

SMAJ***C* Series

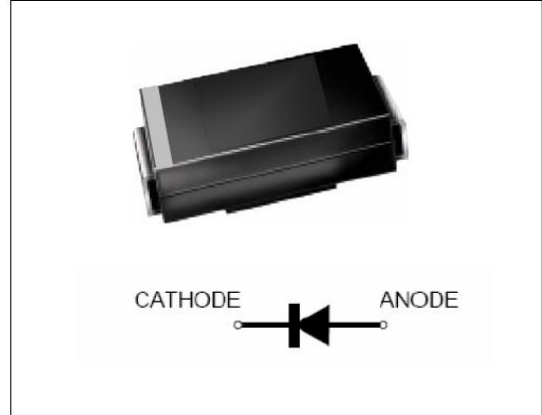
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5.0 TO 250 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%
- * Fast response time: typically less than 1.0ps from 0 Volts to V(BR) for unidirectional types
- * Typical IR less than 1mA above 10V
- * High temperature soldering guaranteed:
260°C/10 seconds,



We declare that the material of product compliance with ROHS requirements

MECHANICAL DATA

Case: JEDEC DO-214AC molded plastic

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

Polarity: Color band denoted cathode except Bipolar

Mounting Position: Any

Weight: 0.0023 ounce, 0.065 gram

1.DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMAJ5.0CA thru types SMAJ250CA

Electrical characteristics apply in both directions.

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}	Minimum 400	Watts
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ (Note 2)	$P_{M(AV)}$	1.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 3)	I_{FSM}	30	Amps
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°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 1.57in²(40mm²).
3. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.

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Uni-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)
SMAJ5.0C	AD	5.00	6.40	7.00	10.00	9.20	43.50	800
SMAJ5.0CA	AE	5.00	6.40	7.00	10.00	9.20	43.50	800
SMAJ6.0C	AF	6.00	6.67	7.37	10.00	10.30	38.80	800
SMAJ6.0CA	AG	6.00	6.67	7.37	10.00	10.30	38.80	800
SMAJ6.5C	AH	6.50	7.22	7.98	10.00	11.20	35.70	500
SMAJ6.5CA	AK	6.50	7.22	7.98	10.00	11.20	35.70	500
SMAJ7.0C	AL	7.00	7.78	8.60	10.00	12.00	33.30	200
SMAJ7.0CA	AM	7.00	7.78	8.60	10.00	12.00	33.30	200
SMAJ7.5C	AN	7.50	8.33	9.21	1.00	12.90	31.00	100
SMAJ7.5CA	AP	7.50	8.33	9.21	1.00	12.90	31.00	100
SMAJ8.0C	AQ	8.00	8.89	9.83	1.00	13.60	29.40	50
SMAJ8.0CA	AR	8.00	8.89	9.83	1.00	13.60	29.40	50
SMAJ8.5C	AS	8.50	9.44	10.40	1.00	14.40	27.80	20
SMAJ8.5CA	AT	8.50	9.44	10.40	1.00	14.40	27.80	20
SMAJ9.0C	AU	9.00	10.00	11.10	1.00	15.40	26.00	10
SMAJ9.0CA	AV	9.00	10.00	11.10	1.00	15.40	26.00	10
SMAJ10C	AW	10.00	11.10	12.30	1.00	17.00	23.50	5
SMAJ10CA	AX	10.00	11.10	12.30	1.00	17.00	23.50	5
SMAJ11C	AY	11.00	12.20	13.50	1.00	18.20	22.00	5
SMAJ11CA	AZ	11.00	12.20	13.50	1.00	18.20	22.00	5
SMAJ12C	BD	12.00	13.30	14.70	1.00	19.90	20.10	5
SMAJ12CA	BE	12.00	13.30	14.70	1.00	19.90	20.10	5
SMAJ13C	BF	13.00	14.40	15.90	1.00	21.50	18.60	5
SMAJ13CA	BG	13.00	14.40	15.90	1.00	21.50	18.60	5
SMAJ14C	BH	14.00	15.60	17.20	1.00	23.20	17.20	5
SMAJ14CA	BK	14.00	15.60	17.20	1.00	23.20	17.20	5
SMAJ15C	BL	15.00	16.70	18.50	1.00	24.40	16.40	5
SMAJ15CA	BM	15.00	16.70	18.50	1.00	24.40	16.40	5
SMAJ16C	BN	16.00	17.80	19.70	1.00	26.00	15.40	5
SMAJ16CA	BP	16.00	17.80	19.70	1.00	26.00	15.40	5
SMAJ17C	BQ	17.00	18.90	20.90	1.00	27.60	14.50	5
SMAJ17CA	BR	17.00	18.90	20.90	1.00	27.60	14.50	5
SMAJ18C	BS	18.00	20.00	22.10	1.00	29.20	13.70	5
SMAJ18CA	BT	18.00	20.00	22.10	1.00	29.20	13.70	5
SMAJ20C	BU	20.00	22.20	24.50	1.00	32.40	12.30	5
SMAJ20CA	BV	20.00	22.20	24.50	1.00	32.40	12.30	5
SMAJ22C	BW	22.00	24.40	26.90	1.00	35.50	11.30	5
SMAJ22CA	BX	22.00	24.40	26.90	1.00	35.50	11.30	5
SMAJ24C	BY	24.00	26.70	29.50	1.00	38.90	10.30	5
SMAJ24CA	BZ	24.00	26.70	29.50	1.00	38.90	10.30	5
SMAJ26C	CD	26.00	28.90	31.90	1.00	42.10	9.50	5
SMAJ26CA	CE	26.00	28.90	31.90	1.00	42.10	9.50	5
SMAJ28C	CF	28.00	31.10	34.40	1.00	45.40	8.80	5
SMAJ28CA	CG	28.00	31.10	34.40	1.00	45.40	8.80	5
SMAJ30C	CH	30.00	33.30	36.80	1.00	48.40	8.30	5
SMAJ30CA	CK	30.00	33.30	36.80	1.00	48.40	8.30	5
SMAJ33C	CL	33.00	36.70	40.60	1.00	53.30	7.50	5
SMAJ33CA	CM	33.00	36.70	40.60	1.00	53.30	7.50	5
SMAJ36C	CN	36.00	40.00	44.20	1.00	58.10	6.90	5
SMAJ36CA	CP	36.00	40.00	44.20	1.00	58.10	6.90	5
SMAJ40C	CQ	40.00	44.40	49.10	1.00	64.50	6.20	5
SMAJ40CA	CR	40.00	44.40	49.10	1.00	64.50	6.20	5

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SMAJ43C	CS	43.00	47.80	52.80	1.00	69.40	5.80	5
SMAJ43CA	CT	43.00	47.80	52.80	1.00	69.40	5.80	5
SMAJ45C	CU	45.00	50.00	55.30	1.00	72.70	5.50	5
SMAJ45CA	CV	45.00	50.00	55.30	1.00	72.70	5.50	5
SMAJ48C	CW	48.00	53.30	58.90	1.00	77.40	5.20	5
SMAJ48CA	CX	48.00	53.30	58.90	1.00	77.40	5.20	5
SMAJ51C	CY	51.00	56.70	62.70	1.00	82.40	4.90	5
SMAJ51CA	CZ	51.00	56.70	62.70	1.00	82.40	4.90	5
SMAJ54C	RD	54.00	60.00	66.30	1.00	87.10	4.60	5
SMAJ54CA	RE	54.00	60.00	66.30	1.00	87.10	4.60	5
SMAJ58C	RF	58.00	64.40	71.20	1.00	93.60	4.30	5
SMAJ58CA	RG	58.00	64.40	71.20	1.00	93.60	4.30	5
SMAJ60C	RH	60.00	66.70	73.70	1.00	96.80	4.10	5
SMAJ60CA	RK	60.00	66.70	73.70	1.00	96.80	4.10	5
SMAJ64C	RL	64.00	71.10	78.60	1.00	103.00	3.90	5
SMAJ64CA	RM	64.00	71.10	78.60	1.00	103.00	3.90	5
SMAJ70C	RN	70.00	77.80	86.00	1.00	113.00	3.50	5
SMAJ70CA	RP	70.00	77.80	86.00	1.00	113.00	3.50	5
SMAJ75C	RQ	75.00	83.30	92.10	1.00	121.00	3.30	5
SMAJ75CA	RR	75.00	83.30	92.10	1.00	121.00	3.30	5
SMAJ78C	RS	78.00	86.70	95.80	1.00	126.00	3.20	5
SMAJ78CA	RT	78.00	86.70	95.80	1.00	126.00	3.20	5
SMAJ85C	RU	85.00	94.40	104.00	1.00	137.00	2.90	5
SMAJ85CA	RV	85.00	94.40	104.00	1.00	137.00	2.90	5
SMAJ90C	RW	90.00	100.00	111.00	1.00	146.00	2.70	5
SMAJ90CA	RX	90.00	100.00	111.00	1.00	146.00	2.70	5
SMAJ100C	RY	100.00	111.00	123.00	1.00	162.00	2.50	5
SMAJ100CA	RZ	100.00	111.00	123.00	1.00	162.00	2.50	5
SMAJ110C	SD	110.00	122.00	135.00	1.00	177.00	2.30	5
SMAJ110CA	SE	110.00	122.00	135.00	1.00	177.00	2.30	5
SMAJ120C	SF	120.00	133.00	147.00	1.00	193.00	2.10	5
SMAJ120CA	SG	120.00	133.00	147.00	1.00	193.00	2.10	5
SMAJ130C	SH	130.00	144.00	159.00	1.00	209.00	1.90	5
SMAJ130CA	SK	130.00	144.00	159.00	1.00	209.00	1.90	5
SMAJ150C	SL	150.00	167.00	185.00	1.00	243.00	1.60	5
SMAJ150CA	SM	150.00	167.00	185.00	1.00	243.00	1.60	5
SMAJ160C	SN	160.00	178.00	197.00	1.00	259.00	1.50	5
SMAJ160CA	SP	160.00	178.00	197.00	1.00	259.00	1.50	5
SMAJ170C	SQ	170.00	189.00	209.00	1.00	275.00	1.50	5
SMAJ170CA	SR	170.00	189.00	209.00	1.00	275.00	1.50	5
SMAJ180CA	ST	180.00	198.00	221.00	1.00	291.00	1.40	5
SMAJ190CA	SV	190.00	209.00	233.00	1.00	307.00	1.30	5
SMAJ200CA	SX	200.00	220.00	246.00	1.00	324.00	1.30	5
SMAJ220CA	SY	220.00	246.00	272.00	1.00	356.00	1.20	5
SMAJ250CA	SZ	250.00	279.00	309.00	1.00	405.00	1.00	5

For bidirectional type having V_{rwm} of 10 volts and less, the IR limit is double.
 For parts without A , the VBR is + 10%

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

Fig. 1-Peak Pulse Power Rating Curve

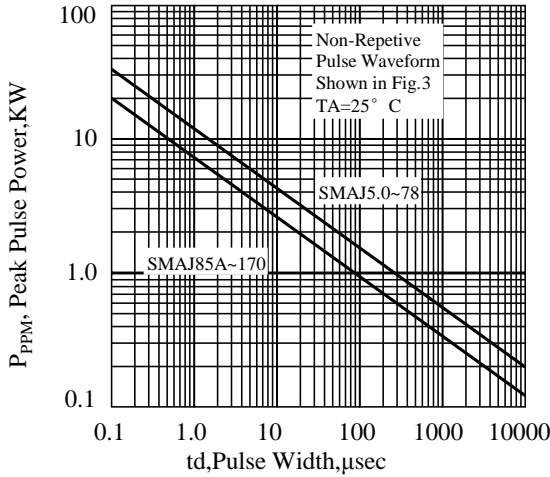


Fig. 2-Pulse Derating Curve

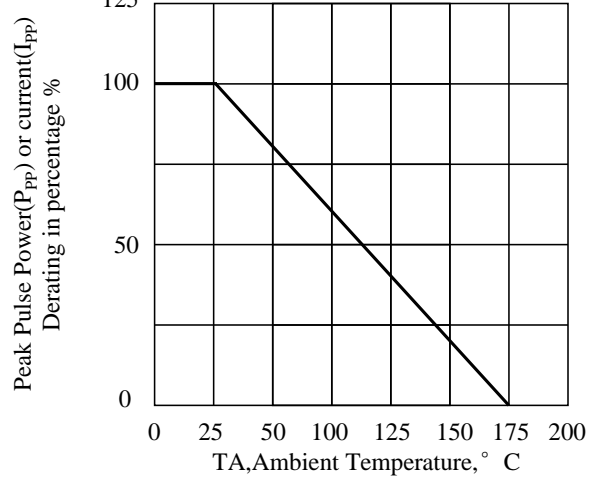


Fig. 3-Pulse Waveform

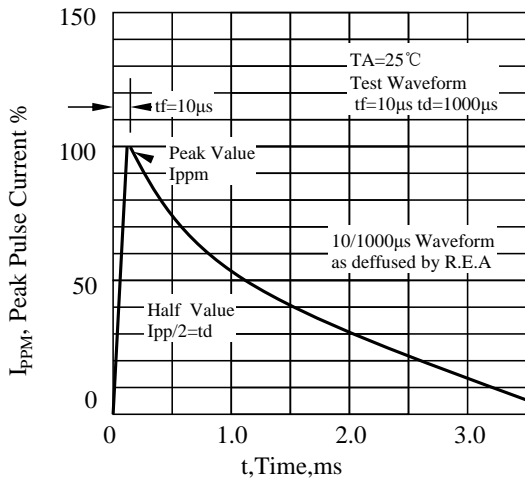


Fig. 4-Typical Junction Capacitance Unidirectional

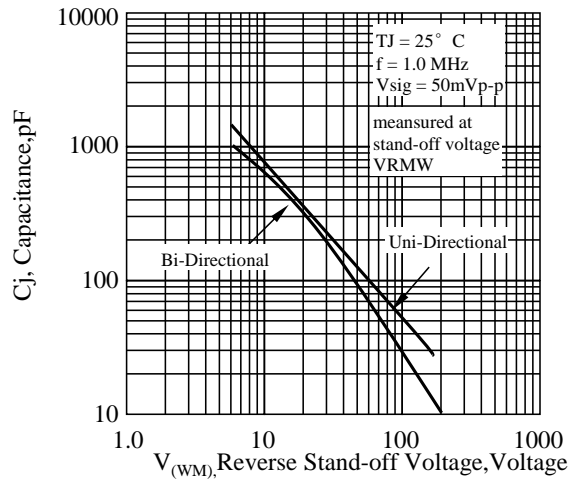


Fig 5. - typical transient thermal impedance

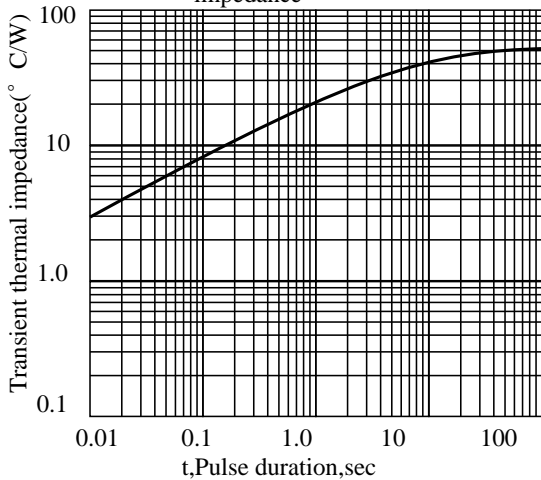
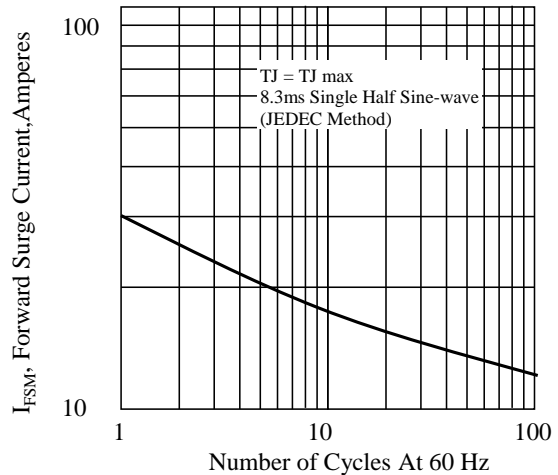
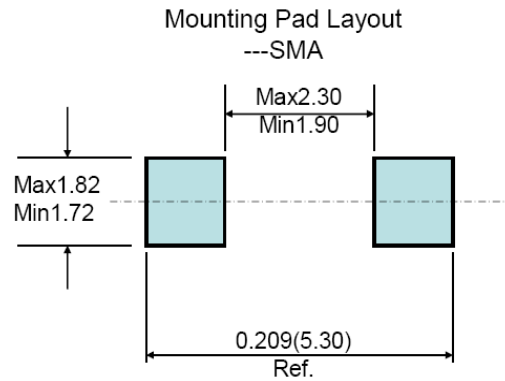
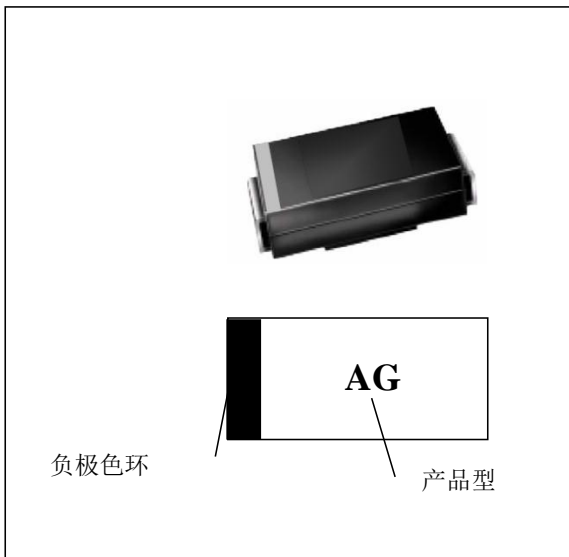
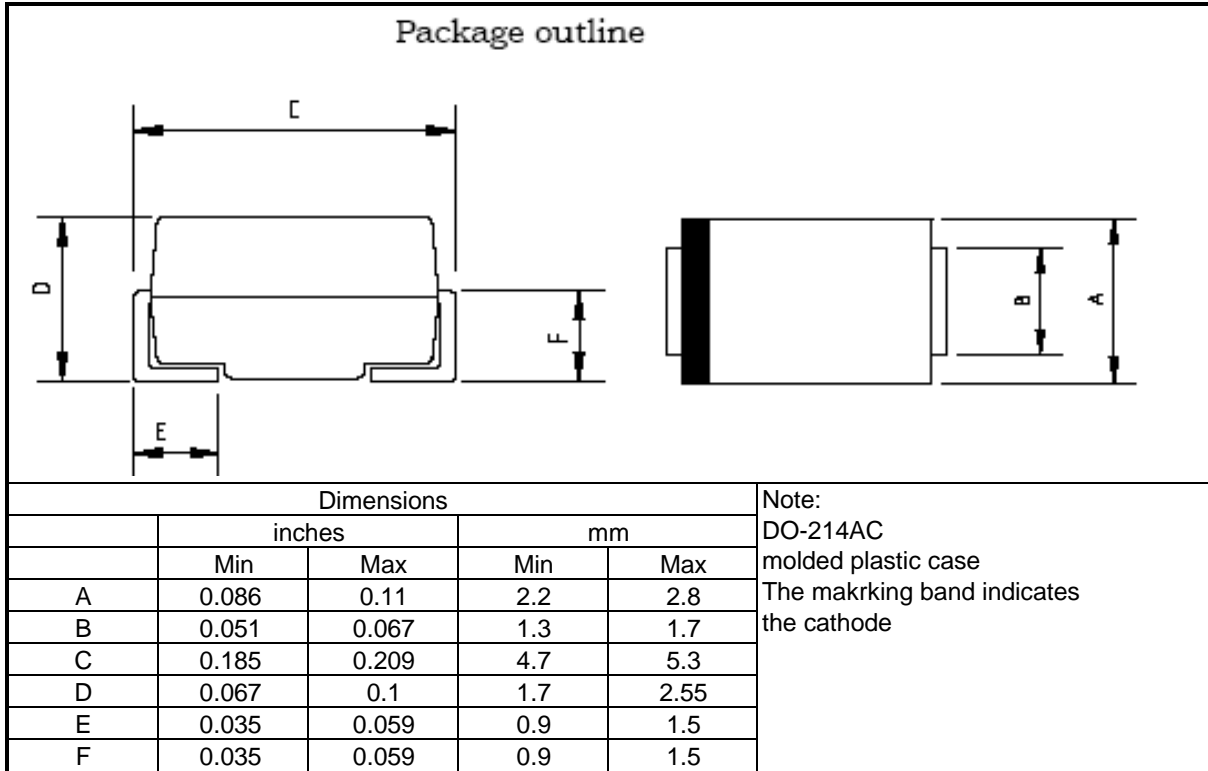


Fig. 6-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional



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3. dimension:



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4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2010/4/27
2	调整储存温度为175度	周杰	2010/9/23
3	增加建议焊片尺寸，调整产品单只重量。	周杰	2011/12/6

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