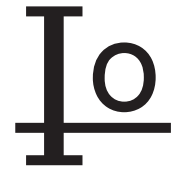


# SMAJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS



## FEATURES

- \* For surface mount application
- \* Built-in strain relief
- \* Excellent clamping capability
- \* Low profile package
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_R$  less than  $1\mu A$  above 10V
- \* High temperature soldering guaranteed:  $260^\circ C$  / 10 seconds at terminals
- \* Lead Free Finish/RoHS Compliant

## MECHANICAL DATA

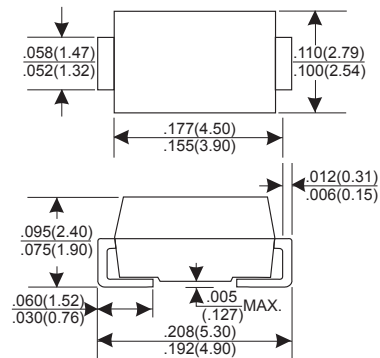
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end except Bidirectional
- \* Mounting position: Any
- \* Weight: 0.066 grams

## VOLTAGE RANGE

5.0 to 170 Volts

400 Watts Peak Power

### DO-214AC(SMA)



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating  $25^\circ C$  ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ C$ , $T_P=1ms$ (NOTE 1)	$P_{PK}$	Minimum 400	Watts
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	40	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional only	$V_F$	3.5	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. Mounted on Copper Pad area of  $5.0mm^2$  (.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

## DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMAJ5.0 thru SMAJ170.
2. Electrical characteristics apply in both directions.

## RATING AND CHARACTERISTIC CURVES (SMAJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

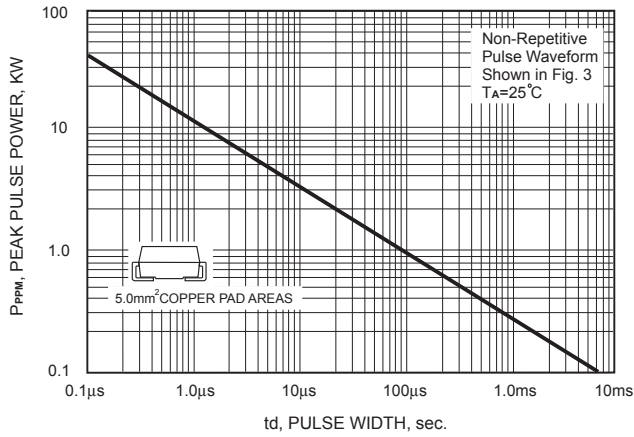


FIG.2-PULSE DERATING CURVE

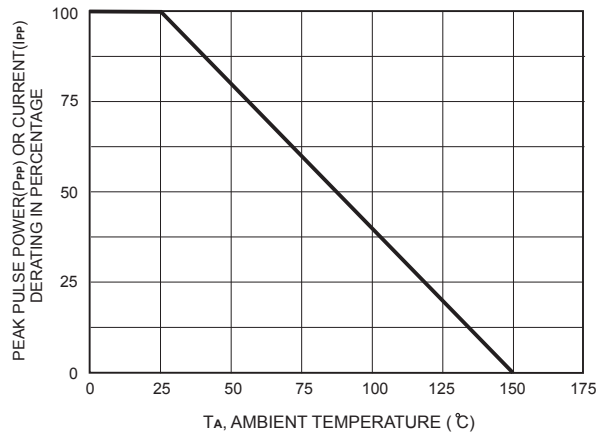


FIG.3-PULSE WAVE FORM

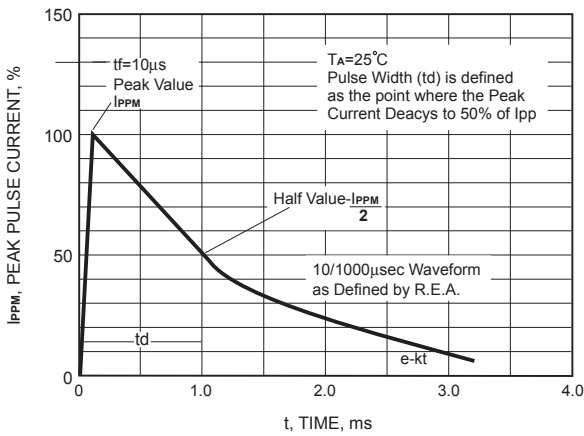


FIG.4-TYPICAL JUNCTION CAPACITANCE

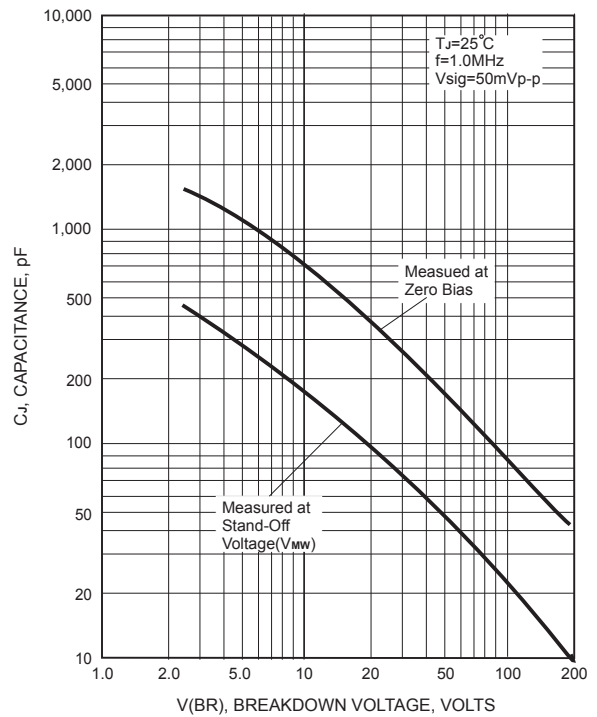
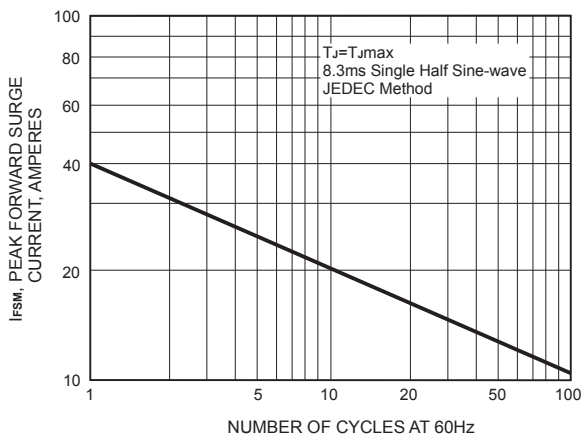


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



# 400 Watt Surface Mount TVS

PART NUMBER ADD C FOR BI- DIRECTIONAL	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(μA)	MARKING CODE	
								UNI	BI
See Note 1									
SMAJ5.0(C)	5.0	6.40	7.30	10	9.6	41.6	800	AD	WD
SMAJ5.0(C)A	5.0	6.40	7.00	10	9.2	43.5	800	AE	WE
SMAJ6.0(C)	6.0	6.67	8.15	10	11.4	35.1	800	AF	WF
SMAJ6.0(C)A	6.0	6.67	7.37	10	10.3	38.8	800	AG	WG
SMAJ6.5(C)	6.5	7.22	8.82	10	12.3	32.5	500	AH	WH
SMAJ6.5(C)A	6.5	7.22	7.98	10	11.2	35.7	500	AK	WK
SMAJ7.0(C)	7.0	7.78	9.51	10	13.3	30.1	200	AL	WL
SMAJ7.0(C)A	7.0	7.78	8.60	10	12.0	33.3	200	AM	WM
SMAJ7.5(C)	7.5	8.33	10.2	1	14.3	28.0	100	AN	WN
SMAJ5.0(C)A	7.5	8.33	9.21	1	12.9	31.0	100	AP	WP
SMAJ8.0(C)	8.0	8.89	10.9	1	15.0	26.5	50	AQ	WQ
SMAJ8.0(C)A	8.0	8.89	9.83	1	13.6	29.4	50	AR	WR
SMAJ8.5(C)	8.5	9.44	11.5	1	15.9	25.1	10	AS	WS
SMAJ8.5(C)A	8.5	9.44	10.4	1	14.4	27.7	10	AT	WT
SMAJ9.0(C)	9.0	10.0	12.2	1	16.9	23.6	5	AU	WU
SMAJ9.0(C)A	9.0	10.0	11.1	1	15.4	26.0	5	AV	WV
SMAJ10(C)	10	11.1	13.6	1	18.8	21.1	5	AW	WW
SMAJ10(C)A	10	11.1	12.3	1	17.0	23.5	5	AX	WX
SMAJ11(C)	11	12.2	14.9	1	20.1	20.0	5	AY	WY
SMAJ11(C)A	11	12.2	13.5	1	18.2	22.0	5	AZ	WZ
SMAJ12(C)	12	13.3	16.3	1	22.0	18.1	5	BD	XD
SMAJ12(C)A	12	13.3	14.7	1	19.9	20.1	5	BE	XE
SMAJ13(C)	13	14.4	17.6	1	23.8	16.8	5	BF	XF
SMAJ13(C)A	13	14.4	15.9	1	21.5	18.6	5	BG	XG
SMAJ14(C)	14	15.6	19.1	1	25.8	15.5	5	BH	XH
SMAJ14(C)A	14	15.6	17.2	1	23.2	17.2	5	BK	XK
SMAJ15(C)	15	16.7	20.4	1	26.9	14.8	5	BL	XL
SMAJ15(C)A	15	16.7	18.5	1	24.4	16.4	5	BM	XM
SMAJ16(C)	16	17.8	21.8	1	28.8	13.8	5	BN	XN
SMAJ16(C)A	16	17.8	19.7	1	26.0	15.3	5	BP	XP
SMAJ17(C)	17	18.9	23.1	1	30.5	13.1	5	BQ	XQ
SMAJ17(C)A	17	18.9	20.9	1	27.6	14.5	5	BR	XR
SMAJ18(C)	18	20.0	24.4	1	32.2	12.4	5	BS	XS
SMAJ18(C)A	18	20.0	22.1	1	29.2	13.7	5	BT	XT
SMAJ20(C)	20	22.2	27.1	1	35.8	11.1	5	BU	XU
SMAJ20(C)A	20	22.2	24.5	1	32.4	12.3	5	BV	XV
SMAJ22(C)	22	24.4	29.8	1	39.4	10.1	5	BW	XW
SMAJ22(C)A	22	24.4	26.9	1	35.5	11.2	5	BX	XX
SMAJ24(C)	24	26.7	32.6	1	43.0	9.3	5	BY	XY
SMAJ24(C)A	24	26.7	29.5	1	38.9	10.3	5	BZ	XZ
SMAJ26(C)	26	28.9	35.3	1	46.6	8.6	5	CD	YD
SMAJ26(C)A	26	28.9	31.9	1	42.1	9.5	5	CE	YE
SMAJ28(C)	28	31.1	38.0	1	50.0	8.0	5	CF	YF
SMAJ28(C)A	28	31.1	34.4	1	45.4	8.8	5	CG	YG
SMAJ30(C)	30	33.3	40.7	1	53.5	7.5	5	CH	YH
SMAJ30(C)A	30	33.3	36.8	1	48.4	8.3	5	CK	YK
SMAJ33(C)	33	36.7	44.9	1	59.0	6.8	5	CL	YL
SMAJ33(C)A	33	36.7	40.6	1	53.3	7.5	5	CM	YM
SMAJ36(C)	36	40.0	48.9	1	64.3	6.2	5	CN	YN
SMAJ36(C)A	36	40.0	44.2	1	58.1	6.9	5	CP	YP
SMAJ40(C)	40	44.4	54.3	1	71.4	5.6	5	CQ	YQ
SMAJ40(C)A	40	44.4	49.1	1	64.5	6.2	5	CR	YR
SMAJ43(C)	43	47.8	58.4	1	76.7	5.2	5	CS	YS
SMAJ43(C)A	43	47.8	52.8	1	69.4	5.7	5	CT	YT
SMAJ45(C)	45	50.0	61.1	1	80.3	5.0	5	CU	YU
SMAJ45(C)A	45	50.0	55.3	1	72.7	5.5	5	CV	YV
SMAJ48(C)	48	53.3	65.1	1	85.5	4.7	5	CW	YW
SMAJ48(C)A	48	53.3	58.9	1	77.4	5.2	5	CX	YX
SMAJ51(C)	51	56.7	69.3	1	91.1	4.4	5	CY	YY
SMAJ51(C)A	51	56.7	62.7	1	82.4	4.9	5	CZ	YZ
SMAJ54(C)	54	60.0	73.3	1	96.3	4.2	5	RD	ZD
SMAJ54(C)A	54	60.0	66.3	1	87.1	4.6	5	RE	ZE
SMAJ58(C)	58	64.4	78.7	1	103	3.9	5	RF	ZF
SMAJ58(C)A	58	64.4	71.2	1	93.6	4.3	5	RG	ZG

# 400 Watt Surface Mount TVS

PART NUMBER ADD C FOR BI- DIRECTIONAL	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V)		TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR(μA)	MARKING CODE	
		MIN. @IT	MAX. @IT					UNI	BI
See Note 1									
SMAJ60(C)	60	66.7	81.5	1	107	3.7	5	RH	ZH
SMAJ60(C)A	60	66.7	73.7	1	96.8	4.1	5	RK	ZK
SMAJ64(C)	64	71.1	86.4	1	114	4.5	5	RL	ZL
SMAJ64(C)A	64	71.1	78.6	1	103	3.9	5	RM	ZM
SMAJ70(C)	70	77.8	95.1	1	125	3.2	5	RN	ZN
SMAJ70(C)A	70	77.8	86.0	1	113	3.5	5	RP	ZP
SMAJ75(C)	75	83.3	102	1	134	3.0	5	RQ	ZQ
SMAJ75(C)A	75	83.3	92.1	1	121	3.3	5	RR	ZR
SMAJ78(C)	78	86.7	106	1	139	2.9	5	RS	ZS
SMAJ78(C)A	78	86.7	95.8	1	126	3.2	5	RT	ZT
SMAJ85(C)	85	94.4	115	1	151	2.6	5	RU	ZU
SMAJ85(C)A	85	94.4	104	1	137	2.9	5	RV	ZV
SMAJ90(C)	90	100	122	1	160	2.5	5	RW	ZW
SMAJ90(C)A	90	100	111	1	146	2.7	5	RX	ZX
SMAJ100(C)	100	111	136	1	179	2.2	5	RY	ZY
SMAJ100(C)A	100	111	123	1	162	2.5	5	RZ	ZZ
SMAJ110(C)	110	122	149	1	196	2.0	5	SD	VD
SMAJ110(C)A	110	122	135	1	177	2.3	5	SE	VE
SMAJ120(C)	120	133	163	1	214	1.9	5	SF	VF
SMAJ120(C)A	120	133	147	1	193	2.0	5	SG	VG
SMAJ130(C)	130	144	176	1	231	1.7	5	SH	VH
SMAJ130(C)A	130	144	159	1	209	1.9	5	SK	VK
SMAJ150(C)	150	167	204	1	268	1.5	5	SL	VL
SMAJ150(C)A	150	167	185	1	243	1.6	5	SM	VM
SMAJ160(C)	160	178	218	1	287	1.4	5	SN	VN
SMAJ160(C)A	160	178	197	1	259	1.5	5	SP	VP
SMAJ170(C)	160	189	231	1	304	1.3	5	SQ	VQ
SMAJ170(C)A	170	189	209	1	275	1.4	5	SR	VR