ43CA	CT	YT	43.00	47.80	52.80	1	69.4	5.8	5
SMAJ45A	SMAJ45CA	CV	YV	45.00	50.00	55.30	1	72.7	5.5	5
SMAJ48A	SMAJ48CA	CX	YX	48.00	53.30	58.90	1	77.4	5.2	5
SMAJ51A	SMAJ51CA	CZ	YZ	51.00	56.70	62.70	1	82.4	4.9	5
SMAJ54A	SMAJ54CA	RE	ZE	54.00	60.00	66.30	1	87.1	4.6	5
SMAJ58A	SMAJ58CA	RG	ZG	58.00	64.40	71.20	1	93.6	4.3	5
SMAJ60A	SMAJ60CA	RK	ZK	60.00	66.70	73.70	1	96.8	4.1	5
SMAJ64A	SMAJ64CA	RM	ZM	64.00	71.10	78.60	1	103.0	3.9	5
SMAJ70A	SMAJ70CA	RP	ZP	70.00	77.80	86.00	1	113.0	3.5	5
SMAJ75A	SMAJ75CA	RR	ZR	75.00	83.30	92.10	1	121.0	3.3	5
SMAJ78A	SMAJ78CA	RT	ZT	78.00	86.70	95.80	1	126.0	3.2	5
SMAJ85A	SMAJ85CA	RV	ZV	85.00	94.40	104.00	1	137.0	2.9	5
SMAJ90A	SMAJ90CA	RX	ZX	90.00	100.00	111.00	1	146	2.7	5
SMAJ100A	SMAJ100CA	RZ	ZZ	100.00	111.00	123.00	1	162	2.5	5
SMAJ110A	SMAJ110CA	SE	VE	110.00	122.00	135.00	1	177	2.3	5
SMAJ120A	SMAJ120CA	SG	VG	120.00	133.00	147.00	1	193	2.1	5
SMAJ130A	SMAJ130CA	SK	VK	130.00	144.00	159.00	1	209	1.9	5
SMAJ150A	SMAJ150CA	SM	VM	150.00	167.00	185.00	1	243	1.6	5
SMAJ160A	SMAJ160CA	SP	VP	160.00	178.00	197.00	1	259	1.5	5
SMAJ170A	SMAJ170CA	SR	VR	170.00	189.00	209.00	1	275	1.5	5
SMAJ180A	SMAJ180CA	ST	VT	180.00	201.00	222.00	1	292	1.4	5
SMAJ200A	SMAJ200CA	SV	VV	200.00	224.00	247.00	1	324	1.2	5
SMAJ220A	SMAJ220CA	SX	VX	220.00	246.00	272.00	1	356	1.1	5
SMAJ250A	SMAJ250CA	SZ	VZ	250.00	279.00	309.00	1	405	1.0	5
SMAJ300A	SMAJ300CA	TE	UE	300.00	335.00	371.00	1	486	0.8	5
SMAJ350A	SMAJ350CA	TG	UG	350.00	391.00	432.00	1	567	0.7	5
SMAJ400A	SMAJ400CA	TK	UK	400.00	447.00	494.00	1	648	0.6	5
SMAJ440A	SMAJ440CA	TM	UM	440.00	492.00	543.00	1	713	0.6	5

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.
For parts without A , the VBR is ± 10%

Certified RoHS Compliant
UL File # E223026

http://www.luguang.cn **mail:lge@luguang.cn**

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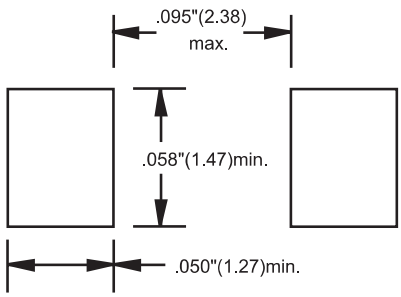
APPLICATION NOTES:

Recommended Pad Layout

The pad dimensions should be 0.010" longer than the contact size in the lead axis. This allows a solder fillet to form, see figure below. Contact factory for soldering methods.



Dimensions in inches and (millimeters)

This device is designed specifically for

transiient voltage suppression from threats generated by ESD for board levelload switching components.

The wide leads assure a large surface contact for good heat disipation, and a low resistance path for surge current flow to ground.

This series is designed to optimize board space and for use with surface mount technology automated assembly equipment.

They can be easily mounted on printed circuit boards and ceramic substrates to protect sensitive components from transient voltage damage.