

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

STAND-OFF VOLTAGE - **6.8** to **200** Volts  
POWER DISSIPATION - **400** WATTS

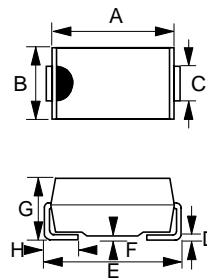
**FEATURES**

- Rating to 200V VBR
- 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 1.0ps for Uni-direction, less than 5.0ns for Bi-direction, from 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 grams

**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	2.01	2.62
H	0.76	1.52

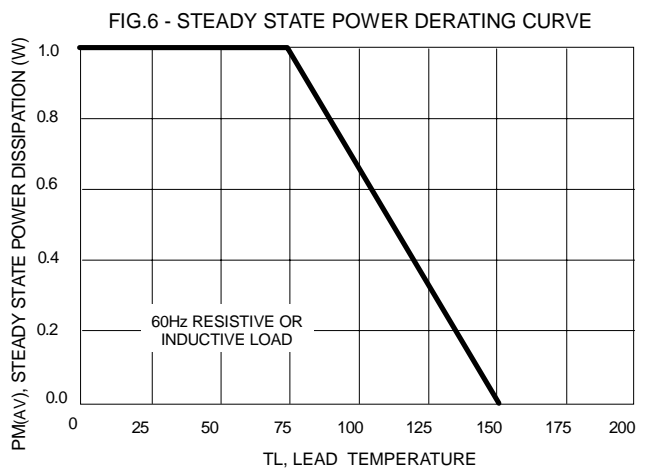
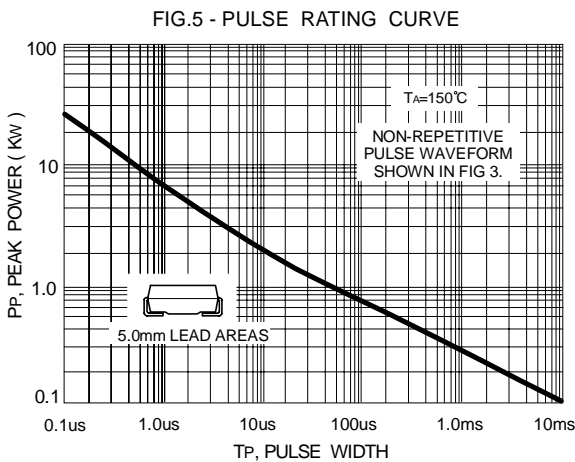
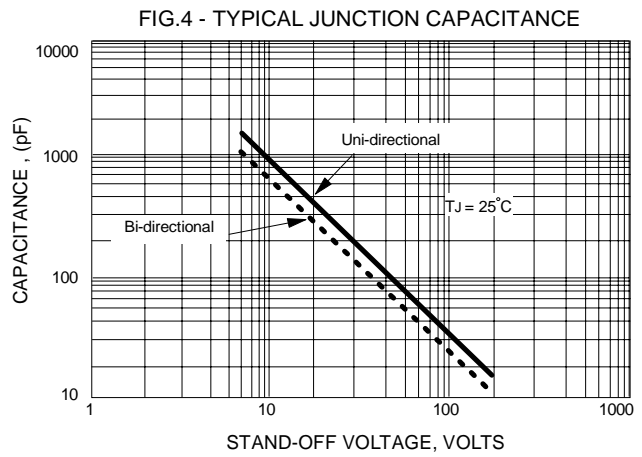
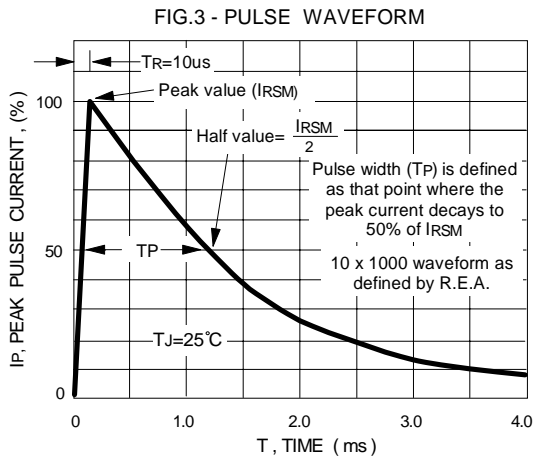
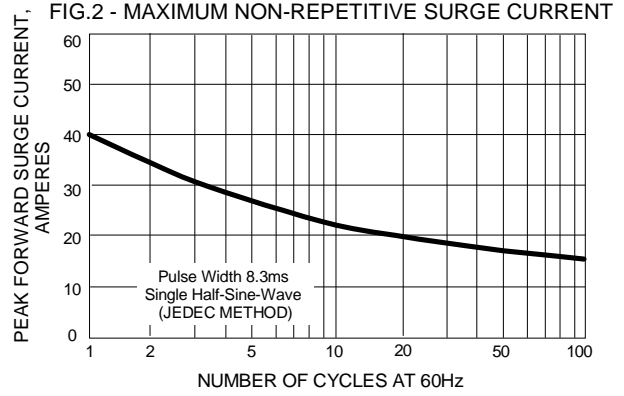
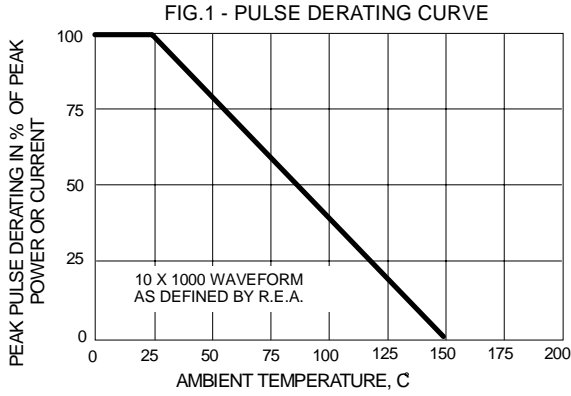
All Dimensions in millimeter

**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 1,2)	PPK	Minimum 400	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD)	IFSM	40	AMPS.
Steady State Power Dissipation at TL = 75°C	PM(AV)	1.0	WATTS
Maximum Instantaneous forward voltage at 35A for unidirectional devices only (Note 3)	VF	3.5	Volts
Operating Temperature Range	TJ	-55 to +150	°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. Thermal Resistance junction to Lead  
3. 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		Breakdown voltage VBR Volts			Working Peak Reverse Voltage VRWM(Volts)	Maximum Reverse Leakage at VRWM IR (uA)	Maximum Reverse Surge Current IRSM(Amps)	Maximum Reverse Voltage at IRSM (Clamping Voltage) VRSM(Volts)
		(UNI)	(BI)	Min.	Max.	@IT( mA)				
SMA6.8	SMA6.8C	ADK	ADM	6.12	7.48	10	5.50	1000	37.0	10.8
SMA6.8A	SMA6.8CA	AEK	AEM	6.45	7.13	10	5.80	1000	38.1	10.5
SMA7.5	SMA7.5C	AFK	AFM	6.75	8.25	10	6.05	500	34.2	11.7
SMA7.5A	SMA7.5CA	AGK	AGM	7.13	7.88	10	6.40	500	35.4	11.3
SMA8.2	SMA8.2C	AHK	AHM	7.38	9.02	10	6.63	200	32.0	12.5
SMA8.2A	SMA8.2CA	AKK	AKM	7.79	8.61	10	7.02	200	33.1	12.1
SMA9.1	SMA9.1C	ALK	ALM	8.19	10.0	10	7.37	50.0	29.0	13.8
SMA9.1A	SMA9.1CA	AMK	AMM	8.65	9.55	10	7.78	50.0	29.8	13.4
SMA10	SMA10C	ANK	ANM	9.00	11.0	1.0	8.10	20.0	26.7	15.0
SMA10A	SMA10CA	APK	APM	9.50	10.5	1.0	8.55	20.0	27.6	14.5
SMA11	SMA11C	AQK	AQM	9.90	12.1	1.0	8.92	5.0	24.7	16.2
SMA11A	SMA11CA	ARK	ARM	10.5	11.6	1.0	9.40	5.0	25.6	15.6
SMA12	SMA12C	ASK	ASM	10.8	13.2	1.0	9.72	5.0	23.1	17.3
SMA12A	SMA12CA	ATK	ATM	11.4	12.6	1.0	10.2	5.0	23.9	16.7
SMA13	SMA13C	AUK	AUM	11.7	14.3	1.0	10.5	5.0	21.0	19.0
SMA13A	SMA13CA	AVK	AVM	12.4	13.7	1.0	11.1	5.0	22.0	18.2
SMA15	SMA15C	AWK	AWM	13.5	16.3	1.0	12.1	5.0	18.2	22.0
SMA15A	SMA15CA	AXK	AXM	14.3	15.8	1.0	12.8	5.0	18.7	21.2
SMA16	SMA16C	AYK	AYM	14.4	17.6	1.0	12.9	5.0	17.0	23.5
SMA16A	SMA16CA	AZK	AZM	15.2	16.8	1.0	13.6	5.0	17.8	22.5
SMA18	SMA18C	BDK	BDM	16.2	19.8	1.0	14.5	5.0	15.1	26.5
SMA18A	SMA18CA	BEK	BEM	17.1	18.9	1.0	15.3	5.0	15.7	25.5
SMA20	SMA20C	BFK	BFM	18.0	22.0	1.0	16.2	5.0	13.7	29.1
SMA20A	SMA20CA	BGK	BGM	19.0	21.0	1.0	17.1	5.0	14.4	27.7
SMA22	SMA22C	BHK	BHM	19.8	24.2	1.0	17.8	5.0	12.5	31.9
SMA22A	SMA22CA	BKK	BKM	20.9	23.1	1.0	18.8	5.0	13.1	30.6
SMA24	SMA24C	BLK	BLM	21.6	26.4	1.0	19.4	5.0	11.5	34.7
SMA24A	SMA24CA	BMK	BMM	22.8	25.2	1.0	20.5	5.0	12.0	33.2
SMA27	SMA27C	BNK	BNM	24.3	29.7	1.0	21.8	5.0	10.2	39.1
SMA27A	SMA27CA	BPK	BPM	25.7	28.4	1.0	23.1	5.0	10.7	37.5
SMA30	SMA30C	BQK	BQM	27.0	33.0	1.0	24.3	5.0	9.2	43.5
SMA30A	SMA30CA	BRK	BRM	28.5	31.5	1.0	25.6	5.0	9.7	41.4
SMA33	SMA33C	BSK	BSM	29.7	36.3	1.0	26.8	5.0	8.4	47.7
SMA33A	SMA33CA	BTK	BTM	31.4	34.7	1.0	28.2	5.0	8.8	45.7
SMA36	SMA36C	BUK	BUM	32.4	39.6	1.0	29.1	5.0	7.7	52.0
SMA36A	SMA36CA	BVK	BVM	34.2	37.8	1.0	30.8	5.0	8.0	49.9
SMA39	SMA39C	BWK	BWM	35.1	42.9	1.0	31.6	5.0	7.1	56.4
SMA39A	SMA39CA	BXK	BXM	37.1	41.0	1.0	33.3	5.0	7.4	53.9
SMA43	SMA43C	BYK	BYM	38.7	47.3	1.0	34.8	5.0	6.5	61.9
SMA43A	SMA43CA	BZK	BZM	40.9	45.2	1.0	36.8	5.0	6.7	59.3

Device Uni-directional	Device Bi-directional	Device Marking code		Breakdown voltage VBR Volts			Working Peak Reverse Voltage	Maximum Reverse Leakage at VRWM	Maximum Reverse Surge Current	Maximum Reverse Voltage at IRSM (Clamping Voltage)
		(UNI)	(BI)	Min.	Max.	@IT( mA)	VRWM(Volts)	IR (uA)	IRSM(Amps)	VRSM(Volts)
SMA47	SMA47C	CDK	CDM	42.3	51.7	1.0	38.1	5.0	5.90	67.8
SMA47A	SMA47CA	CEK	CEM	44.7	49.4	1.0	40.2	5.0	6.17	64.8
SMA51	SMA45C	CFK	CFM	45.9	56.1	1.0	41.3	5.0	5.44	73.5
SMA51A	SMA45CA	CGK	CGM	48.5	53.6	1.0	43.6	5.0	5.71	70.1
SMA56	SMA56C	CHK	CHM	50.4	61.6	1.0	45.4	5.0	4.97	80.5
SMA56A	SMA56CA	CKK	CKM	53.2	58.8	1.0	47.8	5.0	5.19	77.0
SMA62	SMA62C	CLK	CLM	55.8	68.2	1.0	50.2	5.0	4.49	89.0
SMA62A	SMA62CA	CMK	CMM	58.9	65.1	1.0	53.0	5.0	4.71	85.0
SMA68	SMA68C	CNK	CNM	61.2	74.8	1.0	55.1	5.0	4.08	98.0
SMA68A	SMA68CA	CPK	CPM	64.6	71.4	1.0	58.1	5.0	4.35	92.0
SMA75	SMA75C	CQK	CQM	67.5	82.5	1.0	60.7	5.0	3.70	108
SMA75A	SMA75CA	CRK	CRM	71.3	78.8	1.0	64.1	5.0	3.88	103
SMA82	SMA82C	CSK	CSM	73.8	90.2	1.0	66.4	5.0	3.39	118
SMA82A	SMA82CA	CTK	CTM	77.8	86.0	1.0	70.1	5.0	3.54	113
SMA91	SMA91C	CUK	CUM	81.9	100	1.0	73.7	5.0	3.05	131
SMA91A	SMA91CA	CVK	CVM	86.5	95.5	1.0	77.8	5.0	3.20	125
SMA100	SMA100C	CWK	CWM	90.0	110	1.0	81.0	5.0	2.78	144
SMA100A	SMA100CA	CXK	CXM	95.0	105	1.0	85.5	5.0	2.92	137
SMA110	SMA110C	CYK	CYM	99.0	121	1.0	89.2	5.0	2.53	158
SMA110A	SMA110CA	CZK	CZM	105	116	1.0	94.0	5.0	2.63	152
SMA120	SMA120C	RDK	RDM	108	132	1.0	97.2	5.0	2.31	173
SMA120A	SMA120CA	REK	REM	114	126	1.0	102	5.0	2.42	165
SMA130	SMA130C	RFK	RFM	117	143	1.0	105	5.0	2.14	187
SMA130A	SMA130CA	RGK	RGM	124	137	1.0	111	5.0	2.23	179
SMA150	SMA150C	RHK	RHM	135	165	1.0	121	5.0	1.86	215
SMA150A	SMA150CA	RKK	RKM	143	158	1.0	128	5.0	1.93	207
SMA160	SMA160C	RLK	RLM	144	176	1.0	130	5.0	1.74	230
SMA160A	SMA160CA	RMK	RMM	152	168	1.0	136	5.0	1.83	219
SMA170	SMA170C	RNK	RNM	153	187	1.0	138	5.0	1.64	244
SMA170A	SMA170CA	RPK	RPM	162	179	1.0	145	5.0	1.71	234
SMA180	SMA180C	RQK	RQM	162	198	1.0	146	5.0	1.55	258
SMA180A	SMA180CA	RRK	RRM	171	189	1.0	154	5.0	1.63	246
SMA200	SMA200C	RSK	RSM	180	220	1.0	162	5.0	1.39	287
SMA200A	SMA200CA	RTK	RTM	190	210	1.0	171	5.0	1.46	274

**NOTE :**

- 1) Suffix 'A ' denotes 5% tolerance device, no suffix denotes 10 % tolerance device.
- 2) Add suffix 'C ' or ' CA ' after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .
- 4) For Uni-directional devices VF max=3.5v at if=35 A ,0.5 sine wave of 8.3 msec .pulse width.