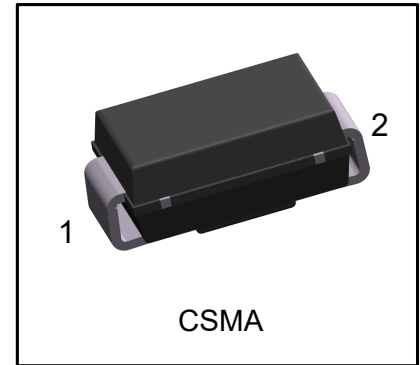


# S-CSMAJ\*\*\*CA

Surface Mount Transient Voltage Suppressors  
Voltage 5.0 to 250 Volts 400 Watt Peak Pulse Power

## 1. FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- 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%
- Fast response time: typically less than 1.0ps
- Typical IR less than 1mA above 10V
- High temperature soldering guaranteed: 260°C/10 seconds
- We declare that the material of product complies with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



## 2. MECHANICAL DATA

**Case:** JEDEC DO-214AC, molded plastic over glass die

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end. Bipolar without color band

**Mounting Position:** Any

**Weight:** 0.07g

## 3. 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%.

PARAMETER	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (Note 1)	P <sub>PPM</sub>	400	W
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ (Note 2)	P <sub>M(AV)</sub>	1.0	W
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-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>).

#### 4. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Bi-Directional Part Number	Device Marking	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-CSMAJ5.0CA	AE	5.00	6.40	7.00	10.00	9.20	43.50	800
S-CSMAJ6.0CA	AG	6.00	6.67	7.37	10.00	10.30	38.80	800
S-CSMAJ6.5CA	AK	6.50	7.22	7.98	10.00	11.20	35.70	500
S-CSMAJ7.0CA	AM	7.00	7.78	8.60	10.00	12.00	33.30	200
S-CSMAJ7.5CA	AP	7.50	8.33	9.21	1.00	12.90	31.00	100
S-CSMAJ8.0CA	AR	8.00	8.89	9.83	1.00	13.60	29.40	50
S-CSMAJ8.5CA	AT	8.50	9.44	10.40	1.00	14.40	27.80	20
S-CSMAJ9.0CA	AV	9.00	10.00	11.10	1.00	15.40	26.00	10
S-CSMAJ10CA	AX	10.00	11.10	12.30	1.00	17.00	23.50	1
S-CSMAJ11CA	AZ	11.00	12.20	13.50	1.00	18.20	22.00	1
S-CSMAJ12CA	BE	12.00	13.30	14.70	1.00	19.90	20.10	1
S-CSMAJ13CA	BG	13.00	14.40	15.90	1.00	21.50	18.60	1
S-CSMAJ14CA	BK	14.00	15.60	17.20	1.00	23.20	17.20	1
S-CSMAJ15CA	BM	15.00	16.70	18.50	1.00	24.40	16.40	1
S-CSMAJ16CA	BP	16.00	17.80	19.70	1.00	26.00	15.40	1
S-CSMAJ17CA	BR	17.00	18.90	20.90	1.00	27.60	14.50	1
S-CSMAJ18CA	BT	18.00	20.00	22.10	1.00	29.20	13.70	1
S-CSMAJ20CA	BV	20.00	22.20	24.50	1.00	32.40	12.30	1
S-CSMAJ22CA	BX	22.00	24.40	26.90	1.00	35.50	11.30	1
S-CSMAJ24CA	BZ	24.00	26.70	29.50	1.00	38.90	10.30	1
S-CSMAJ26CA	CE	26.00	28.90	31.90	1.00	42.10	9.50	1
S-CSMAJ28CA	CG	28.00	31.10	34.40	1.00	45.40	8.80	1
S-CSMAJ30CA	CK	30.00	33.30	36.80	1.00	48.40	8.30	1
S-CSMAJ33CA	CM	33.00	36.70	40.60	1.00	53.30	7.50	1
S-CSMAJ36CA	CP	36.00	40.00	44.20	1.00	58.10	6.90	1
S-CSMAJ40CA	CR	40.00	44.40	49.10	1.00	64.50	6.20	1
S-CSMAJ43CA	CT	43.00	47.80	52.80	1.00	69.40	5.80	1
S-CSMAJ45CA	CV	45.00	50.00	55.30	1.00	72.70	5.50	1
S-CSMAJ48CA	CX	48.00	53.30	58.90	1.00	77.40	5.20	1
S-CSMAJ51CA	CZ	51.00	56.70	62.70	1.00	82.40	4.90	1
S-CSMAJ54CA	RE	54.00	60.00	66.30	1.00	87.10	4.60	1
S-CSMAJ58CA	RG	58.00	64.40	71.20	1.00	93.60	4.30	1
S-CSMAJ60CA	RK	60.00	66.70	73.70	1.00	96.80	4.10	1
S-CSMAJ64CA	RM	64.00	71.10	78.60	1.00	103.00	3.90	1
S-CSMAJ70CA	RP	70.00	77.80	86.00	1.00	113.00	3.50	1
S-CSMAJ75CA	RR	75.00	83.30	92.10	1.00	121.00	3.30	1
S-CSMAJ78CA	RT	78.00	86.70	95.80	1.00	126.00	3.20	1
S-CSMAJ85CA	RV	85.00	94.40	104.00	1.00	137.00	2.90	1
S-CSMAJ90CA	RX	90.00	100.00	111.00	1.00	146.00	2.70	1
S-CSMAJ100CA	RZ	100.00	111.00	123.00	1.00	162.00	2.50	1
S-CSMAJ110CA	SE	110.00	122.00	135.00	1.00	177.00	2.30	1
S-CSMAJ120CA	SG	120.00	133.00	147.00	1.00	193.00	2.10	1
S-CSMAJ130CA	SK	130.00	144.00	159.00	1.00	209.00	1.90	1
S-CSMAJ150CA	SM	150.00	167.00	185.00	1.00	243.00	1.60	1
S-CSMAJ160CA	SP	160.00	178.00	197.00	1.00	259.00	1.50	1
S-CSMAJ170CA	SR	170.00	189.00	209.00	1.00	275.00	1.50	1
S-CSMAJ180CA	ST	180.00	198.00	221.00	1.00	291.00	1.40	1
S-CSMAJ190CA	SV	190.00	209.00	233.00	1.00	307.00	1.30	1
S-CSMAJ200CA	SX	200.00	220.00	246.00	1.00	324.00	1.20	1
S-CSMAJ220CA	SY	220.00	246.00	272.00	1.00	356.00	1.10	1
S-CSMAJ250CA	SZ	250.00	279.00	309.00	1.00	405.00	1.00	1

## 5. ELECTRICAL CHARACTERISTIC CURVES

Fig. 1-Peak Pulse Power Rating Curve

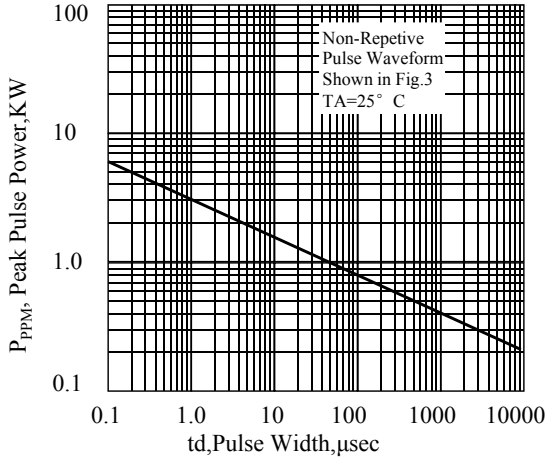


Fig. 2-Pulse Derating Curve

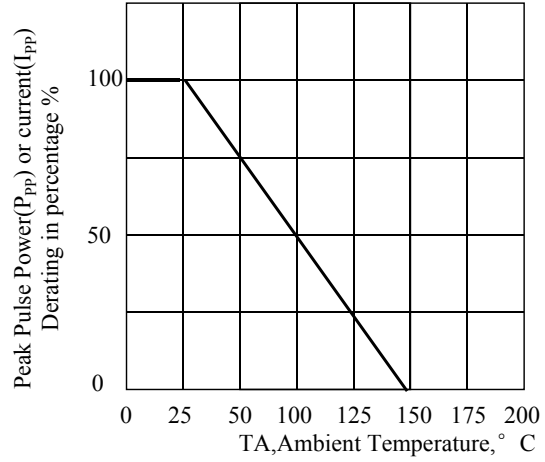


Fig. 3-Pulse Waveform

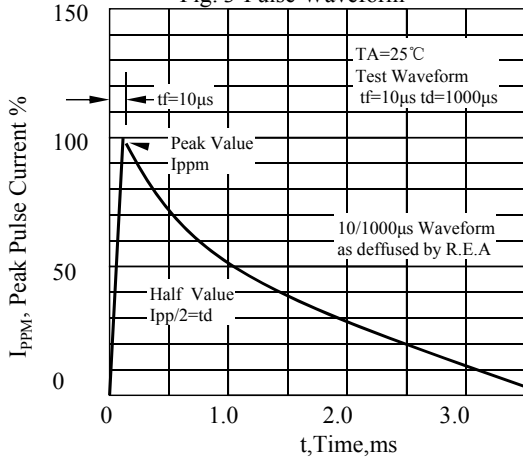


Fig. 4-Typical Junction Capacitance Unidirectional

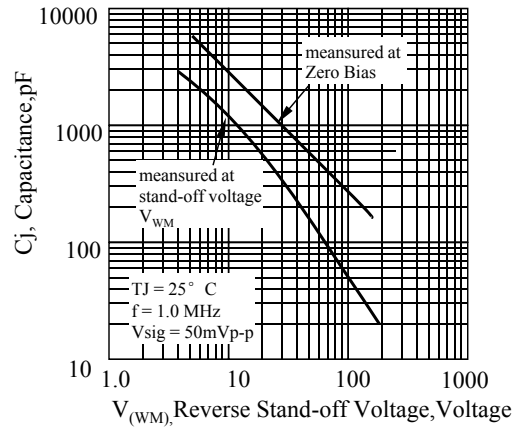


Fig. 5 - typical transient thermal impedance

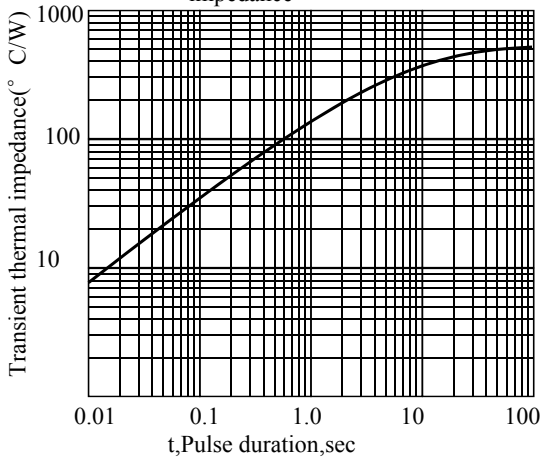
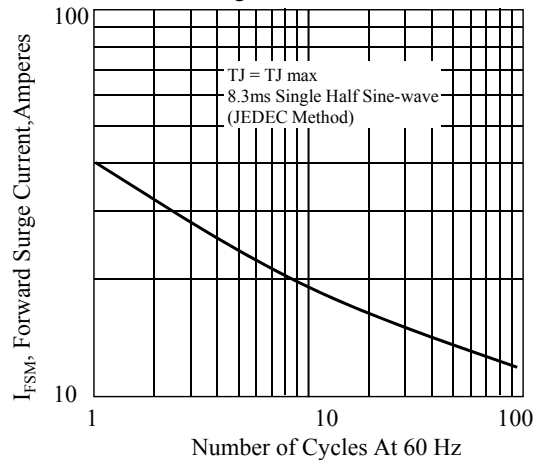
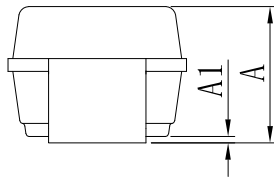
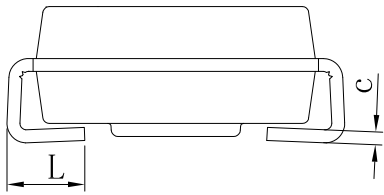


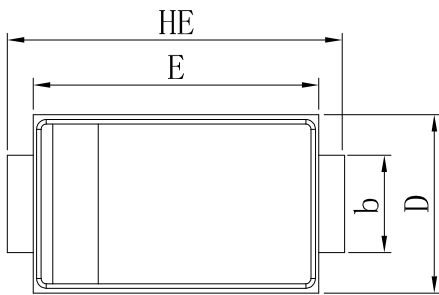
Fig. 6-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional



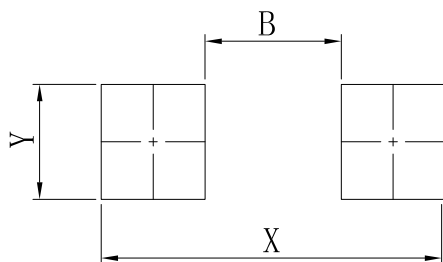
## 6. OUTLINE AND DIMENSIONS



CSMA			
DIM	MIN	TYP	MAX
A	1.97	2.10	2.29
A1	0.05	0.10	0.20
b	1.35	1.50	1.65
c	0.10	0.20	0.30
D	2.40	2.75	2.92
E	4.10	4.40	4.57
HE	4.70	5.27	5.59
L	0.76	1.20	1.52
All Dimensions in mm			



## 7. SOLDERING FOOTPRINT



CSMA		
DIM	MIN	MAX
X	5.30REF	
Y	1.72	1.82
B	1.90	2.30

## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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