



## 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 A above 10V
- \* High temperature soldering guaranteed: 260°C / 10 seconds at terminals

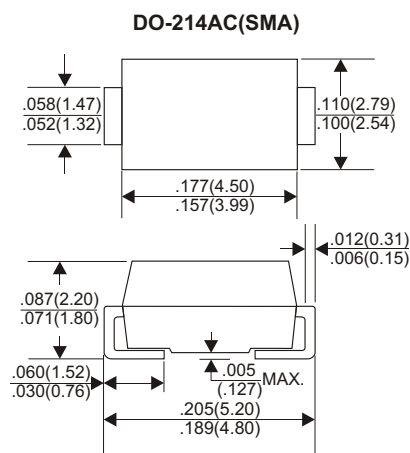
## MECHANICAL DATA

- \* 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: 0.063 grams

## VOLTAGE RANGE

5.0 to 440 Volts

400 Watts Peak Power



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°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 $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (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	°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 Pad area of 5.0mm<sup>2</sup>(.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 SMAJ440.
2. Electrical characteristics apply in both directions.

# RATING AND CHARACTERISTIC CURVES (SMAJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

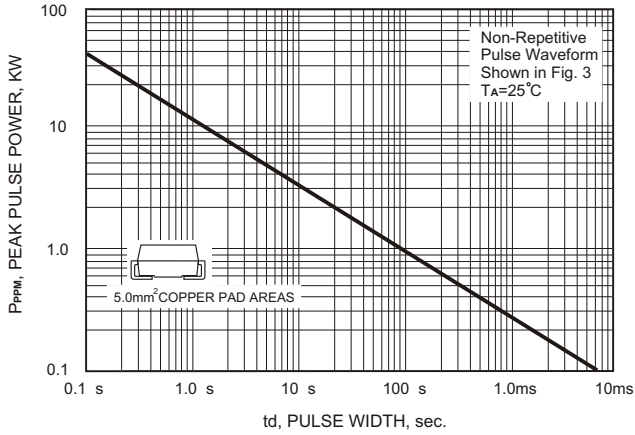


FIG.2-PULSE DERATING CURVE

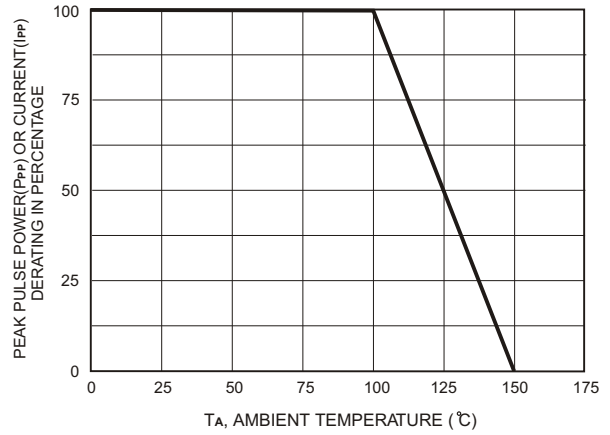


FIG.3-PULSE WAVE FORM

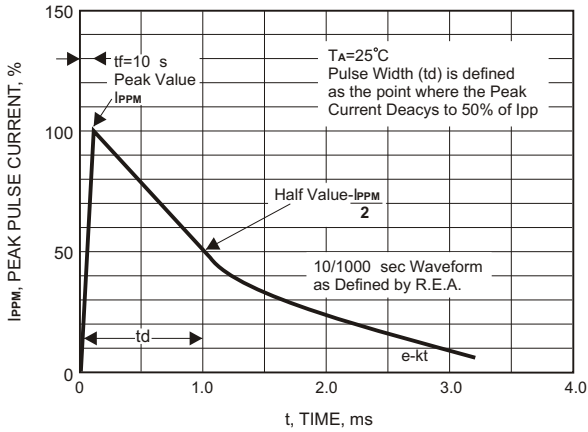


FIG.4-TYPICAL JUNCTION CAPACITANCE

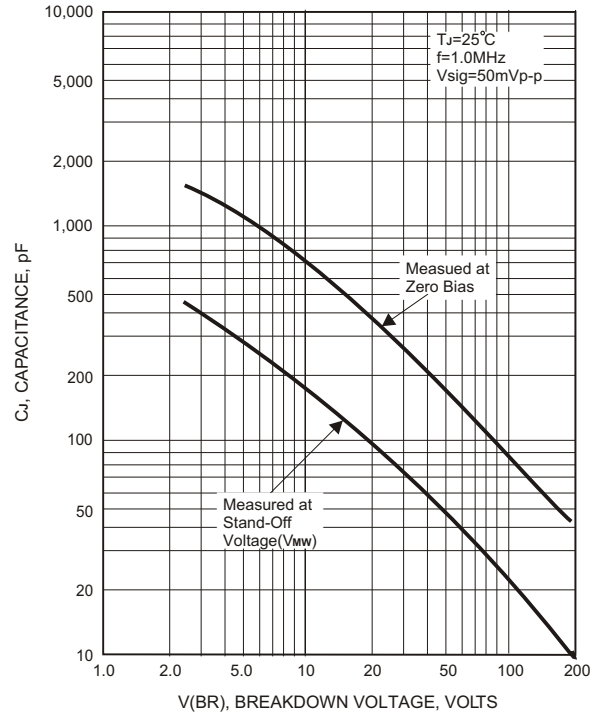
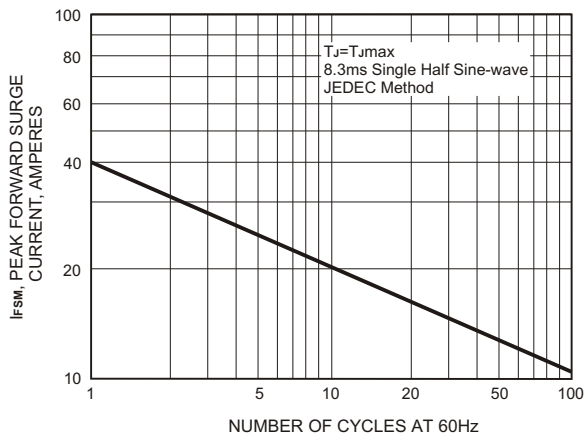


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



# 400 Watt Surface Mount TVS

PART NUMBER ADD C FOR BI- DIRECTIONAL See Note 1	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( $\mu$ A)	MARKING CODE	
								UNI	BI
SMAJ5.0(C)A	5.0	6.40	7.25	10	9.2	43.5	800	AE	WE
SMAJ6.0(C)A	6.0	6.67	7.67	10	10.3	38.8	800	AG	WG
SMAJ6.5(C)A	6.5	7.22	8.30	10	11.2	35.7	500	AK	WK
SMAJ7.0(C)A	7.0	7.78	8.95	10	12.0	33.3	200	AM	WM
SMAJ7.5(C)A	7.5	8.33	9.58	1	12.9	31.0	100	AP	WP
SMAJ8.0(C)A	8.0	8.89	10.23	1	13.6	29.4	50	AR	WR
SMAJ8.5(C)A	8.5	9.44	10.82	1	14.4	27.7	10	AT	WT
SMAJ9.0(C)A	9.0	10.0	11.50	1	15.4	26.0	5	AV	WV
SMAJ10(C)A	10	11.1	12.80	1	17.0	23.5	5	AX	WX
SMAJ11(C)A	11	12.2	14.00	1	18.2	22.0	5	AZ	WZ
SMAJ12(C)A	12	13.3	15.30	1	19.9	20.1	5	BE	XE
SMAJ13(C)A	13	14.4	16.50	1	21.5	18.6	5	BG	XG
SMAJ14(C)A	14	15.6	17.90	1	23.2	17.2	5	BK	XK
SMAJ15(C)A	15	16.7	19.20	1	24.4	16.4	5	BM	XM
SMAJ16(C)A	16	17.8	20.50	1	26.0	15.3	5	BP	XP
SMAJ17(C)A	17	18.9	21.70	1	27.6	14.5	5	BR	XR
SMAJ18(C)A	18	20.0	23.30	1	29.2	13.7	5	BT	XT
SMAJ20(C)A	20	22.2	25.50	1	32.4	12.3	5	BV	XV
SMAJ22(C)A	22	24.4	28.00	1	35.5	11.2	5	BX	XX
SMAJ24(C)A	24	26.7	30.70	1	38.9	10.3	5	BZ	XZ
SMAJ26(C)A	26	28.9	33.20	1	42.1	9.5	5	CE	YE
SMAJ28(C)A	28	31.1	35.80	1	45.4	8.8	5	CG	YG
SMAJ30(C)A	30	33.3	38.30	1	48.4	8.3	5	CK	YK
SMAJ33(C)A	33	36.7	42.20	1	53.3	7.5	5	CM	YM
SMAJ36(C)A	36	40.0	46.00	1	58.1	6.9	5	CP	YP
SMAJ40(C)A	40	44.4	51.10	1	64.5	6.2	5	CR	YR
SMAJ43(C)A	43	47.8	54.90	1	69.4	5.7	5	CT	YT
SMAJ45(C)A	45	50.0	57.50	1	72.7	5.5	5	CV	YV
SMAJ48(C)A	48	53.3	61.30	1	77.4	5.2	5	CX	YX
SMAJ51(C)A	51	56.7	65.20	1	82.4	4.9	5	CZ	YZ
SMAJ54(C)A	54	60.0	69.00	1	87.1	4.6	5	RE	ZE
SMAJ58(C)A	58	64.4	74.10	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) 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									
SMAJ60(C)A	60	66.7	76.7	1	96.8	4.1	5	RK	ZK
SMAJ64(C)A	64	71.1	81.8	1	103	3.9	5	RM	ZM
SMAJ70(C)A	70	77.8	89.5	1	113	3.5	5	RP	ZP
SMAJ75(C)A	75	83.3	95.8	1	121	3.3	5	RR	ZR
SMAJ78(C)A	78	86.7	99.7	1	126	3.2	5	RT	ZT
SMAJ85(C)A	85	94.4	108.2	1	137	2.2	5	RV	ZV
SMAJ90(C)A	90	100	115.5	1	146	2.1	5	RX	ZX
SMAJ100(C)A	100	111	128.0	1	162	1.9	5	RZ	ZZ
SMAJ110(C)A	110	122	140.5	1	177	1.7	5	SE	VE
SMAJ120(C)A	120	133	153.0	1	193	1.6	5	VG	VG
SMAJ130(C)A	130	144	165.5	1	209	1.4	5	VK	VK
SMAJ150(C)A	150	167	192.5	1	243	1.2	5	VM	VM
SMAJ160(C)A	160	178	205.0	1	259	1.2	5	SP	VP
SMAJ170(C)A	170	189	217.5	1	275	1.09	5	SR	VR
SMAJ188(C)A	188	209	231.0	1	328	0.91	5	SS	VS
SMAJ200(C)A	200	224	247.0	1	332	0.89	5	SV	VV
SMAJ210(C)A	210	237	263.0	1	340	0.86	5	SW	VW
SMAJ220(C)A	220	246	272	1	352	0.8	5	SZ	VZ
SMAJ250(C)A	250	279	309	1	405	0.75	5	VM	VM
SMAJ300(C)A	300	335	371	1	486	0.7	5	TE	UE
SMAJ400(C)A	400	447	494	1	648	0.6	5	TK	UK
SMAJ440(C)A	440	492	543	1	713	0.6	5	TM	UM

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