SMAJ SERIES

SURFACE MOUNT UNIDIRECTIONAL AND BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS

REVERSE VOLTAGE - **5.0** to **170** Volts
POWER DISSIPATION - **400** Watts

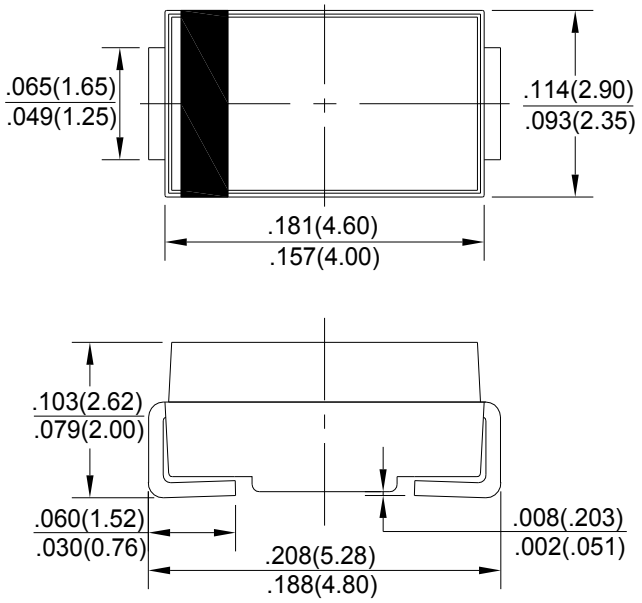
FEATURES

- Rating to 200V VBR
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL recognition 94V-0
- Typical IR less than 1μA above 10V
- Fast response time:typically less than 1.0ns for Uni-direction,less than 5.0ns fo Bi-direction,from 0 Volts to BV min

MECHANICAL DATA

- Case : Molded Plastic
- Polarity:by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- Weight : 0.002 ounces, 0.053 grams

SMA



Dimensions in inches and(millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave ,60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Peak Power Dissipation at T_A=25℃ TP=1ms (NOTE1,2)	P_{PK}	Minimum 400	WATTS
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	I_{FSM}	40	AMPS
Steady State Power Dissipation at T_L=75℃	$P_{M(AV)}$	1.0	WATTS
Maximum Instantaneous Forward Voltage at 35A for Unidirectional Devices Only (NOTE3)	V_F	3.5	VOLTS
Operating Temperature Range	T_J	-55 to + 150	℃
Storage Temperature Range	T_{STG}	-55 to + 175	℃

NOTES:1. Non-repetitive current pulse ,per Fig. 3 and derated above T_A=25℃ per Fig. 1.

2. Thermal Resistance junction to Lead.

3. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

RATING AND CHARACTERTIC CURVES
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FIG.1-PULSE DERATING CURVE

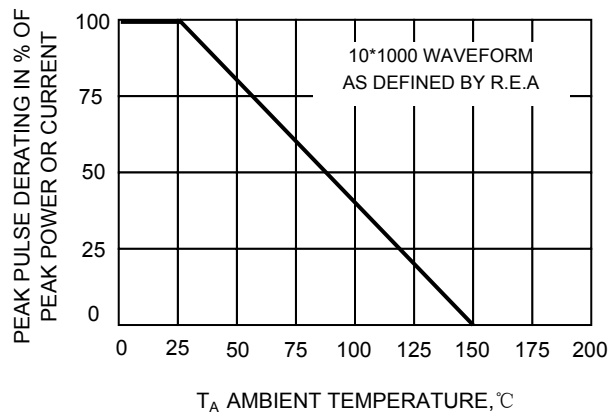


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

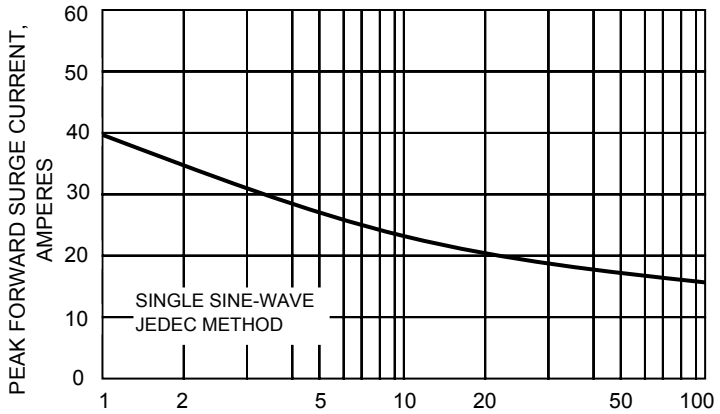


FIG.3-PULSE WAVEFORM

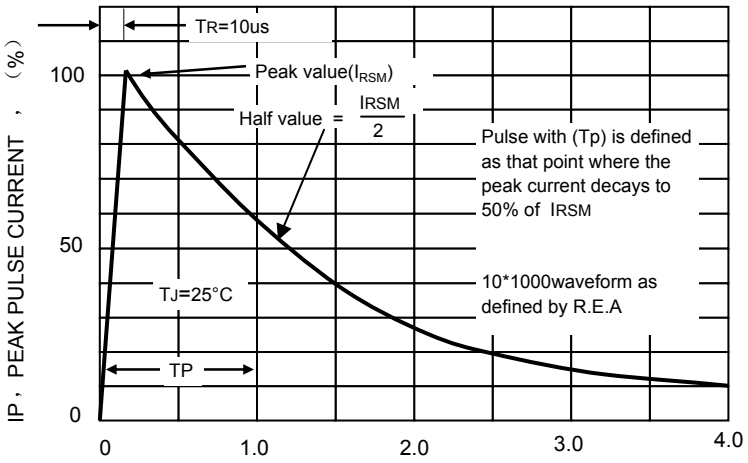


FIG.4-TYPICAL JUNCTION CAPACITANCE

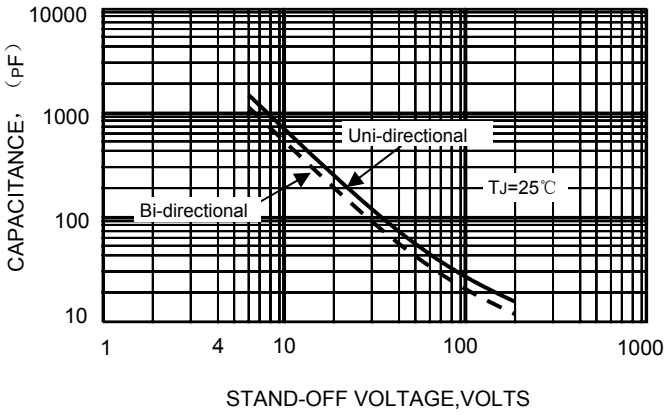


FIG.5-PULSE RATING CURVE

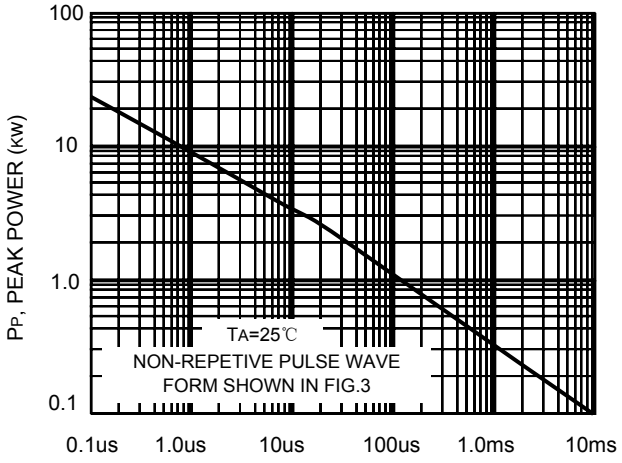
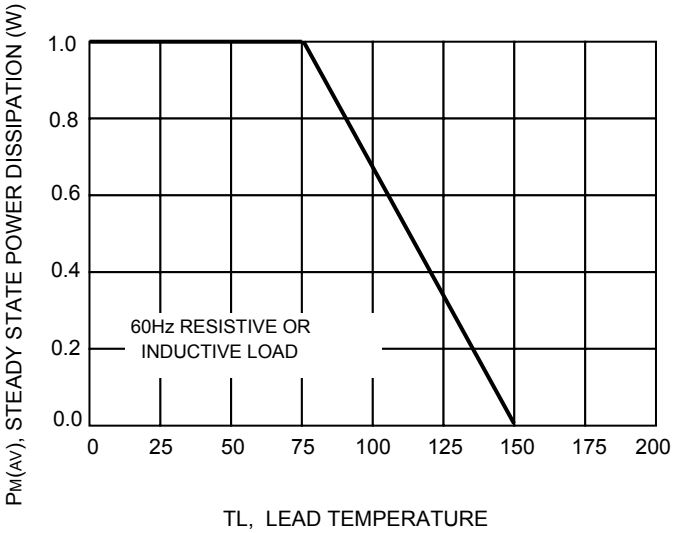


FIG.6-STEADY STATE POWER DERATING CURVE



The cruve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!

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Device Uni-directional	Device Bi-directional	Working Peak Reverse Voltage	Breakdown Voltage VBR Volts			Maximum Reverse Voltage at I_{RSM} (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at V_{RWM}
		V_{RWM} (volts)	Min(V)	Max(V)	@ IT(mA)	V_{RSM} (volts)	I_{RSM} (Amps)	IR (μA)
SMAJ5.0	SMAJ5.0C	5.0	6.40	7.30	10	9.6	41.6	800/1600
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	800/1600
SMAJ6.0	SMAJ6.0C	6.0	6.67	8.15	10	11.4	35.1	800/1600
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	800/1600
SMAJ6.5	SMAJ6.5C	6.5	7.22	8.82	10	12.3	32.5	500/1000
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500/1000
SMAJ7.0	SMAJ7.0C	7.0	7.78	9.51	10	13.3	30.1	200/400
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	200/400
SMAJ7.5	SMAJ7.5C	7.5	8.33	10.30	1.0	14.3	28.0	100/200
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1.0	12.9	31.0	100/200
SMAJ8.0	SMAJ8.0C	8.0	8.89	10.90	1.0	15.0	26.5	50/100
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1.0	13.6	29.4	50/100
SMAJ8.5	SMAJ8.5C	8.5	9.44	11.50	1.0	15.9	25.1	10/20
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.40	1.0	14.4	27.7	10/20
SMAJ9.0	SMAJ9.0C	9.0	10.00	12.20	1.0	16.9	23.6	5/10
SMAJ9.0A	SMAJ9.0CA	9.0	10.00	11.10	1.0	15.4	26.0	5/10
SMAJ10	SMAJ10C	10.0	11.10	13.60	1.0	18.8	21.2	5/10
SMAJ10A	SMAJ10CA	10.0	11.10	12.30	1.0	17.0	23.5	5/10
SMAJ11	SMAJ11C	11.0	12.20	14.90	1.0	20.1	20.0	5.0
SMAJ11A	SMAJ11CA	11.0	12.20	13.50	1.0	18.2	22.0	5.0
SMAJ12	SMAJ12C	12.0	13.30	16.30	1.0	22.0	18.1	5.0
SMAJ12A	SMAJ12CA	12.0	13.30	14.70	1.0	19.9	20.1	5.0
SMAJ13	SMAJ13C	13.0	14.40	17.60	1.0	23.8	16.8	5.0
SMAJ13A	SMAJ13CA	13.0	14.40	15.90	1.0	21.5	18.6	5.0
SMAJ14	SMAJ14C	14.0	15.60	19.10	1.0	25.8	15.5	5.0
SMAJ14A	SMAJ14CA	14.0	15.60	17.20	1.0	23.2	17.2	5.0
SMAJ15	SMAJ15C	15.0	16.70	20.40	1.0	26.9	14.8	5.0
SMAJ15A	SMAJ15CA	15.0	16.70	18.50	1.0	24.4	16.4	5.0
SMAJ16	SMAJ16C	16.0	17.80	21.80	1.0	28.8	13.8	5.0
SMAJ16A	SMAJ16CA	16.0	17.80	19.70	1.0	26.0	15.3	5.0
SMAJ17	SMAJ17C	17.0	18.90	23.10	1.0	30.5	13.1	5.0
SMAJ17A	SMAJ17CA	17.0	18.90	20.90	1.0	27.6	14.5	5.0
SMAJ18	SMAJ18C	18.0	20.00	24.40	1.0	32.2	12.4	5.0
SMAJ18A	SMAJ18CA	18.0	20.00	22.10	1.0	29.2	13.7	5.0
SMAJ20	SMAJ20C	20.0	22.20	27.10	1.0	35.8	11.1	5.0
SMAJ20A	SMAJ20CA	20.0	22.20	24.50	1.0	32.4	12.3	5.0
SMAJ22	SMAJ22C	22.0	24.40	29.80	1.0	39.4	10.1	5.0
SMAJ22A	SMAJ22CA	22.0	24.40	26.90	1.0	35.5	11.2	5.0
SMAJ24	SMAJ24C	24.0	26.70	32.60	1.0	43.0	9.3	5.0
SMAJ24A	SMAJ24CA	24.0	26.70	29.50	1.0	38.9	10.3	5.0
SMAJ26	SMAJ26C	26.0	28.90	35.30	1.0	46.6	8.6	5.0
SMAJ26A	SMAJ26CA	26.0	28.90	31.90	1.0	42.1	9.5	5.0
SMAJ28	SMAJ28C	28.0	31.10	38.00	1.0	50.0	8.0	5.0
SMAJ28A	SMAJ28CA	28.0	31.10	34.40	1.0	45.4	8.8	5.0
SMAJ30	SMAJ30C	30.0	33.30	40.70	1.0	53.5	7.5	5.0
SMAJ30A	SMAJ30CA	30.0	33.30	36.80	1.0	48.4	8.3	5.0
SMAJ33	SMAJ33C	33.0	36.70	44.90	1.0	59.0	6.8	5.0
SMAJ33A	SMAJ33CA	33.0	36.70	40.60	1.0	53.3	7.5	5.0

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		V_{RWM} (volts)	Min(V)	Max(V)	@ IT(mA)	V_{RSM} (volts)	I_{RSM} (Amps)	IR (μA)
SMAJ36	SMAJ36C	36.0	40.0	48.9	1.0	64.3	6.2	5.0
SMAJ36A	SMAJ36CA	36.0	40.0	44.2	1.0	58.1	6.9	5.0
SMAJ40	SMAJ40C	40.0	44.4	54.3	1.0	71.4	5.6	5.0
SMAJ40A	SMAJ40CA	40.0	44.4	49.1	1.0	64.5	6.2	5.0
SMAJ43	SMAJ43C	43.0	47.8	58.4	1.0	76.7	5.2	5.0
SMAJ43A	SMAJ43CA	43.0	47.8	52.8	1.0	69.4	5.7	5.0
SMAJ45	SMAJ45C	45.0	50.0	61.1	1.0	80.3	5.0	5.0
SMAJ45A	SMAJ45CA	45.0	50.0	55.3	1.0	72.7	5.5	5.0
SMAJ48	SMAJ48C	48.0	53.3	65.1	1.0	85.5	4.7	5.0
SMAJ48A	SMAJ48CA	48.0	53.3	58.9	1.0	77.4	5.2	5.0
SMAJ51	SMAJ51C	51.0	56.7	69.3	1.0	91.1	4.4	5.0
SMAJ51A	SMAJ51CA	51.0	56.7	62.7	1.0	82.4	4.9	5.0
SMAJ54	SMAJ54C	54.0	60.0	73.3	1.0	96.3	4.2	5.0
SMAJ54A	SMAJ54CA	54.0	60.0	66.3	1.0	87.1	4.6	5.0
SMAJ58	SMAJ58C	58.0	64.4	78.7	1.0	103.0	3.9	5.0
SMAJ58A	SMAJ58CA	58.0	64.4	71.2	1.0	93.6	4.3	5.0
SMAJ60	SMAJ60C	60.0	66.7	81.5	1.0	107.0	3.7	5.0
SMAJ60A	SMAJ60CA	60.0	66.7	73.7	1.0	96.8	4.1	5.0
SMAJ64	SMAJ64C	64.0	71.1	86.4	1.0	114.0	3.5	5.0
SMAJ64A	SMAJ64CA	64.0	71.1	78.6	1.0	103.0	3.9	5.0
SMAJ70	SMAJ70C	70.0	77.8	95.1	1.0	125.0	3.2	5.0
SMAJ70A	SMAJ70CA	70.0	77.8	86.0	1.0	113.0	3.5	5.0
SMAJ75	SMAJ75C	75.0	83.3	102.0	1.0	134.0	3.0	5.0
SMAJ75A	SMAJ75CA	75.0	83.3	92.1	1.0	121.0	3.3	5.0
SMAJ78	SMAJ78C	78.0	86.7	106.0	1.0	139.0	2.9	5.0
SMAJ78A	SMAJ78CA	78.0	86.7	95.8	1.0	126.0	3.2	5.0
SMAJ85	SMAJ85C	85.0	94.4	115.0	1.0	151.0	2.6	5.0
SMAJ85A	SMAJ85CA	85.0	94.4	104.0	1.0	137.0	2.9	5.0
SMAJ90	SMAJ90C	90.0	100.0	122.0	1.0	160.0	2.5	5.0
SMAJ90A	SMAJ90CA	90.0	100.0	111.0	1.0	146.0	2.7	5.0
SMAJ100	SMAJ100C	100.0	111.0	136.0	1.0	179.0	2.2	5.0
SMAJ100A	SMAJ100CA	100.0	111.0	123.0	1.0	162.0	2.5	5.0
SMAJ110	SMAJ110C	110.0	122.0	149.0	1.0	196.0	2.0	5.0
SMAJ110A	SMAJ110CA	110.0	122.0	135.0	1.0	177.0	2.3	5.0
SMAJ120	SMAJ120C	120.0	133.0	163.0	1.0	214.0	1.9	5.0
SMAJ120A	SMAJ120CA	120.0	133.0	147.0	1.0	193.0	2.0	5.0
SMAJ130	SMAJ130C	130.0	144.0	176.0	1.0	231.0	1.7	5.0
SMAJ130A	SMAJ130CA	130.0	144.0	159.0	1.0	209.0	1.9	5.0
SMAJ150	SMAJ150C	150.0	167.0	204.0	1.0	268.0	1.5	5.0
SMAJ150A	SMAJ150CA	150.0	167.0	185.0	1.0	243.0	1.6	5.0
SMAJ160	SMAJ160C	160.0	178.0	218.0	1.0	287.0	1.4	5.0
SMAJ160A	SMAJ160CA	160.0	178.0	197.0	1.0	259.0	1.5	5.0
SMAJ170	SMAJ170C	170.0	189.0	231.0	1.0	304.0	1.3	5.0
SMAJ170A	SMAJ170CA	170.0	189.0	209.0	1.0	275.0	1.4	5.0

NOTE: For bidirectional use C or CA suffix for types SMAJ5.0 thru types SMAJ170(ex. SMAJ5.0C, SMAJ170CA).

Electrical characteristics apply in both directions.

The later codes(/TD thru /XR) denote by bidirectional material.

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