

# S-SMAJ\*\*\* C ASeries

**SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR**

**VOLTAGE 5.0 TO 440 Volts**

**400 Watt Peak Pulse Power**

## FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* For surface mounted applications in order to optimize board space
- \* Low profile package
- \* Built-in strain relief
- \* Glass passivated junction
- \* Low inductance
- \* Excellent clamping Capability
- \* Repetition Rate (duty cycle):0.01%

**Terminals:** Plated leads, solderable per

- \* Typical IR less than 1mA above 10V
- \* High temperature soldering guaranteed: 260°C/10 seconds,

\* S- Prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



we declare that the material of product is halogen free (green epoxy compound).

## MECHANICAL DATA

**Ase:** JEDEC SMA molded plastic

**Terminals:** Plated leads, solderable per MIL-STD-202, Method 208

**Polarity:** Without Color band

**Mounting Position:** Any

**Weight:** 0.066 gram

## 1.DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C Suffix for types S-SMAJ5.0A thru types S-SMAJ250A

## MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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

For Capacitive load, derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (Note 1)	$P_{PPM}$	Minimum400	Watts
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ (Note 2)	$P_{M(AV)}$	1.0	Watts
Typical thermal resistance (Note 3)	$R_{\theta JA}$	150	°C/W
	$R_{\theta JC}$	45	
Operating Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2.
2. Mounted on Copper Leaf area of 1.57in<sup>2</sup>(40mm<sup>2</sup>).
3. 8.0mm<sup>2</sup> (.013mm thick) land areas

## S-SMAJ\*\*\*CA Series

Bi-Directional Part Number	Device marking code	Reverse Stand-off Voltage VRWM (V)	Breakdown Voltage VBR (V) Min. @IT	Breakdown Voltage VBR (V) Max. @IT	Test Current IT (mA)	Maximum Clamping Voltage @IPP VC (V)	Peak Pulse Current Ipp (A)	Reverse Leakage @VRWM IR (uA)
S-SMAJ5.0CA	AE	5.00	6.40	7.00	10.00	9.20	43.50	800
S-SMAJ6.0CA	AG	6.00	6.67	7.37	10.00	10.30	38.80	800
S-SMAJ6.5CA	AK	6.50	7.22	7.98	10.00	11.20	35.70	500
S-SMAJ7.0CA	AM	7.00	7.78	8.60	10.00	12.00	33.30	200
S-SMAJ7.5CA	AP	7.50	8.33	9.21	1.00	12.90	31.00	100
S-SMAJ8.0CA	AR	8.00	8.89	9.83	1.00	13.60	29.40	50
S-SMAJ8.5CA	AT	8.50	9.44	10.40	1.00	14.40	27.80	20
S-SMAJ9.0CA	AV	9.00	10.00	11.10	1.00	15.40	26.00	10
S-SMAJ10CA	AX	10.00	11.10	12.30	1.00	17.00	23.50	1
S-SMAJ11CA	AZ	11.00	12.20	13.50	1.00	18.20	22.00	1
S-SMAJ12CA	BE	12.00	13.30	14.70	1.00	19.90	20.10	1
S-SMAJ13CA	BG	13.00	14.40	15.90	1.00	21.50	18.60	1
S-SMAJ14CA	BK	14.00	15.60	17.20	1.00	23.20	17.20	1
S-SMAJ15CA	BM	15.00	16.70	18.50	1.00	24.40	16.40	1
S-SMAJ16CA	BP	16.00	17.80	19.70	1.00	26.00	15.40	1
S-SMAJ17CA	BR	17.00	18.90	20.90	1.00	27.60	14.50	1
S-SMAJ18CA	BT	18.00	20.00	22.10	1.00	29.20	13.70	1
S-SMAJ20CA	BV	20.00	22.20	24.50	1.00	32.40	12.30	1
S-SMAJ22CA	BX	22.00	24.40	26.90	1.00	35.50	11.30	1
S-SMAJ24CA	BZ	24.00	26.70	29.50	1.00	38.90	10.30	1
S-SMAJ26CA	CE	26.00	28.90	31.90	1.00	42.10	9.50	1
S-SMAJ28CA	CG	28.00	31.10	34.40	1.00	45.40	8.80	1
S-SMAJ30CA	CK	30.00	33.30	36.80	1.00	48.40	8.30	1
S-SMAJ33CA	CM	33.00	36.70	40.60	1.00	53.30	7.50	1
S-SMAJ36CA	CP	36.00	40.00	44.20	1.00	58.10	6.90	1
S-SMAJ40CA	CR	40.00	44.40	49.10	1.00	64.50	6.20	1
S-SMAJ43CA	CT	43.00	47.80	52.80	1.00	69.40	5.80	1
S-SMAJ45CA	CV	45.00	50.00	55.30	1.00	72.70	5.50	1
S-SMAJ48CA	CX	48.00	53.30	58.90	1.00	77.40	5.20	1
S-SMAJ51CA	CZ	51.00	56.70	62.70	1.00	82.40	4.90	1
S-SMAJ54CA	RE	54.00	60.00	66.30	1.00	87.10	4.60	1
S-SMAJ58CA	RG	58.00	64.40	71.20	1.00	93.60	4.30	1
S-SMAJ60CA	RK	60.00	66.70	73.70	1.00	96.80	4.10	1
S-SMAJ64CA	RM	64.00	71.10	78.60	1.00	103.00	3.90	1
S-SMAJ70CA	RP	70.00	77.80	86.00	1.00	113.00	3.50	1
S-SMAJ75CA	RR	75.00	83.30	92.10	1.00	121.00	3.30	1
S-SMAJ78CA	RT	78.00	86.70	95.80	1.00	126.00	3.20	1
S-SMAJ85CA	RV	85.00	94.40	104.00	1.00	137.00	2.90	1
S-SMAJ90CA	RX	90.00	100.00	111.00	1.00	146.00	2.70	1
S-SMAJ100CA	RZ	100.00	111.00	123.00	1.00	162.00	2.50	1
S-SMAJ110CA	SE	110.00	122.00	135.00	1.00	177.00	2.30	1
S-SMAJ120CA	SG	120.00	133.00	147.00	1.00	193.00	2.10	1
S-SMAJ130CA	SK	130.00	144.00	159.00	1.00	209.00	1.90	1
S-SMAJ150CA	SM	150.00	167.00	185.00	1.00	243.00	1.60	1
S-SMAJ160CA	SP	160.00	178.00	197.00	1.00	259.00	1.50	1
S-SMAJ170CA	SR	170.00	189.00	209.00	1.00	275.00	1.50	1
S-SMAJ180CA	ST	180.00	198.00	221.00	1.00	291.00	1.40	1
S-SMAJ190CA	SV	190.00	209.00	233.00	1.00	307.00	1.30	1
S-SMAJ200CA	SX	200.00	220.00	246.00	1.00	324.00	1.30	1
S-SMAJ220CA	SY	220.00	246.00	272.00	1.00	356.00	1.20	1
S-SMAJ250CA	SZ	250.00	279.00	309.00	1.00	405.00	1.00	1
S-SMAJ300CA	TE	300.00	335.00	371.00	1.00	486.00	0.80	1
S-SMAJ350CA	TG	350.00	391.00	432.00	1.00	567.00	0.70	1
S-SMAJ400CA	TK	400.00	447.00	494.00	1.00	648.00	0.60	1
S-SMAJ440CA	TM	440.00	492.00	543.00	1.00	713.00	0.60	1

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### 2.Ratings and Characteristic Curves ( TA = 25°C unless otherwise noted )

Fig. 1-Peak Pulse Power Rating Curve

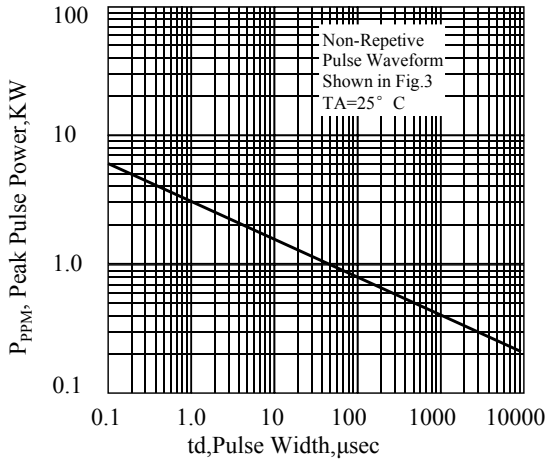


Fig. 2-Pulse Derating Curve

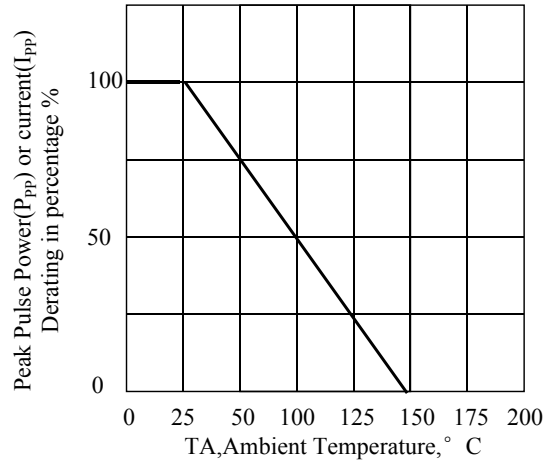


Fig. 3-Pulse Waveform

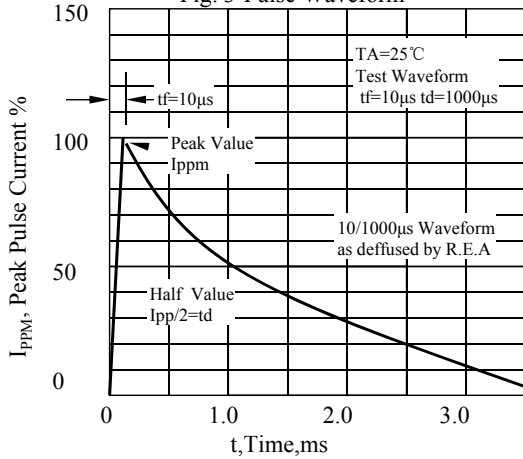


Fig. 4-Typical Junction Capacitance Unidirectional

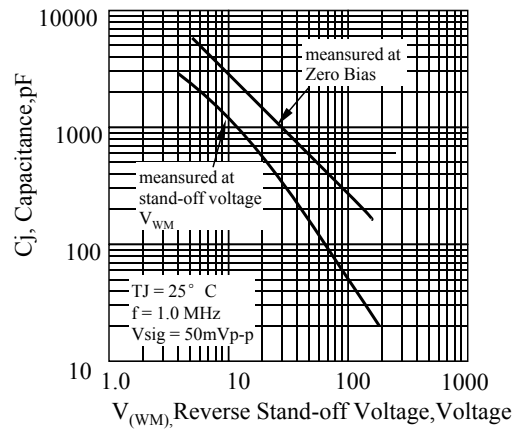


Fig 5. - typical transient thermal impedance

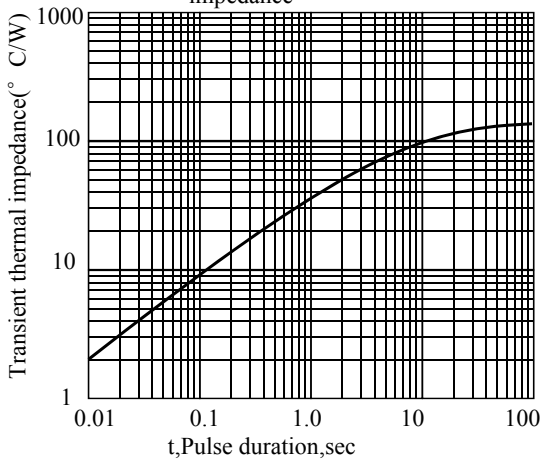
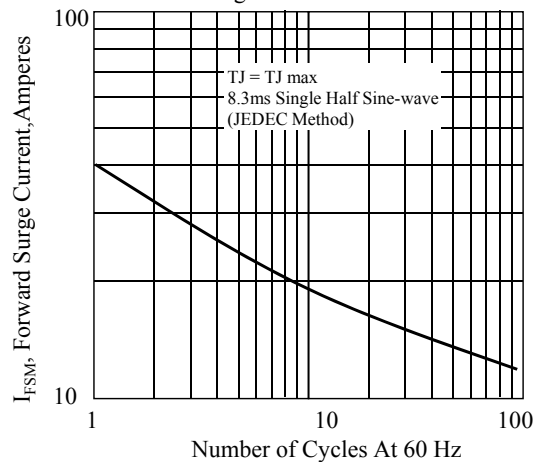


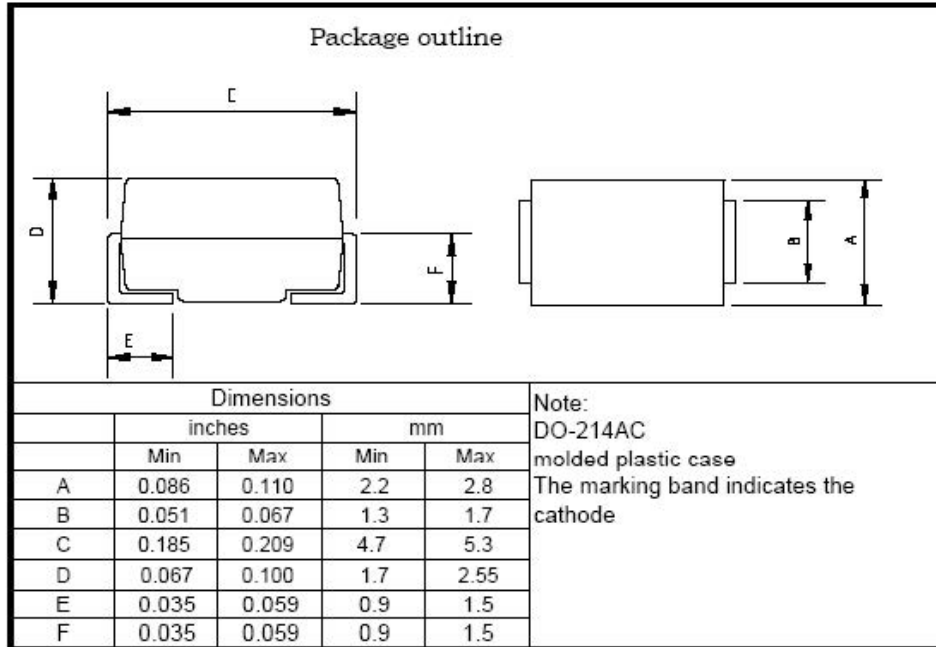
Fig. 6-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional



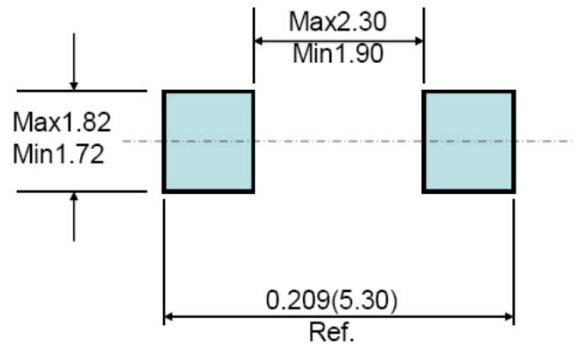
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### 3. dimension:

SMA



### Mounting Pad Layout ---SMA



## S-SMAJ\*\*\* CASeries

### 4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	谭志伟	2017. 11. 13
2	增加电压到440V	谭志伟	2021. 08. 16