

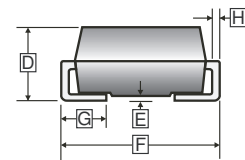
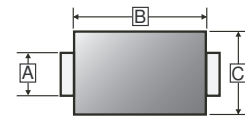
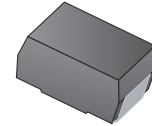
RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- Qualified to AEC-Q101 standards for high reliability
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Optimized for LAN protection applications
- Idea for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
- Idea for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-4)
- Low profile package with built-in strain relief for surface mounted applications
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 400W peak pulse power capability with a 10/1000us waveform, repetition rate(duty cycle): 0.01%(300W above 78V)
- Very fast response time
- High temperature soldering guaranteed: 250°C/10 seconds at terminals

SMA



MECHANICAL DATA

- Case: Molded Plastic
- Lead: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: For uni-directional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting position: Any

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

PACKAGE INFORMATION

Package	MPQ	Leader Size
SMA	5K	13 inch

ORDER INFORMATION

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

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25°C ambient temperature unless otherwise specified. Single phase half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.)

Parameter	Symbol	Ratings	Unit
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
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance Ratings			
Typical Thermal Resistance Junction-Ambient ³	R _{θJA}	120	°C/W
Typical Thermal Resistance Junction-Lead	R _{θJL}	30	

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above T_a=25°C per Fig. 2. Rating is 300W above 78V.
2. Mounted on 0.2 x 0.2" (5 x 5 mm) copper pads to each terminal.
3. Mounted on minimum recommended pad layout.

ELECTRICAL CHARACTERISTICS (Rating $T_A=25^\circ\text{C}$ 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	V_C	I_{PP}	I_R
Uni	Bi	V	V	V	mA	V	A	μA
SMAJ5.0ACR-C	-	5	6.4	7.07	10	9.2	43.5	800
-	SMAJ5.0CACR-C	5	6.4	7.25	10	9.2	43.5	800
SMAJ6.0ACR-C	SMAJ6.0CACR-C	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5ACR-C	SMAJ6.5CACR-C	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0ACR-C	SMAJ7.0CACR-C	7	7.78	8.6	10	12	33.3	200
SMAJ7.5ACR-C	SMAJ7.5CACR-C	7.5	8.33	9.21	1	12.9	31	100
SMAJ8.0ACR-C	SMAJ8.0CACR-C	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5ACR-C	SMAJ8.5CACR-C	8.5	9.44	10.4	1	14.4	27.8	10
SMAJ9.0ACR-C	SMAJ9.0CACR-C	9	10	11.1	1	15.4	26	5
SMAJ10ACR-C	SMAJ10CACR-C	10	11.1	12.3	1	17	23.5	1
SMAJ11ACR-C	SMAJ11CACR-C	11	12.2	13.5	1	18.2	22	1
SMAJ12ACR-C	SMAJ12CACR-C	12	13.3	14.7	1	19.9	20.1	1
SMAJ13ACR-C	SMAJ13CACR-C	13	14.4	15.9	1	21.5	18.6	1
SMAJ14ACR-C	SMAJ14CACR-C	14	15.6	17.2	1	23.2	17.2	1
SMAJ15ACR-C	SMAJ15CACR-C	15	16.7	18.5	1	24.4	16.4	1
SMAJ16ACR-C	SMAJ16CACR-C	16	17.8	19.7	1	26.0	15.4	1
SMAJ17ACR-C	SMAJ17CACR-C	17	18.9	20.9	1	27.6	14.5	1
SMAJ18ACR-C	SMAJ18CACR-C	18	20	22.1	1	29.2	13.7	1
SMAJ20ACR-C	SMAJ20CACR-C	20	22.2	24.5	1	32.4	12.3	1
SMAJ22ACR-C	SMAJ22CACR-C	22	24.4	26.9	1	35.5	11.3	1
SMAJ24ACR-C	SMAJ24CACR-C	24	26.7	29.5	1	38.9	10.3	1
SMAJ26ACR-C	SMAJ26CACR-C	26	28.9	31.9	1	42.1	9.5	1
SMAJ28ACR-C	SMAJ28CACR-C	28	31.1	34.4	1	45.4	8.8	1
SMAJ30ACR-C	SMAJ30CACR-C	30	33.3	36.8	1	48.4	8.3	1
SMAJ33ACR-C	SMAJ33CACR-C	33	36.7	40.6	1	53.3	7.5	1
SMAJ36ACR-C	SMAJ36CACR-C	36	40	44.2	1	58.1	6.9	1
SMAJ40ACR-C	SMAJ40CACR-C	40	44.4	49.1	1	64.5	6.2	1
SMAJ43ACR-C	SMAJ43CACR-C	43	47.8	52.8	1	69.4	5.8	1
SMAJ45ACR-C	SMAJ45CACR-C	45	50	55.3	1	72.7	5.5	1
SMAJ48ACR-C	SMAJ48CACR-C	48	53.3	58.9	1	77.4	5.2	1
SMAJ51ACR-C	SMAJ51CACR-C	51	56.7	62.7	1	82.4	4.9	1
SMAJ54ACR-C	SMAJ54CACR-C	54	60	66.3	1	87.1	4.6	1

ELECTRICAL CHARACTERISTICS (Rating $T_A=25^{\circ}\text{C}$ 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	V_C	I_{PP}	I_R
Uni	Bi	V	V	V	mA	V	A	μA
SMAJ58ACR-C	SMAJ58CACR-C	58	64.4	71.2	1	93.6	4.3	1
SMAJ60ACR-C	SMAJ60CACR-C	60	66.7	73.7	1	96.8	4.1	1
SMAJ64ACR-C	SMAJ64CACR-C	64	71.1	78.6	1	103	3.9	1
SMAJ70ACR-C	SMAJ70CACR-C	70	77.8	86	1	113	3.5	1
SMAJ75ACR-C	SMAJ75CACR-C	75	83.3	92.1	1	121	3.3	1
SMAJ78ACR-C	SMAJ78CACR-C	78	86.7	95.8	1	126	3.2	1
SMAJ85ACR-C	SMAJ85CACR-C	85	94.4	104	1	137	2.2	1
SMAJ90ACR-C	SMAJ90CACR-C	90	100	111	1	146	2.1	1
SMAJ100ACR-C	SMAJ100CACR-C	100	111	123	1	162	1.9	1
SMAJ110ACR-C	SMAJ110CACR-C	110	122	135	1	177	1.7	1
SMAJ120ACR-C	SMAJ120CACR-C	120	133	147	1	193	1.6	1
SMAJ130ACR-C	SMAJ130CACR-C	130	144	159	1	209	1.4	1
SMAJ150ACR-C	SMAJ150CACR-C	150	167	185	1	243	1.2	1
SMAJ160ACR-C	SMAJ160CACR-C	160	178	197	1	259	1.2	1
SMAJ170ACR-C	SMAJ170CACR-C	170	189	209	1	275	1.09	1
SMAJ180ACR-C	SMAJ180CACR-C	180	201	222	1	292	1.4	1
SMAJ200ACR-C	SMAJ200CACR-C	200	224	247	1	324	1.2	1
SMAJ220ACR-C	SMAJ220CACR-C	220	246	272	1	356	1.1	1
SMAJ250ACR-C	SMAJ250CACR-C	250	279	309	1	405	1	1
SMAJ300ACR-C	SMAJ300CACR-C	300	335	371	1	486	0.8	1
SMAJ350ACR-C	SMAJ350CACR-C	350	391	432	1	567	0.7	1
SMAJ400ACR-C	SMAJ400CACR-C	400	447	494	1	648	0.6	1
SMAJ440ACR-C	SMAJ440CACR-C	440	492	543	1	713	0.6	1

Notes:

1. $V_{(BR)}$ measured after I_T applied for 300us square wave pulse or equivalent.
2. Surge current waveform per Fig. 3 and derate per Fig. 2.
3. For Bi-directional types having V_{RWM} of 10 Volts and less, the I_D limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35.

CHARACTERISTICS CURVE

Fig. 1 – Peak Pulse Power Rating Curve

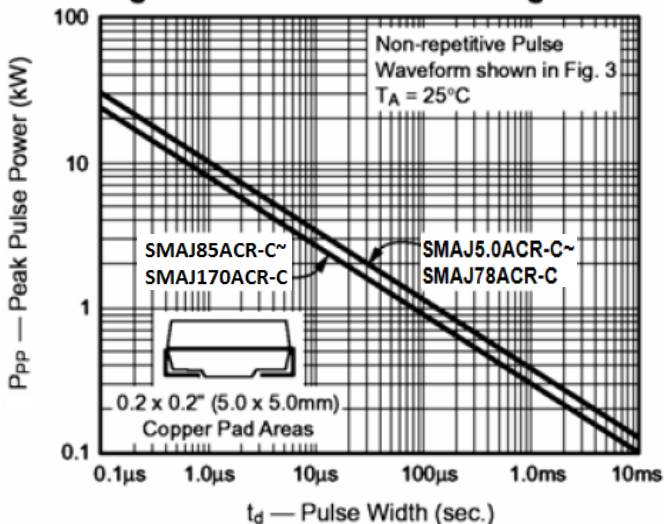


Fig. 2 – Pulse Derating Curve

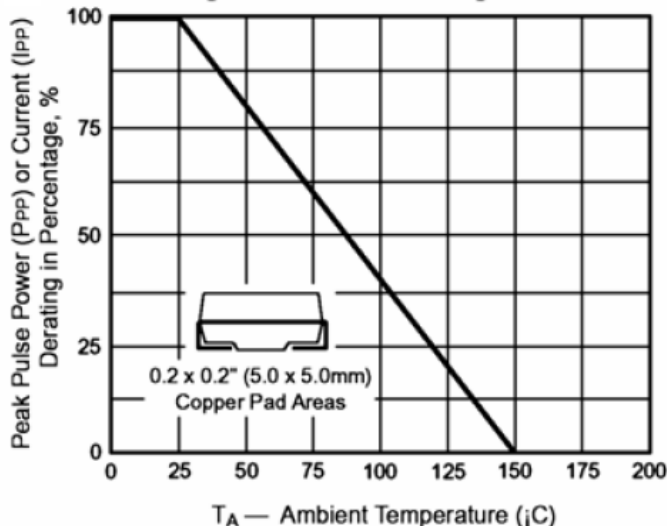


Fig. 3 – Pulse Waveform

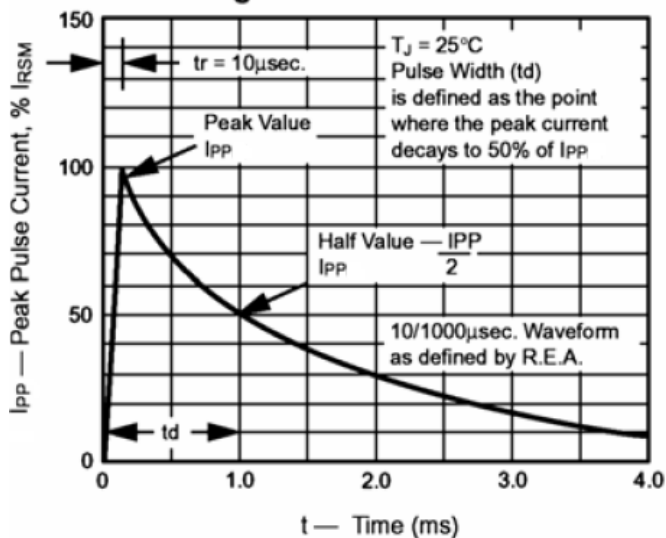


Fig. 4 – Typical Junction Capacitance

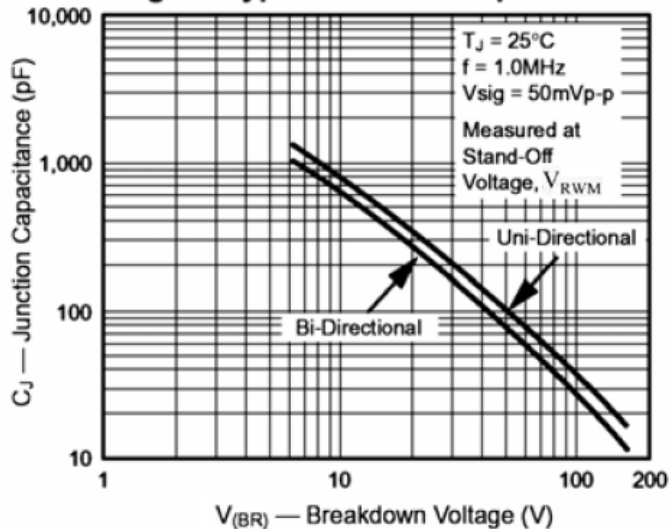


Fig. 5 – Typical Transient Thermal Impedance

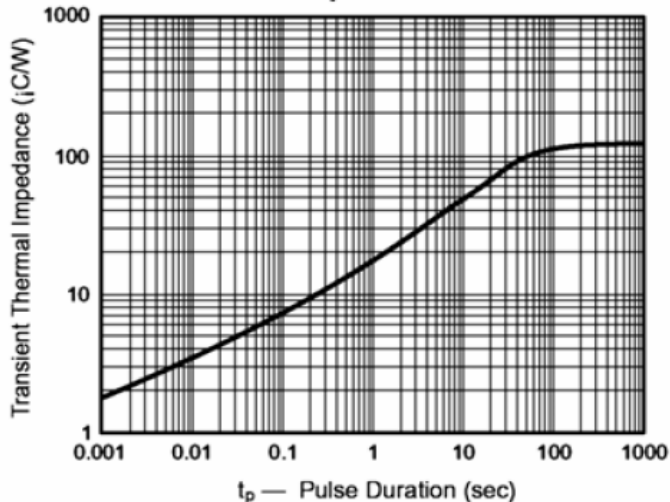


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

