

**SURFACE MOUNT  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

STAND-OFF VOLTAGE - **4.0** to **200** Volts  
POWER DISSIPATION - **400** WATTS

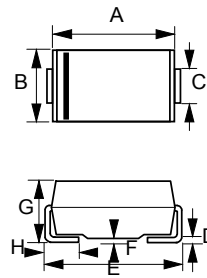
**FEATURES**

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, form 0 Volts to BV min

**MECHANICAL DATA**

- Case : Molded plastic
- Polarity : by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- Weight : 0.002 ounces, 0.064 gram

**SMA**



SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	1.96	2.40
H	0.76	1.52

All Dimensions in millimeter

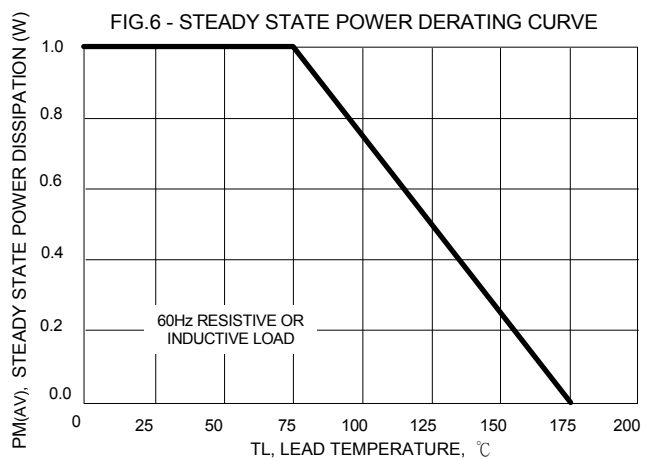
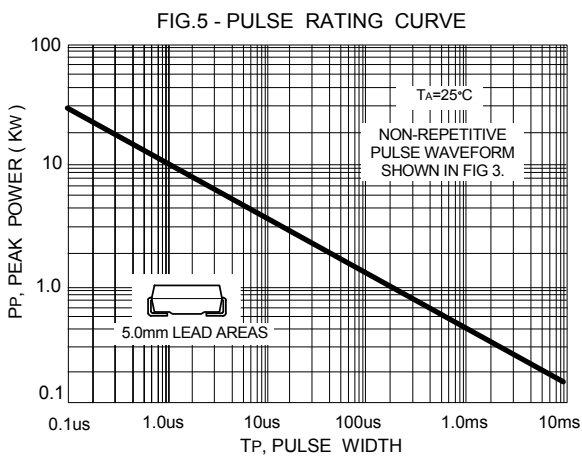
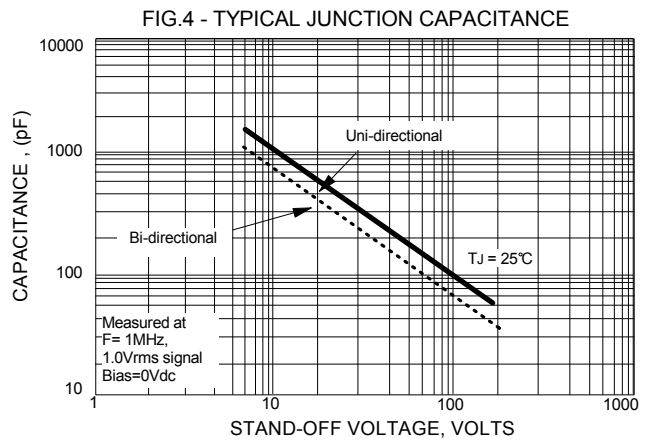
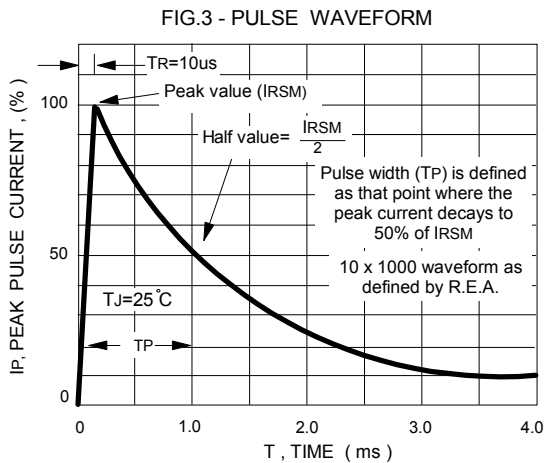
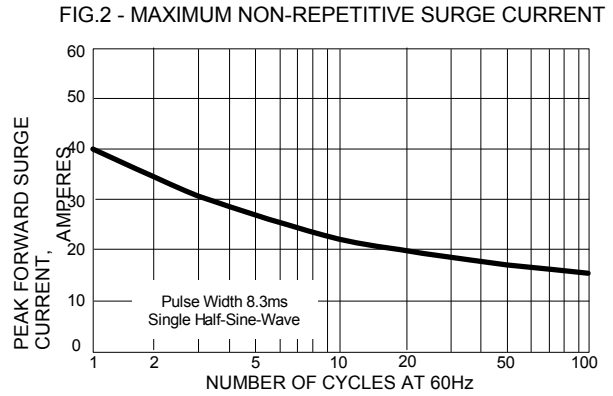
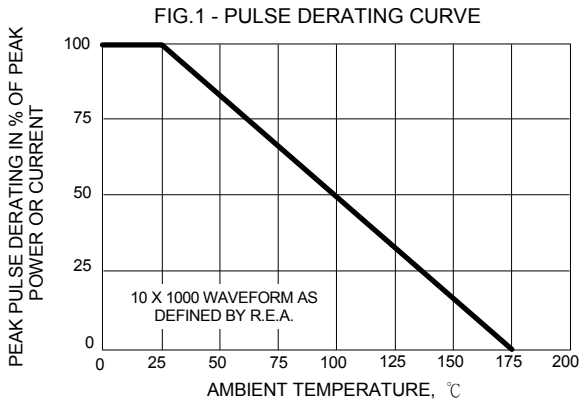
**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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%

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT TA = 25 °C , TP = 1ms (Note 1)	PPK	400	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave @ TJ = 25 °C (Note 2)	IFSM	40	AMPS.
Steady State Power Dissipation at TL = 120 °C	PM(AV)	1.0	WATTS
Maximum Instantaneous forward voltage at 25A for unidirectional devices only	VF	3.5	Volts
Operating Temperature Range	TJ	-55 to +175	°C
Storage Temperature Range	TSTG	-55 to +175	°C

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

2. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).



Device Uni-directional	Device Bi-directional	Device Marking code		Working Peak Reverse Voltage V <sub>VRWM</sub> (Volts)	Breakdown voltage VBR Volts			Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage) V <sub>VRSM</sub> (VOLTS)	Maximum Reverse Surge Current I <sub>RSM</sub> (Amps)	Maximum Reverse Leakage at V <sub>VRWM</sub> I <sub>R</sub> (uA)
		(UNI)	(BI)		Min.	Max.	@IT ( mA)			
SMAJ4.0		HB		4.0	5.40	6.50	10	8.6	46.5	1000
SMAJ5.0A	SMAJ5.0CA	HE	TE	5.0	6.40	7.07	10	9.2	43.5	800 / 1600
SMAJ6.0A	SMAJ6.0CA	HG	TG	6.0	6.67	7.37	10	10.3	38.8	800 / 1600
SMAJ6.5A	SMAJ6.5CA	HK	TK	6.5	7.22	7.98	10	11.2	35.7	500 / 1000
SMAJ7.0A	SMAJ7.0CA	HM	TM	7.0	7.78	8.60	10	12.0	33.3	200 / 400
SMAJ7.5A	SMAJ7.5CA	HP	TP	7.5	8.33	9.21	1	12.9	31.0	100 / 200
SMAJ8.0A	SMAJ8.0CA	HR	TR	8.0	8.89	9.83	1	13.6	29.4	50 / 100
SMAJ8.5A	SMAJ8.5CA	HT	TT	8.5	9.44	10.43	1	14.4	27.7	10 / 20
SMAJ9.0A	SMAJ9.0CA	HV	TV	9.0	10.0	11.1	1	15.4	26.0	5 / 10
SMAJ10A	SMAJ10CA	HX	TX	10	11.1	12.3	1	17.0	23.5	5 / 10
SMAJ11A	SMAJ11CA	HZ	TZ	11	12.2	13.5	1	18.2	22.0	5.0
SMAJ12A	SMAJ12CA	IE	UE	12	13.3	14.7	1	19.9	20.1	5.0
SMAJ13A	SMAJ13CA	IG	UG	13	14.4	15.9	1	21.5	18.6	5.0
SMAJ14A	SMAJ14CA	IK	UK	14	15.6	17.2	1	23.2	17.2	5.0
SMAJ15A	SMAJ15CA	IM	UM	15	16.7	18.5	1	24.4	16.4	5.0
SMAJ16A	SMAJ16CA	IP	UP	16	17.8	19.7	1	26.0	15.3	5.0
SMAJ17A	SMAJ17CA	IR	UR	17	18.9	20.9	1	27.6	14.5	5.0
SMAJ18A	SMAJ18CA	IT	UT	18	20.0	22.1	1	29.2	13.7	5.0
SMAJ20A	SMAJ20CA	IV	UV	20	22.2	24.5	1	32.4	12.3	5.0
SMAJ22A	SMAJ22CA	IX	UX	22	24.4	27.0	1	35.5	11.2	5.0
SMAJ24A	SMAJ24CA	IZ	UZ	24	26.7	29.5	1	38.9	10.3	5.0
SMAJ26A	SMAJ26CA	JE	VE	26	28.9	31.9	1	42.1	9.5	5.0
SMAJ28A	SMAJ28CA	JG	VG	28	31.1	34.4	1	45.4	8.8	5.0
SMAJ30A	SMAJ30CA	JK	VK	30	33.3	36.8	1	48.4	8.3	5.0
SMAJ33A	SMAJ33CA	JM	VM	33	36.7	40.6	1	53.3	7.5	5.0
SMAJ36A	SMAJ36CA	JP	VP	36	40.0	44.2	1	58.1	6.9	5.0
SMAJ40A	SMAJ40CA	JR	VR	40	44.4	49.1	1	64.5	6.2	5.0
SMAJ43A	SMAJ43CA	JT	VT	43	47.8	52.8	1	69.4	5.7	5.0
SMAJ45A	SMAJ45CA	JV	VV	45	50.0	55.3	1	72.7	5.5	5.0
SMAJ48A	SMAJ48CA	JX	VX	48	53.3	58.9	1	77.4	5.2	5.0
SMAJ51A	SMAJ51CA	JZ	VZ	51	56.7	62.7	1	82.4	4.9	5.0
SMAJ54A	SMAJ54CA	RE	WE	54	60.0	66.3	1	87.1	4.6	5.0
SMAJ58A	SMAJ58CA	RG	WG	58	64.4	71.2	1	93.6	4.3	5.0
SMAJ60A	SMAJ60CA	RK	WK	60	66.7	73.7	1	96.8	4.1	5.0
SMAJ64A	SMAJ64CA	RM	WM	64	71.1	78.6	1	103	3.9	5.0
SMAJ70A	SMAJ70CA	RP	WP	70	77.8	86.0	1	113	3.5	5.0
SMAJ75A	SMAJ75CA	RR	WR	75	83.3	92.1	1	121	3.3	5.0
SMAJ78A	SMAJ78CA	RT	WT	78	86.7	95.8	1	126	3.2	5.0
SMAJ85A	SMAJ85CA	RV	VV	85	94.4	104	1	137	2.9	5.0
SMAJ90A	SMAJ90CA	RX	WX	90	100	111	1	146	2.7	5.0
SMAJ100A	SMAJ100CA	RZ	WZ	100	111	123	1	162	2.5	5.0
SMAJ110A	SMAJ110CA	SE	XE	110	122	135	1	177	2.3	5.0
SMAJ120A	SMAJ120CA	SG	XG	120	133	147	1	193	2.0	5.0
SMAJ130A	SMAJ130CA	SK	XK	130	144	159	1	209	1.9	5.0
SMAJ150A	SMAJ150CA	SM	XM	150	167	185	1	243	1.6	5.0
SMAJ160A	SMAJ160CA	SP	XP	160	178	197	1	259	1.5	5.0
SMAJ170A	SMAJ170CA	SR	XR	170	189	209	1	275	1.4	5.0
SMAJ188A	SMAJ188CA	SS	VS	188	209	231	1	328	1.2	5.0
SMAJ200A	SMAJ200CA	ST	YT	200	224	248	1	324	1.2	1.0

**NOTE :**

Suffix 'A ' denotes 5% tolerance device.

1. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.
2. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .  
For Uni-directional devices VF max=3.5v at if=25 A 300us square wave pulse.

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