Prisemi®

SMAJ Series

Surface Mount-400W Transient Voltage Suppression Diodes

Description

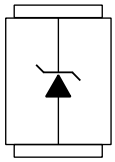
The SMAJ Series are designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Notes;

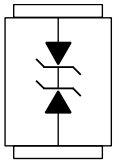
Unidirectional:SMAJxxA

Bidirectional:SMAJxxCA

Unidirectional



Bidirectional



Feature

- Halogen-Free
- RoHS compliant
- For surface mounted application to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivited junction
- Plastic material has UL flammability classification 94 V-0
- Low inductance
- Excellent clamping capability
- Fast response time: typical less than 1.0 ps from 0V to V_{BR} min
- 400W peak pulse power capability at 10*1000us waveform, repetition rate (duty cycle): 0.01%

Applications

TVS device are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom, computer industrial and consumer electronic application

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_p=10/1000μs)	P_{pp}	400	W
Peak Forward Surge Current,8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	40	A
Instantaneous Forward Voltage @I_{PP}=35A V_{BR}<100V V_{BR}≥100V	V_F	 3.5 5.0	V
Operating and Storage Temperature	T_J ,T_{STG}	-55 to +150	℃

Electrical characteristics per line@25℃(unless otherwise specified)

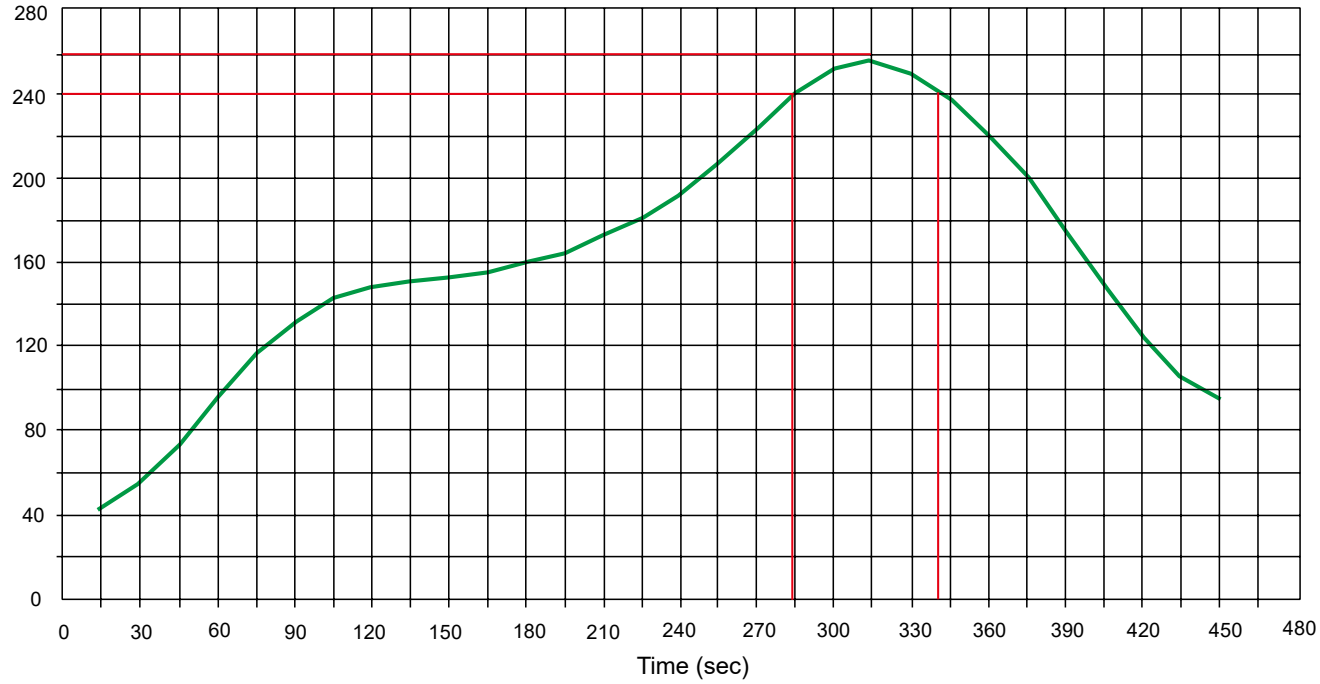
Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V_R (V)	Breakdown Voltage V_{BR}@ I_T (V)		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP}	Maximum Peak Pulse Current I_{PP}	Maximum Reverse Leakage I_R @ V_R (μA)
			MIN	MAX				
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	200
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	12.9	31.0	100
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.40	1	14.4	27.8	20
SMAJ9.0A	SMAJ9.0CA	9.0	10.00	11.10	1	15.4	26.0	10
SMAJ10A	SMAJ10CA	10.0	11.10	12.30	1	17.0	23.5	5
SMAJ11A	SMAJ11CA	11.0	12.20	13.50	1	18.2	22.0	1
SMAJ12A	SMAJ12CA	12.0	13.30	14.70	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	13.0	14.40	15.90	1	21.5	18.6	1
SMAJ14A	SMAJ14CA	14.0	15.60	17.20	1	23.2	17.2	1
SMAJ15A	SMAJ15CA	15.0	16.70	18.50	1	24.4	16.4	1
SMAJ16A	SMAJ16CA	16.0	17.80	19.70	1	26.0	15.4	1
SMAJ17A	SMAJ17CA	17.0	18.90	20.90	1	27.6	14.5	1
SMAJ18A	SMAJ18CA	18.0	20.00	22.10	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	20.0	22.20	24.50	1	32.4	12.3	1
SMAJ22A	SMAJ22CA	22.0	24.40	26.90	1	35.5	11.3	1
SMAJ24A	SMAJ24CA	24.0	26.70	29.50	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	26.0	28.90	31.90	1	42.1	9.5	1
SMAJ28A	SMAJ28CA	28.0	31.10	34.40	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	30.0	33.30	36.80	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	33.0	36.70	40.60	1	53.3	7.5	1
SMAJ36A	SMAJ36CA	36.0	40.00	44.20	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	40.0	44.40	49.10	1	64.5	6.2	1
SMAJ43A	SMAJ43CA	43.0	47.80	52.80	1	69.4	5.8	1
SMAJ45A	SMAJ45CA	45.0	50.00	55.30	1	72.7	5.5	1

Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V_R (V)	Breakdown Voltage V_{BR}@ I_T (V)		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP}	Maximum Peak Pulse Current I_{PP}	Maximum Reverse Leakage I_R @ V_R (μA)
			MIN	MAX				
SMAJ48A	SMAJ48CA	48.0	53.30	58.90	1	77.4	5.2	1
SMAJ51A	SMAJ51CA	51.0	56.70	62.70	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	54.0	60.00	66.30	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	58.0	64.40	71.20	1	93.6	4.3	1
SMAJ60A	SMAJ60CA	60.0	66.70	73.70	1	96.8	4.1	1
SMAJ64A	SMAJ64CA	64.0	71.10	78.60	1	103.0	3.9	1
SMAJ70A	SMAJ70CA	70.0	77.80	86.00	1	113.0	3.5	1
SMAJ75A	SMAJ75CA	75.0	83.30	92.10	1	121.0	3.3	1
SMAJ78A	SMAJ78CA	78.0	86.70	95.80	1	126.0	3.2	1
SMAJ85A	SMAJ85CA	85.0	94.40	104.00	1	137.0	2.9	1
SMAJ90A	SMAJ90CA	90.0	100.00	111.00	1	146.0	2.7	1
SMAJ100A	SMAJ100CA	100.0	111.00	123.00	1	162.0	2.5	1
SMAJ110A	SMAJ110CA	110.0	122.00	135.00	1	177.0	2.3	1
SMAJ120A	SMAJ120CA	120.0	133.00	147.00	1	193.0	2.1	1
SMAJ130A	SMAJ130CA	130.0	144.00	159.00	1	209.0	1.9	1
SMAJ150A	SMAJ150CA	150.0	167.00	185.00	1	243.0	1.6	1
SMAJ160A	SMAJ160CA	160.0	178.00	197.00	1	259.0	1.5	1
SMAJ170A	SMAJ170CA	170.0	189.00	209.00	1	275.0	1.5	1
SMAJ180A	SMAJ180CA	180.0	201.00	222.00	1	292.0	1.4	1
SMAJ200A	SMAJ200CA	200.0	224.00	247.00	1	324.0	1.2	1
SMAJ220A	SMAJ220A	220.0	246.00	272.00	1	356.0	1.1	1
SMAJ250A	SMAJ250CA	250.0	279.00	309.00	1	405.0	1.0	1
SMAJ300A	SMAJ300CA	300.0	335.00	371.00	1	486.0	0.8	1
SMAJ350A	SMAJ350CA	350.0	391.00	432.00	1	567.0	0.7	1
SMAJ400A	SMAJ400CA	400.0	447.00	494.00	1	648.0	0.6	1
SMAJ440A	SMAJ440CA	440.0	492.00	543.00	1	713.0	0.6	1

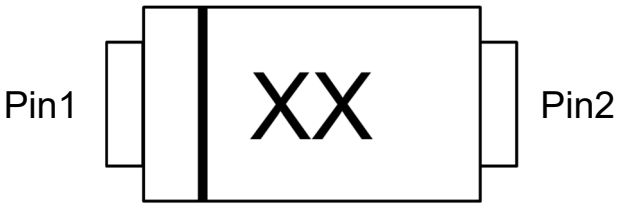
For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

Solder Reflow Recommendation

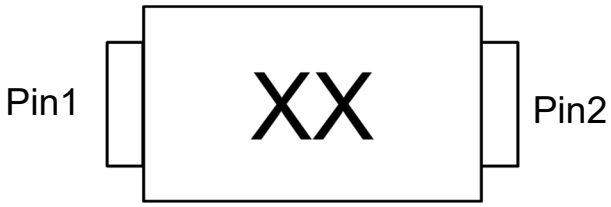
Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec



Marking information



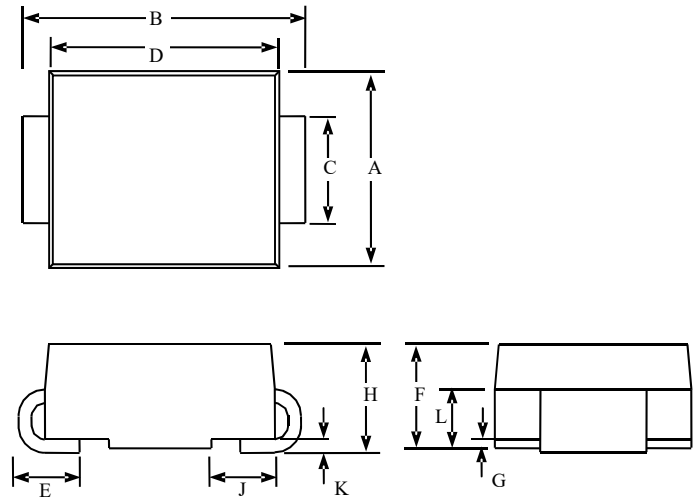
Unidirectional



Bidirection

Notes: X represents 0~9, A~Z any character

Product dimension(SMA)



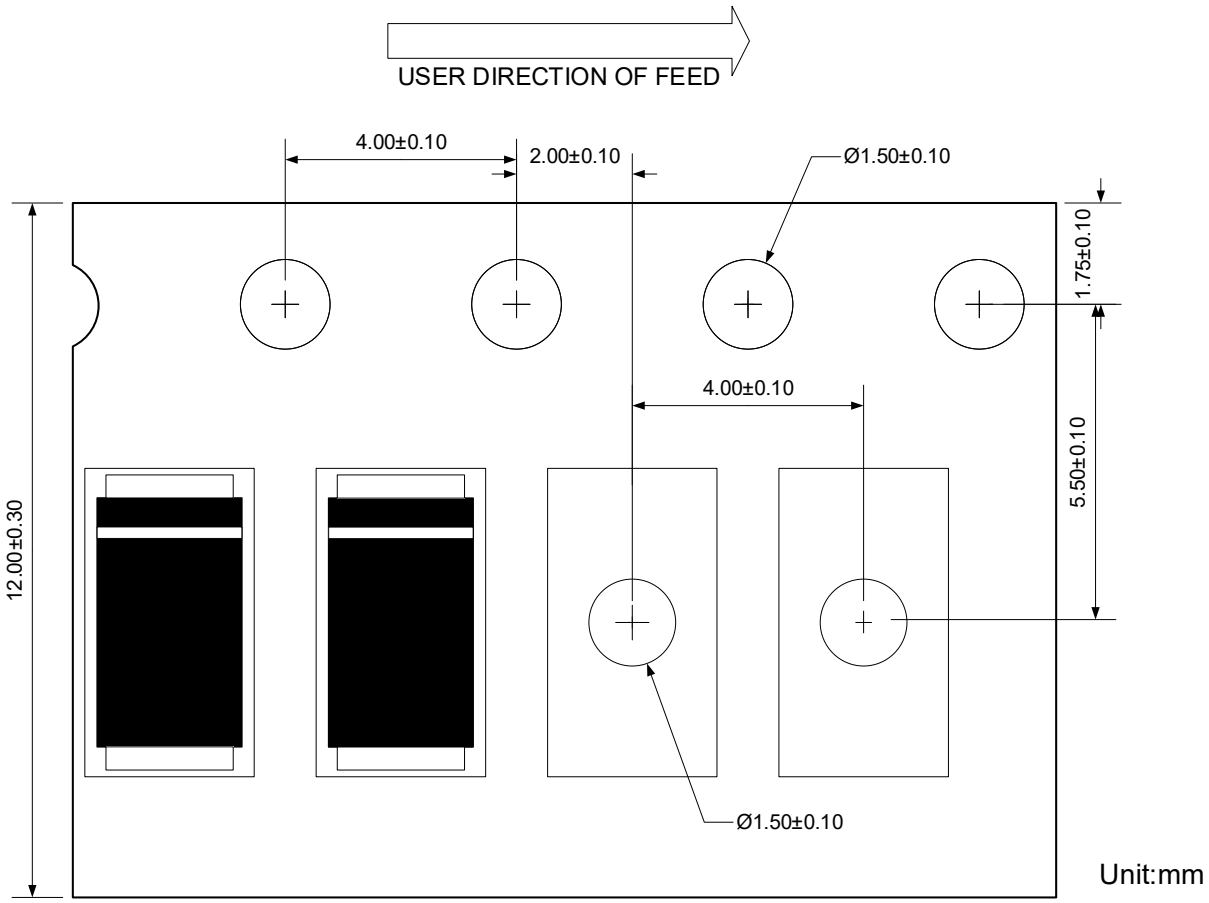
DIMENSIONS ARE : INCHES / (Millimeters)

Dimension	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.08	0.11	2.1	2.7
B	0.18	0.20	4.7	5.3
C	0.05	0.06	1.2	1.7
D	0.16	0.18	4.0	4.5
E	0.03	0.05	0.9	1.4
F	0.06	0.08	1.7	2.2
G	0.00	0.00	0.0	0.2
H	0.06	0.09	1.7	2.3
J	0.03	0.05	0.8	1.3
K	0.00	0.01	0.2	0.3
L	0.03	0.04	0.9	1.2

Ordering information

Device	Package	Shipping
SMAJ Series	SMA (Pb-Free)	2000 / Tape & Reel

Load with information



Unit:mm

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