SMAJ*** Series

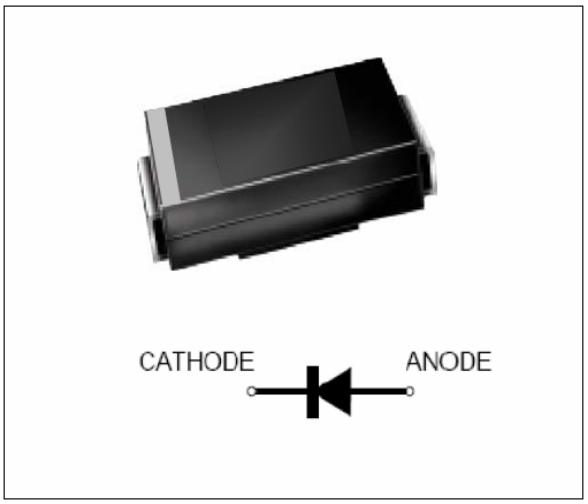
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5.0 TO 250 Volts

400 Watt Peak Pulse Power

FEATURES

* Plastic package has Underwriters Laboratory Flammability Classification 94V-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 from 0 Volts to V(BR) for unidirectional types
* Typical IR less than 1mA above 10V
* High temperature soldering guaranteed: 260°C/10 seconds,



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: 0.0026 ounce, 0.075 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°C, T_P=1ms(Note 1)	P_{PPM}	Minimum 400	Watts
Steady State Power Dissipation at T_L=75°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 and Storage Temperature Range	T_J,T_{STG}	-50 to +150	°C

NOTES:
1. Non-repetitive current pulse, per Fig. 3 and derated above TA=25°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.

SMAJ*** Series

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)
SMAJ5.0	AD	5.00	6.40	7.00	10.00	9.20	43.50	800
SMAJ5.0A	AE	5.00	6.40	7.00	10.00	9.20	43.50	800
SMAJ6.0	AF	6.00	6.67	7.37	10.00	10.30	38.80	800
SMAJ6.0A	AG	6.00	6.67	7.37	10.00	10.30	38.80	800
SMAJ6.5	AH	6.50	7.22	7.98	10.00	11.20	35.70	500
SMAJ6.5A	AK	6.50	7.22	7.98	10.00	11.20	35.70	500
SMAJ7.0	AL	7.00	7.78	8.60	10.00	12.00	33.30	200
SMAJ7.0A	AM	7.00	7.78	8.60	10.00	12.00	33.30	200
SMAJ7.5	AN	7.50	8.33	9.21	1.00	12.90	31.00	100
SMAJ7.5A	AP	7.50	8.33	9.21	1.00	12.90	31.00	100
SMAJ8.0	AQ	8.00	8.89	9.83	1.00	13.60	29.40	50
SMAJ8.0A	AR	8.00	8.89	9.83	1.00	13.60	29.40	50
SMAJ8.5	AS	8.50	9.44	10.40	1.00	14.40	27.80	20
SMAJ8.5A	AT	8.50	9.44	10.40	1.00	14.40	27.80	20
SMAJ9.0	AU	9.00	10.00	11.10	1.00	15.40	26.00	10
SMAJ9.0A	AV	9.00	10.00	11.10	1.00	15.40	26.00	10
SMAJ10	AW	10.00	11.10	12.30	1.00	17.00	23.50	5
SMAJ10A	AX	10.00	11.10	12.30	1.00	17.00	23.50	5
SMAJ11	AY	11.00	12.20	13.50	1.00	18.20	22.00	5
SMAJ11A	AZ	11.00	12.20	13.50	1.00	18.20	22.00	5
SMAJ12	BD	12.00	13.30	14.70	1.00	19.90	20.10	5
SMAJ12A	BE	12.00	13.30	14.70	1.00	19.90	20.10	5
SMAJ13	BF	13.00	14.40	15.90	1.00	21.50	18.60	5
SMAJ13A	BG	13.00	14.40	15.90	1.00	21.50	18.60	5
SMAJ14	BH	14.00	15.60	17.20	1.00	23.20	17.20	5
SMAJ14A	BK	14.00	15.60	17.20	1.00	23.20	17.20	5
SMAJ15	BL	15.00	16.70	18.50	1.00	24.40	16.40	5
SMAJ15A	BM	15.00	16.70	18.50	1.00	24.40	16.40	5
SMAJ16	BN	16.00	17.80	19.70	1.00	26.00	15.40	5
SMAJ16A	BP	16.00	17.80	19.70	1.00	26.00	15.40	5
SMAJ17	BQ	17.00	18.90	20.90	1.00	27.60	14.50	5
SMAJ17A	BR	17.00	18.90	20.90	1.00	27.60	14.50	5
SMAJ18	BS	18.00	20.00	22.10	1.00	29.20	13.70	5
SMAJ18A	BT	18.00	20.00	22.10	1.00	29.20	13.70	5
SMAJ20	BU	20.00	22.20	24.50	1.00	32.40	12.30	5
SMAJ20A	BV	20.00	22.20	24.50	1.00	32.40	12.30	5
SMAJ22	BW	22.00	24.40	26.90	1.00	35.50	11.30	5
SMAJ22A	BX	22.00	24.40	26.90	1.00	35.50	11.30	5
SMAJ24	BY	24.00	26.70	29.50	1.00	38.90	10.30	5
SMAJ24A	BZ	24.00	26.70	29.50	1.00	38.90	10.30	5
SMAJ26	CD	26.00	28.90	31.90	1.00	42.10	9.50	5
SMAJ26A	CE	26.00	28.90	31.90	1.00	42.10	9.50	5
SMAJ28	CF	28.00	31.10	34.40	1.00	45.40	8.80	5
SMAJ28A	CG	28.00	31.10	34.40	1.00	45.40	8.80	5
SMAJ30	CH	30.00	33.30	36.80	1.00	48.40	8.30	5
SMAJ30A	CK	30.00	33.30	36.80	1.00	48.40	8.30	5
SMAJ33	CL	33.00	36.70	40.60	1.00	53.30	7.50	5
SMAJ33A	CM	33.00	36.70	40.60	1.00	53.30	7.50	5
SMAJ36	CN	36.00	40.00	44.20	1.00	58.10	6.90	5
SMAJ36A	CP	36.00	40.00	44.20	1.00	58.10	6.90	5
SMAJ40	CQ	40.00	44.40	49.10	1.00	64.50	6.20	5
SMAJ40A	CR	40.00	44.40	49.10	1.00	64.50	6.20	5

SMAJ*** Series

SMAJ43	CS	43.00	47.80	52.80	1.00	69.40	5.80	5
SMAJ43A	CT	43.00	47.80	52.80	1.00	69.40	5.80	5
SMAJ45	CU	45.00	50.00	55.30	1.00	72.70	5.50	5
SMAJ45A	CV	45.00	50.00	55.30	1.00	72.70	5.50	5
SMAJ48	CW	48.00	53.30	58.90	1.00	77.40	5.20	5
SMAJ48A	CX	48.00	53.30	58.90	1.00	77.40	5.20	5
SMAJ51	CY	51.00	56.70	62.70	1.00	82.40	4.90	5
SMAJ51A	CZ	51.00	56.70	62.70	1.00	82.40	4.90	5
SMAJ54	RD	54.00	60.00	66.30	1.00	87.10	4.60	5
SMAJ54A	RE	54.00	60.00	66.30	1.00	87.10	4.60	5
SMAJ58	RF	58.00	64.40	71.20	1.00	93.60	4.30	5
SMAJ58A	RG	58.00	64.40	71.20	1.00	93.60	4.30	5
SMAJ60	RH	60.00	66.70	73.70	1.00	96.80	4.10	5
SMAJ60A	RK	60.00	66.70	73.70	1.00	96.80	4.10	5
SMAJ64	RL	64.00	71.10	78.60	1.00	103.00	3.90	5
SMAJ64A	RM	64.00	71.10	78.60	1.00	103.00	3.90	5
SMAJ70	RN	70.00	77.80	86.00	1.00	113.00	3.50	5
SMAJ70A	RP	70.00	77.80	86.00	1.00	113.00	3.50	5
SMAJ75	RQ	75.00	83.30	92.10	1.00	121.00	3.30	5
SMAJ75A	RR	75.00	83.30	92.10	1.00	121.00	3.30	5
SMAJ78	RS	78.00	86.70	95.80	1.00	126.00	3.20	5
SMAJ78A	RT	78.00	86.70	95.80	1.00	126.00	3.20	5
SMAJ85	RU	85.00	94.40	104.00	1.00	137.00	2.90	5
SMAJ85A	RV	85.00	94.40	104.00	1.00	137.00	2.90	5
SMAJ90	RW	90.00	100.00	111.00	1.00	146.00	2.70	5
SMAJ90A	RX	90.00	100.00	111.00	1.00	146.00	2.70	5
SMAJ100	RY	100.00	111.00	123.00	1.00	162.00	2.50	5
SMAJ100A	RZ	100.00	111.00	123.00	1.00	162.00	2.50	5
SMAJ110	SD	110.00	122.00	135.00	1.00	177.00	2.30	5
SMAJ110A	SE	110.00	122.00	135.00	1.00	177.00	2.30	5
SMAJ120	SF	120.00	133.00	147.00	1.00	193.00	2.10	5
SMAJ120A	SG	120.00	133.00	147.00	1.00	193.00	2.10	5
SMAJ130	SH	130.00	144.00	159.00	1.00	209.00	1.90	5
SMAJ130A	SK	130.00	144.00	159.00	1.00	209.00	1.90	5
SMAJ150	SL	150.00	167.00	185.00	1.00	243.00	1.60	5
SMAJ150A	SM	150.00	167.00	185.00	1.00	243.00	1.60	5
SMAJ160	SN	160.00	178.00	197.00	1.00	259.00	1.50	5
SMAJ160A	SP	160.00	178.00	197.00	1.00	259.00	1.50	5
SMAJ170	SQ	170.00	189.00	209.00	1.00	275.00	1.50	5
SMAJ170A	SR	170.00	189.00	209.00	1.00	275.00	1.50	5
SMAJ180A	ST	180.00	198.00	221.00	1.00	291.00	1.40	5
SMAJ190A	SV	190.00	209.00	233.00	1.00	307.00	1.30	5
SMAJ200A	SX	200.00	220.00	246.00	1.00	324.00	1.30	5
SMAJ220A	SY	220.00	246.00	272.00	1.00	356.00	1.20	5
SMAJ250A	SZ	250.00	279.00	309.00	1.00	405.00	1.00	5

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

SMAJ*** Series

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

Fig. 1-Peak Pulse Power Rating Curve

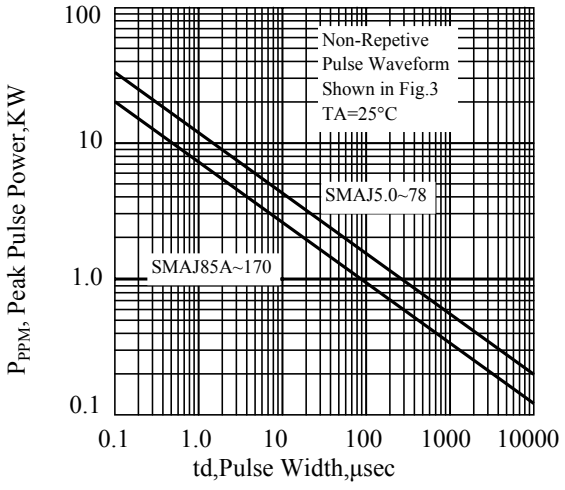


Fig. 2-Pulse Derating Curve

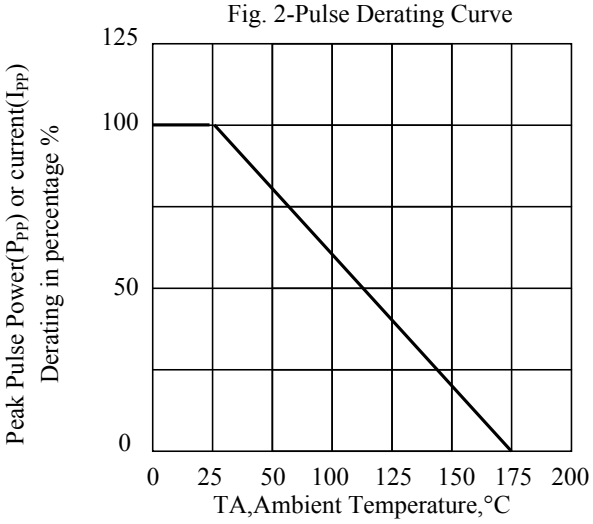


Fig. 3-Pulse Waveform

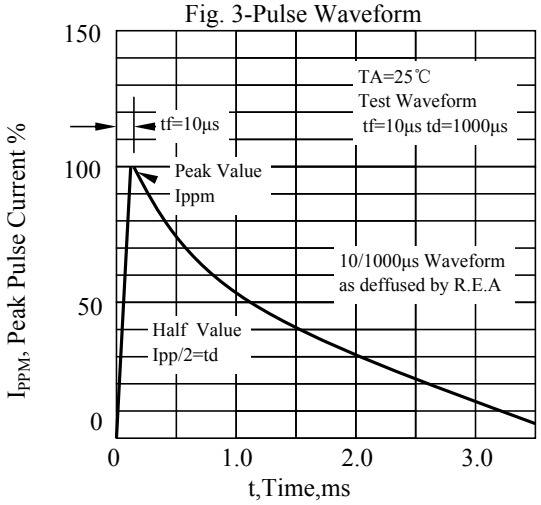


Fig. 4-Typical Junction Capacitance
Unidirectional

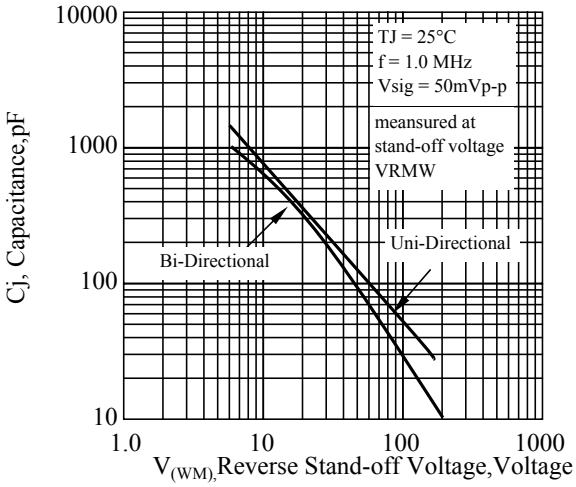


Fig. 5 - Typ.Transient Thermal Impedance

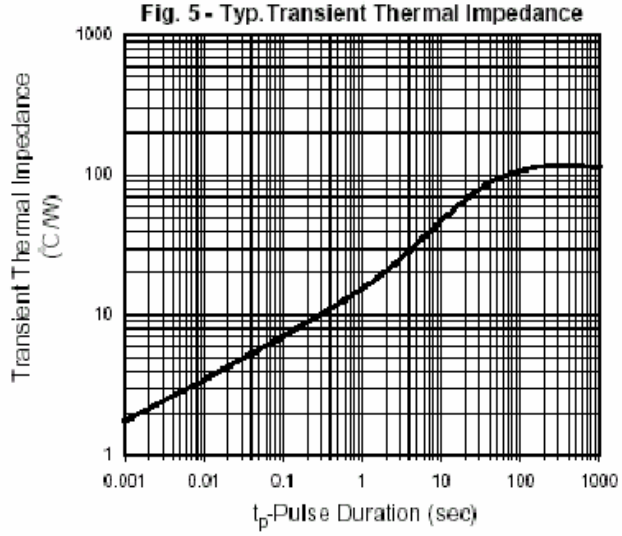
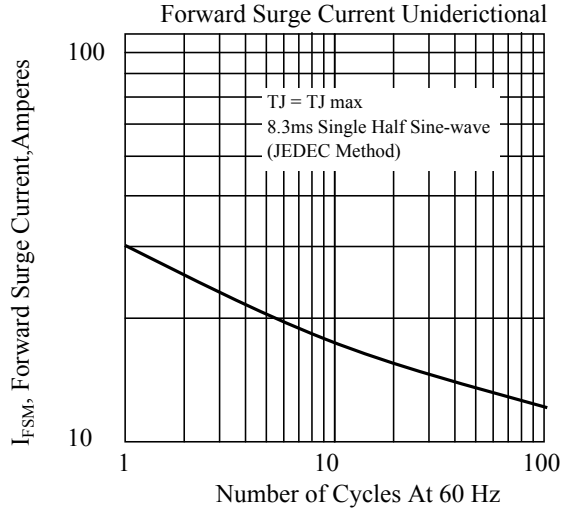


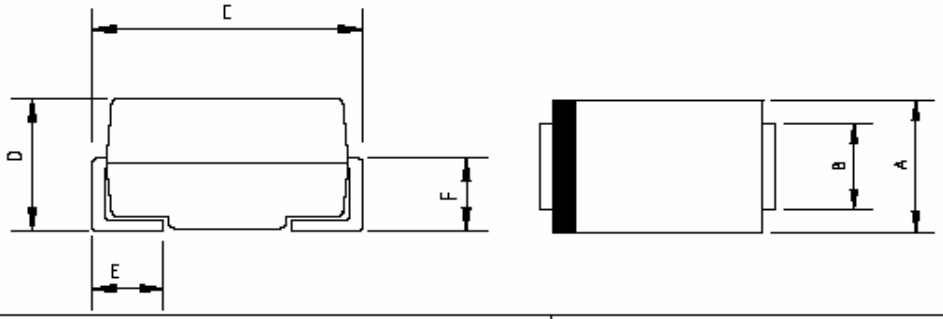
Fig. 6-Maximum Non-Repetitive Peak
Forward Surge Current Unidirectional



SMAJ*** Series

3. dimension:

Package outline



Dimensions				
	inches		mm	
	Min.	Max.	Min.	Max.
A	0.086	0.110	2.2	2.8
B	0.051	0.067	1.3	1.7
C	0.185	0.209	4.7	5.3
D	0.067	0.100	1.7	2.55
E	0.035	0.059	0.9	1.5
F	0.035	0.059	0.9	1.5

Note:
DO-214AC
molded plastic case
The marking band indicates the cathode

SMAJ*** Series

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