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台舟电子

SMAJ Series

400W Surface Mount Transient Voltage Suppressors

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Features

- Peak power disspation
  400W@10 x 1000 us Pluse
- Low incremental surge resistance
- Excellent clamping capability
- Fast response time
- Low leakage current
- Halogen free and RoHS compliant

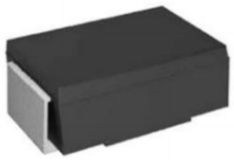
Applications

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Handhelds and notebooks
- Portable instrumentation

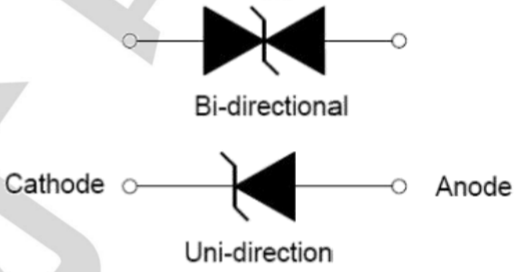
Mechanical Characteristics

- DO-214AC(SMA) surface mount package

Dimensions and Pin Configuration



DO-214AC(SMA)



Pin Configuration

Maximum Ratings& Thermal Characteristics

(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power (tp=10/1000μs waveform)	P_{PPM}	400	W
Steady state power dissipation at T_A=50℃	$P_{M(AV)}$	3.0	W
Peak Pulse Current of on 10/1000us Waveform	IPPM	See Table	A
Typical thermal resistance junction to ambient	$R_{\theta JA}$	120	℃/W
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

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Electrical Characteristics (TA=25°C unless otherwise specified)

MCC PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μA)
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	10.4	1	14.4	27.7	20
SMAJ9.0A	SMAJ9.0CA	9.0	10.0	11.1	1	15.4	26.0	10
SMAJ10A	SMAJ10CA	10	11.1	12.3	1	17.0	23.5	5
SMAJ11A	SMAJ11CA	11	12.2	13.5	1	18.2	22.0	1
SMAJ12A	SMAJ12CA	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	13	14.4	15.9	1	21.5	18.6	1
SMAJ14A	SMAJ14CA	14	15.6	17.2	1	23.2	17.2	1
SMAJ15A	SMAJ15CA	15	16.7	18.5	1	24.4	16.4	1
SMAJ16A	SMAJ16CA	16	17.8	19.7	1	26.0	15.3	1
SMAJ17A	SMAJ17CA	17	18.9	20.9	1	27.6	14.5	1
SMAJ18A	SMAJ18CA	18	20.0	22.1	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	20	22.2	24.5	1	32.4	12.3	1
SMAJ22A	SMAJ22CA	22	24.4	26.9	1	35.5	11.2	1
SMAJ24A	SMAJ24CA	24	26.7	29.5	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A	SMAJ28CA	28	31.1	34.4	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	30	33.3	36.8	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A	SMAJ36CA	36	40.0	44.2	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	40	44.4	49.1	1	64.5	6.2	1
SMAJ43A	SMAJ43CA	43	47.8	52.8	1	69.4	5.7	1
SMAJ45A	SMAJ45CA	45	50.0	55.3	1	72.7	5.5	1
SMAJ48A	SMAJ48CA	48	53.3	58.9	1	77.4	5.2	1

Electrical Characteristics (TA=25°C unless otherwise specified)

MCC PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μA)
SMAJ51A	SMAJ51CA	51	56.7	62.7	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	54	60.0	66.3	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	58	64.4	71.2	1	93.6	4.3	1
SMAJ60A	SMAJ60CA	60	66.7	73.7	1	96.8	4.1	1
SMAJ64A	SMAJ64CA	64	71.1	78.6	1	103	3.9	1
SMAJ70A	SMAJ70CA	70	77.8	86.0	1	113	3.5	1
SMAJ75A	SMAJ75CA	75	83.3	92.1	1	121	3.3	1
SMAJ78A	SMAJ78CA	78	86.7	95.8	1	126	2.2	1
SMAJ85A	SMAJ85CA	85	94.4	104	1	137	2.9	1
SMAJ90A	SMAJ90CA	90	100	111	1	146	2.7	1
SMAJ100A	SMAJ100CA	100	111	123	1	162	2.5	1
SMAJ110A	SMAJ110CA	110	122	135	1	177	2.3	1
SMAJ120A	SMAJ120CA	120	133	147	1	193	2.1	1
SMAJ130A	SMAJ130CA	130	144	159	1	209	1.9	1
SMAJ150A	SMAJ150CA	150	167	185	1	243	1.6	1
SMAJ160A	SMAJ160CA	160	178	197	1	259	1.5	1
SMAJ170A	SMAJ170CA	170	189	209	1	275	1.5	1
SMAJ180A	SMAJ180CA	180	201	222	1	292	1.4	1
SMAJ200A	SMAJ200CA	200	224	247	1	324	1.2	1
SMAJ220A	SMAJ220CA	220	246	272	1	356	1.1	1
SMAJ250A	SMAJ250CA	250	279	309	1	405	1.0	1
SMAJ300A	SMAJ300CA	300	335	371	1	486	0.8	1
SMAJ350A	SMAJ350CA	350	391	432	1	567	0.7	1
SMAJ400A	SMAJ400CA	400	447	494	1	648	0.6	1
SMAJ440A	SMAJ440CA	440	492	543	1	713	0.6	1

For bi-directional type having Vrwm of 10 Volts and less, the IR limit is double.

For parts without A, the VBR is +10%.

Typical Characteristics Curves

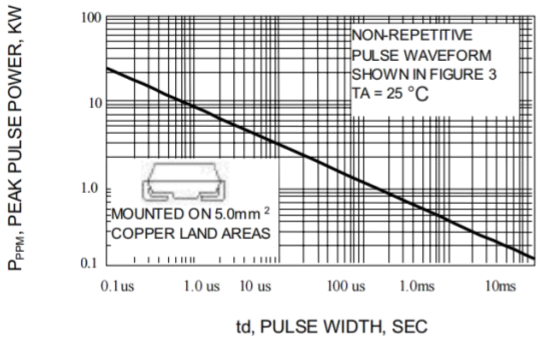


Fig. 1-PEAK PULSE POWER RATING CURVE

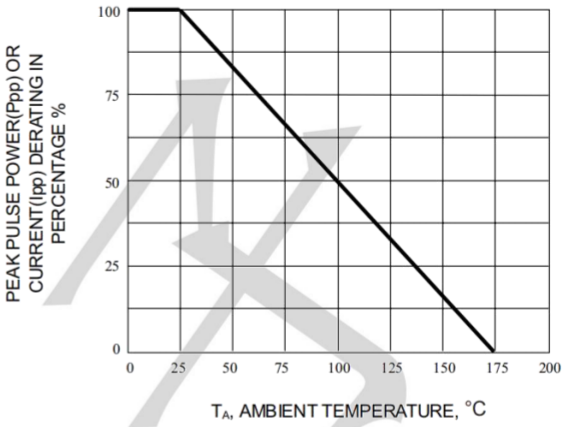


Fig. 2-PULSE RATING CURVE

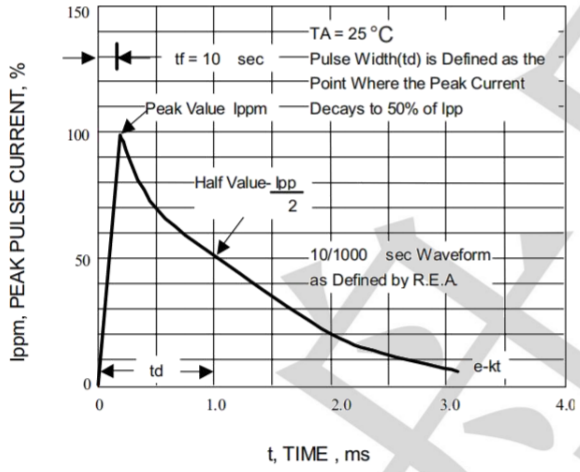


Fig. 3-PULSE WAVEFORM

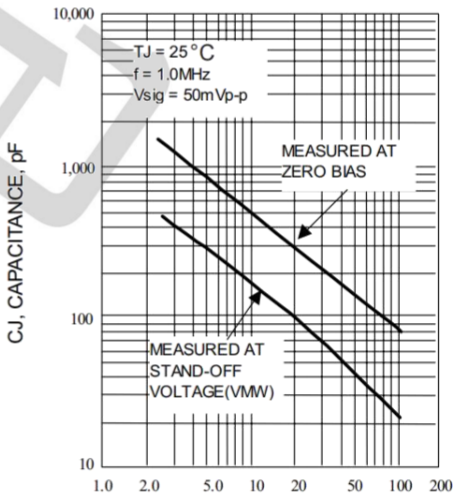


Fig. 4-TYPICAL JUNCTION CAPACITANCE

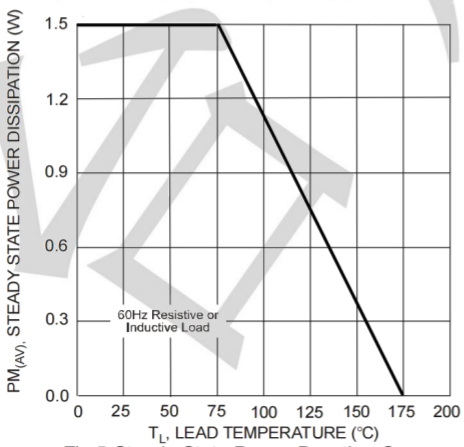
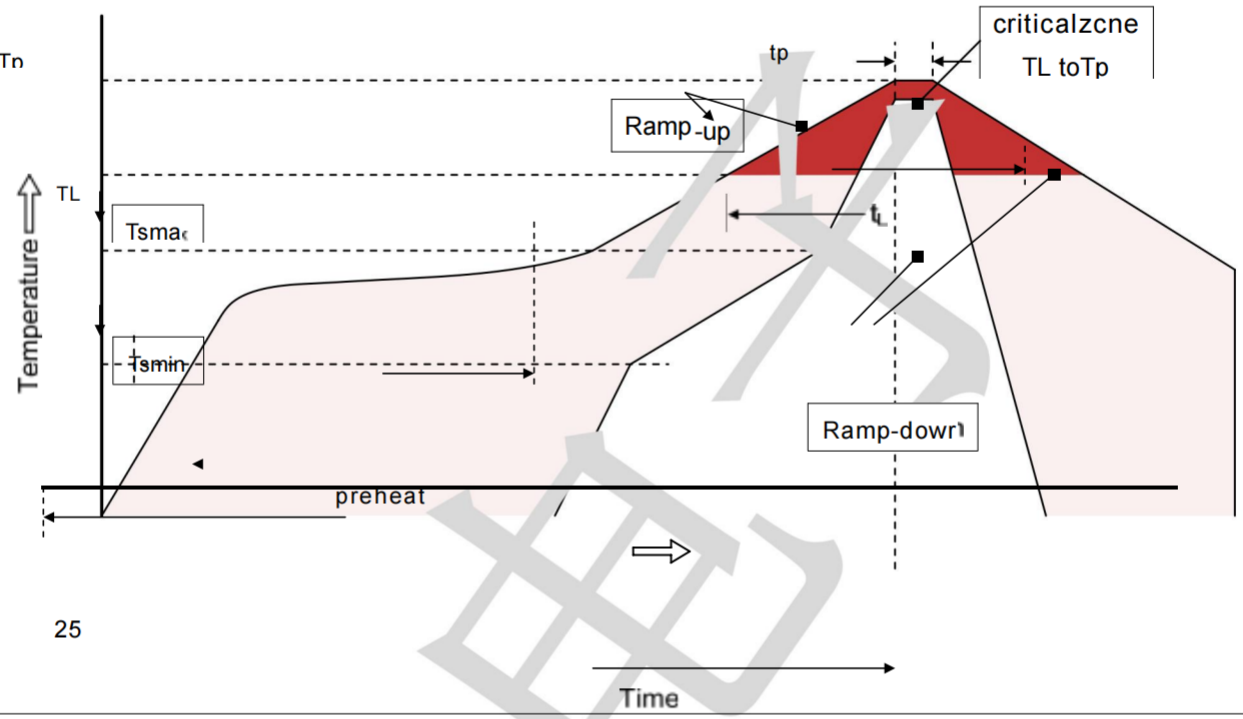


Fig.5-Steady State Power Derating Curve

Recommended Soldering Conditions

Reflow Soldering

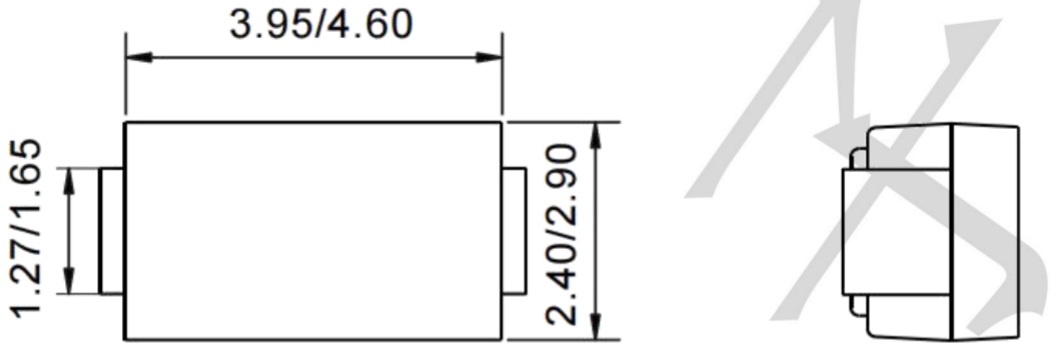


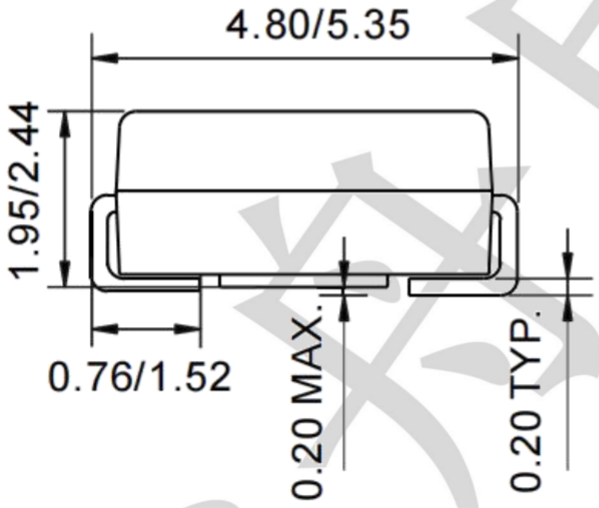
Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (minto max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

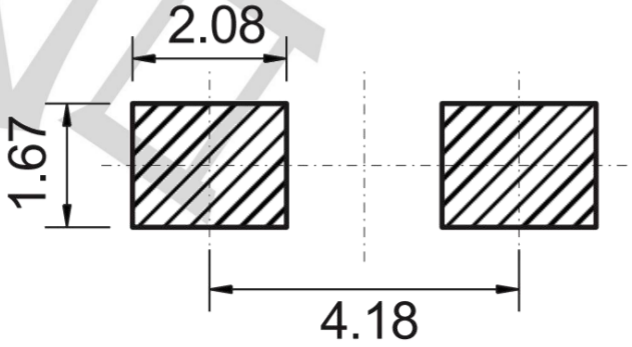
Package Outline Dimensions (unit: mm)

SMA





Mounting Pad Layout (unit: mm)



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BSN20W QM3003J-TP TPD1213A-02SM TPS3809L30DBVR-TP ESD5B5.0ST1G-P FDC6301N-TP FDMS7670AS-TP IRFR2405TRPBF-TP TPADM809SAKSZ TPB05A40-323 TPESD0402G08V BV15C SI3932DV TPB1A30-123 TPESD0504S6-A TPESD5311N TPFMMT493 TPGC12C-1 TPZVN3320FTA LTH7 SN7002W TPS7B6950DBVR-TP TPSPX3819M5-L-3-3 TPWSB5557Z DDTA143ZCA DMP6350S TPADM809LAKSZ TPAPX809S-31SA TPZXMP3A13FTA TPDMG6602SVT