Elektronische Bauelemente

SMAJ Series-C

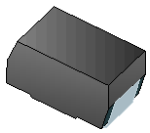
Voltage 5V~440V
400W Peak Power Surface Mount TVS

RoHS Compliant Product
A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260°C/10s at terminals
- Meets MSL level 1

SMA



MECHANICAL DATA

- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: For uni-directional types the band denotes cathode end, no marking on bi-directional types

PACKAGE INFORMATION

Package	MPQ	Leader Size
SMA	5K	13 inch

ORDER INFORMATION

Part Number	Type
SMAJ Series-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Maximum Instantaneous Forward Voltage	25A for unidirectional only [3]	V_F	3.5 / 5	V
	1A for unidirectional only		1.5	
Peak Pulse Power Dissipation [1,2] @10/1000μs waveform		P_{PP}	400	W
Peak Pulse Current [1] @10/1000μs waveform		I_{PP}	See next table.	A
Peak Forward Surge Current [2] @8.3ms single Half Sine-Wave for unidirectional only		I_{FSM}	40	A
Power Dissipation @T_L=75°C		P_D	1	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Typical Thermal Resistance Junction-Ambient		$R_{\theta JA}$	120	°C/W
Typical Thermal Resistance Junction-Case		$R_{\theta JC}$	20	
Typical Thermal Resistance Junction-Lead		$R_{\theta JL}$	30	

Notes:
1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 0.2 x 0.2" (5 x 5mm) copper pads to each terminal.
3. V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Maximum Peak Pulse Current	Maximum Reverse Leakage I_R @V_{RWM}
			Min	Max				
Directional		V_{RWM}	V_{BR}		I_T [4]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	V	V	V	mA	V	A	μA
SMAJ5.0A-C	SMAJ5.0CA-C	5	6.4	7.07	10	9.2	43.38	800
SMAJ6.0A-C	SMAJ6.0CA-C	6	6.67	7.37	10	10.3	38.83	800
SMAJ6.5A-C	SMAJ6.5CA-C	6.5	7.22	7.98	10	11.2	35.71	500
SMAJ7.0A-C	SMAJ7.0CA-C	7	7.78	8.6	10	12	33.33	200
SMAJ7.5A-C	SMAJ7.5CA-C	7.5	8.33	9.21	1	12.9	31.01	100
SMAJ8.0A-C	SMAJ8.0CA-C	8	8.89	9.83	1	13.6	29.41	50
SMAJ8.5A-C	SMAJ8.5CA-C	8.5	9.44	10.4	1	14.4	27.78	10
SMAJ9.0A-C	SMAJ9.0CA-C	9	10	11.1	1	15.4	25.97	5
SMAJ10A-C	SMAJ10CA-C	10	11.1	12.3	1	17	23.53	1
SMAJ11A-C	SMAJ11CA-C	11	12.2	13.5	1	18.2	21.98	1
SMAJ12A-C	SMAJ12CA-C	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A-C	SMAJ13CA-C	13	14.4	15.9	1	21.5	18.6	1
SMAJ14A-C	SMAJ14CA-C	14	15.6	17.2	1	23.2	17.24	1
SMAJ15A-C	SMAJ15CA-C	15	16.7	18.5	1	24.4	16.39	1
SMAJ16A-C	SMAJ16CA-C	16	17.8	19.7	1	26	15.4	1
SMAJ17A-C	SMAJ17CA-C	17	18.9	20.9	1	27.6	14.49	1
SMAJ18A-C	SMAJ18CA-C	18	20	22.1	1	29.2	13.7	1
SMAJ19A-C	SMAJ19CA-C	19	21.1	23.3	1	30.8	13	1
SMAJ20A-C	SMAJ20CA-C	20	22.2	24.5	1	32.4	12.35	1
SMAJ22A-C	SMAJ22CA-C	22	24.4	26.9	1	35.5	11.27	1
SMAJ24A-C	SMAJ24CA-C	24	26.7	29.5	1	38.9	10.28	1
SMAJ26A-C	SMAJ26CA-C	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A-C	SMAJ28CA-C	28	31.1	34.4	1	45.4	8.81	1
SMAJ30A-C	SMAJ30CA-C	30	33.3	36.8	1	48.4	8.26	1
SMAJ33A-C	SMAJ33CA-C	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A-C	SMAJ36CA-C	36	40	44.2	1	58.1	6.88	1
SMAJ40A-C	SMAJ40CA-C	40	44.4	49.1	1	64.5	6.2	1
SMAJ43A-C	SMAJ43CA-C	43	47.8	52.8	1	69.4	5.76	1
SMAJ45A-C	SMAJ45CA-C	45	50	55.3	1	72.7	5.5	1
SMAJ48A-C	SMAJ48CA-C	48	53.3	58.9	1	77.4	5.17	1
SMAJ51A-C	SMAJ51CA-C	51	56.7	62.7	1	82.4	4.85	1
SMAJ54A-C	SMAJ54CA-C	54	60	66.3	1	87.1	4.59	1

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Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Maximum Peak Pulse Current	Maximum Reverse Leakage I_R @V_{RWM}
			Min	Max				
Directional		V_{RWM}	V_{BR}		I_T [4]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	V	V	V	mA	V	A	μA
SMAJ58A-C	SMAJ58CA-C	58	64.4	71.2	1	93.6	4.27	1
SMAJ60A-C	SMAJ60CA-C	60	66.7	73.7	1	96.8	4.13	1
SMAJ64A-C	SMAJ64CA-C	64	71.1	78.6	1	103	3.88	1
SMAJ70A-C	SMAJ70CA-C	70	77.8	86	1	113	3.54	1
SMAJ75A-C	SMAJ75CA-C	75	83.3	92.1	1	121	3.31	1
SMAJ78A-C	SMAJ78CA-C	78	86.7	95.8	1	126	3.17	1
SMAJ80A-C	SMAJ80CA-C	80	88.8	97.6	1	129	3.09	1
SMAJ85A-C	SMAJ85CA-C	85	94.4	104	1	137	2.92	1
SMAJ90A-C	SMAJ90CA-C	90	100	111	1	146	2.74	1
SMAJ100A-C	SMAJ100CA-C	100	111	123	1	162	2.47	1
SMAJ110A-C	SMAJ110CA-C	110	122	135	1	177	2.26	1
SMAJ120A-C	SMAJ120CA-C	120	133	147	1	193	2.07	1
SMAJ130A-C	SMAJ130CA-C	130	144	159	1	209	1.91	1
SMAJ140A-C	SMAJ140CA-C	140	155	171	1	226.8	1.76	1
SMAJ150A-C	SMAJ150CA-C	150	167	185	1	243	1.65	1
SMAJ160A-C	SMAJ160CA-C	160	178	197	1	259	1.54	1
SMAJ170A-C	SMAJ170CA-C	170	189	209	1	275	1.45	1
SMAJ180A-C	SMAJ180CA-C	180	200	220	1	291.6	1.37	1
SMAJ190A-C	SMAJ190CA-C	190	211	232	1	307.8	1.3	1
SMAJ200A-C	SMAJ200CA-C	200	224	247	1	324	1.23	1
SMAJ220A-C	SMAJ220CA-C	220	246	272	1	356	1.12	1
SMAJ250A-C	SMAJ250CA-C	250	279	309	1	405	0.99	1
SMAJ300A-C	SMAJ300CA-C	300	335	371	1	486	0.82	1
SMAJ350A-C	SMAJ350CA-C	350	391	432	1	567	0.71	1
SMAJ400A-C	SMAJ400CA-C	400	447	494	1	648	0.62	1
SMAJ440A-C	SMAJ440CA-C	440	492	543	1	713	0.56	1

Notes:

1. Pulse test: tp≤50ms
2. Surge current waveform per Fig.3 and derated per Fig.2.
3. For Bi-directional types having V_{RWM} of 10 Volts and less, the I_D limit is doubled.

CHARACTERISTICS CURVE

FIG1:Peak Pulse Power Rating Curve

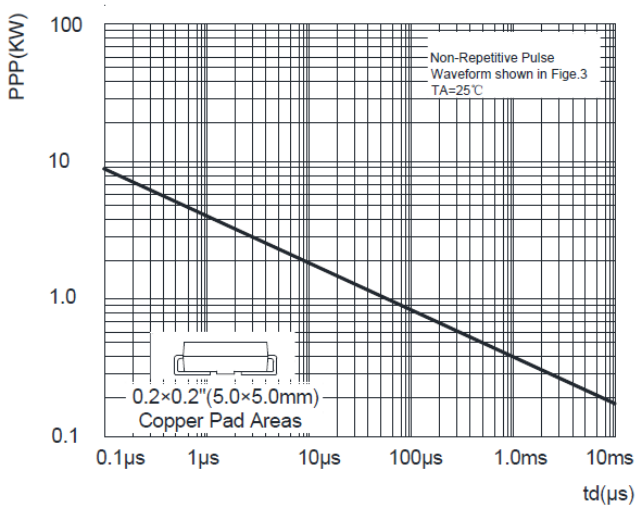


FIG2: Pulse Power or Current vs. Initial Junction Temperature

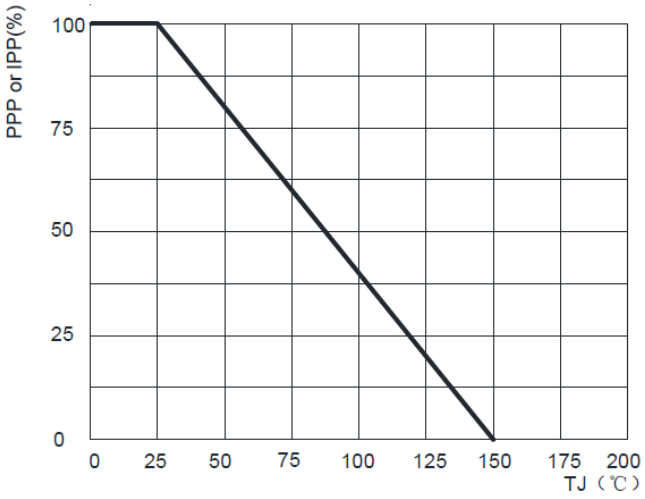


FIG3: Pulse Waveform

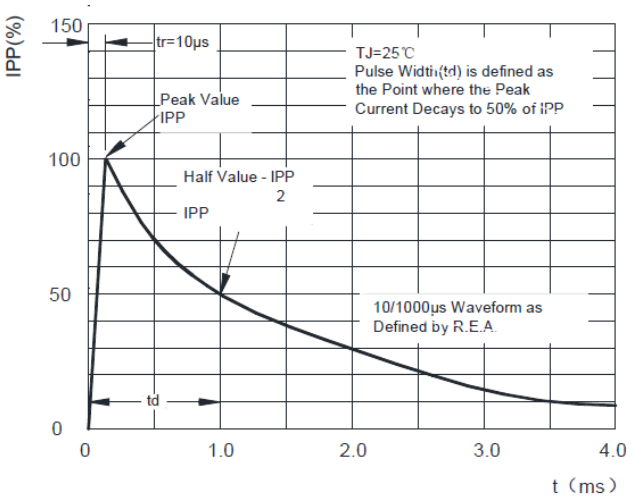


FIG4:Typical Transient Thermal Impedance

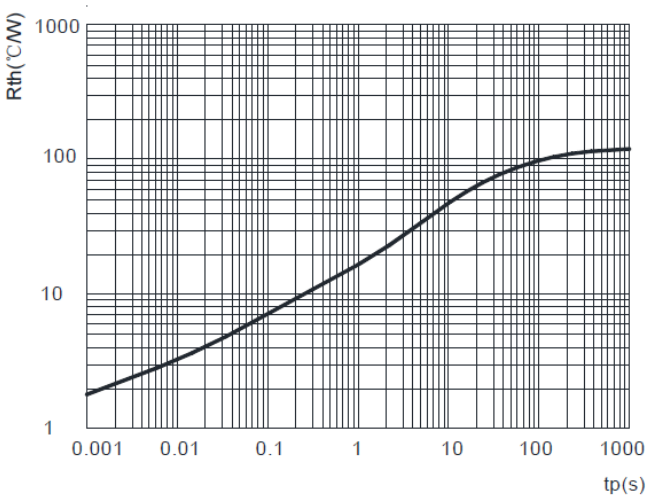
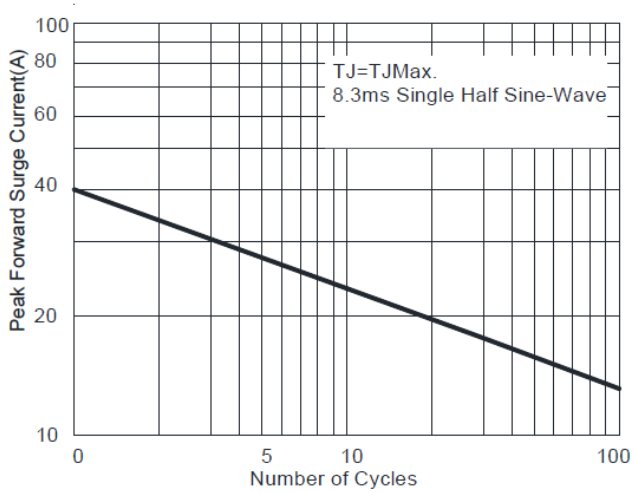
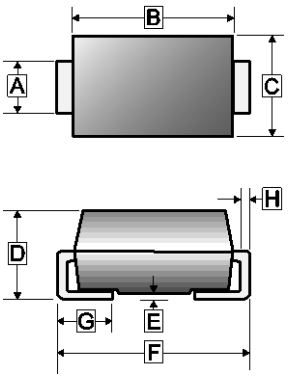


FIG5: Maximum Non-Repetitive Surge Current



PACKAGE OUTLINE DIMENSIONS

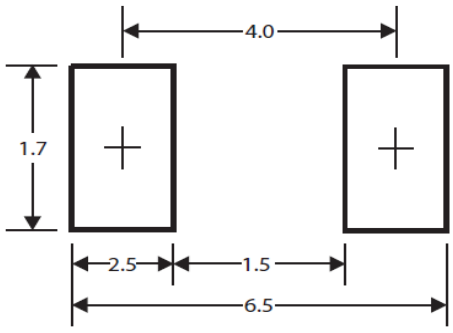
SMA



REF.	Millimeter	
	Min.	Max.
A	1.23	1.65
B	3.99	4.75
C	2.30	2.90
D	1.90	2.62
E	-	0.3
F	4.70	5.28
G	0.75	1.52
H	0.15	0.31

MOUNTING PAD LAYOUT

SMA



*Dimensions in millimeters