

SMAJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Voltage Range
5.0 to 170 Volts
300 Watts Peak Power

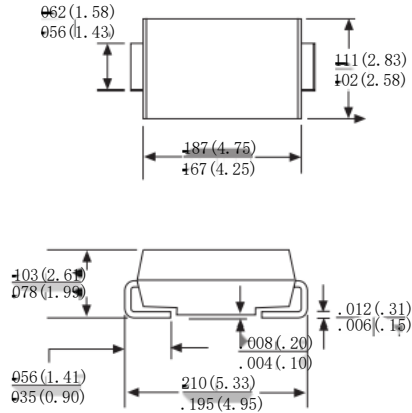
Features

- For surface mounted application
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Fast response time: Typically less than 1.0 ps from 0 volt to BV min.
- Typical IR less than 1.0 μA above 10V
- High temperature soldering guaranteed: 250 °C / 10 seconds at terminals
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- 300 watts peak pulse power capability with a 10x100 μs waveform by 0.01% duty cycle

Mechanical Data

- Case: Molded plastic
- Terminals: Solder plated
- Polarity: Indicated by cathode band
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.064 gram

SMA/DO-214AC



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Type Number		Value	Units
Peak Power Dissipation at TA=25°C, Tp=1ms (Note 1)	PPK	Minimum 300	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3)	IFSM	40.0	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional Only	VF	3.5	Volts
Operating and Storage Temperature Range	TJ, TSTG	-55 to +150	°C

NOTES: 1. Non-repetitive Current Pulse Per Fig. 3 and Derated above TA=25 °C Per Fig. 2.
 2. Mounted on 5.0mm² (0.013mm Thick) Copper Pad to Each Terminal.
 3. 8.3ms Single Half Sine-Wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.
 Devices for Bipolar Applications
 1. For Bidirectional Use CorCASuffix for Types SMAJ5.0 through Types SMAJ170. 2. Electrical Characteristics Apply in Both Directions.

RATING AND CHARACTERISTIC CURVES MAJ SERIES

FIG.1-PEAK PULSE POWER RATING CURVE

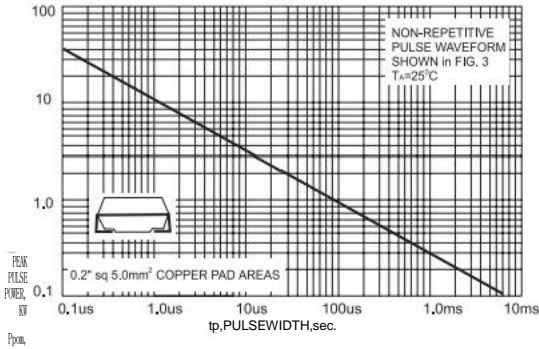


FIG.2-PULSE DERATING CURVE

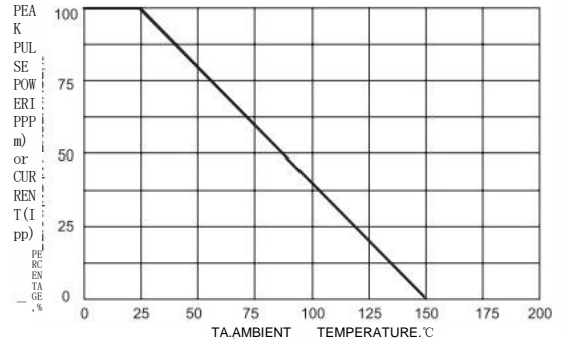


FIG.3-PULSE WAVEFORM

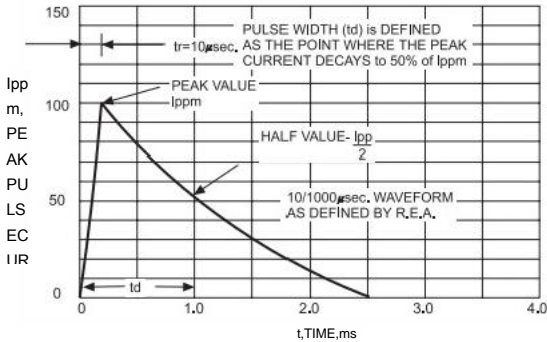


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

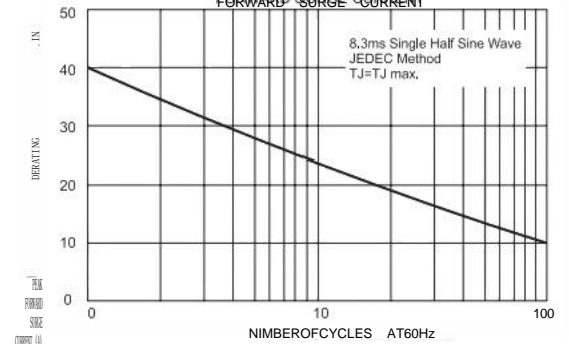
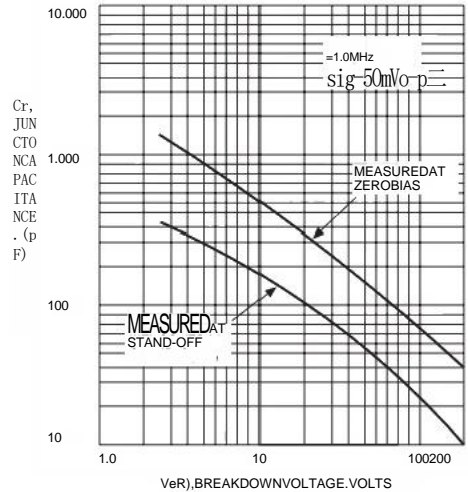


FIG.4-TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device	Device Marking Code	Working Peak Reverse Voltage WWM (Volts)	Breakdown Voltage V(BR) (Volts) at IT Min. Max		Test Current IT (mA)	Maximum Clamping Voltage at IPPWc (Volts) (Note5)	Maximum Peak Pulse Surge Current PPM (Note 5) (Amps)	Maximum Reverse Leakage at VWML (uA)
SMAJ5.0	AD	5.0	6.40	7.30	10	9.6	32.0	800
SMAJ5.0A	AE	5.0	6.40	7.00	10	9.2	34.0	800
SMAJ6.0	AF	6.0	6.67	8.15	10	11.4	27.63	800
SMAJ6.0A	AG	6.0	6.67	7.37	10	10.3	0.52	800
SMAJ6.5	AH	6.5	7.22	8.82	10	12.3	5.62	500
SMAJ6.5A	AK	6.5	7.22	7.98	10	11.2	8.02	500
SMAJ7.0	AL	7.0	7.78	9.51	10	13.3	3.6	200
SMAJ7.0A	AM	7.0	7.78	8.60	1.0	12.0	26.0	200
SMAJ7.5	AN	7.5	8.33	10.3	1.0	14.3	22.0	1001
SMAJ7.5A	AP	7.5	8.33	9.21	1.0	12.9	24.4	0050
SMAJ8.0	AQ	8.0	8.89	10.9	1.0	15.0	21.0	.050
SMAJ8.0A	AR	8.0	8.89	9.83	1.0	13.6	23.0	.0
SMAJ8.5	AS	8.5	9.44	11.5	1.0	15.9	19.8	10.0
SMAJ8.5A	AT	8.5	9.44	104	1.0	14.4	21.8	10.0
SMAJ9.0	AU	9.0	10.0	12.2	1.0	16.9	18.6	5.0
SMAJ9.0A	AV	9.0	10.0	11.1	1.0	15.4	20.4	5.0
SMAJ10	AW	10	11.1	13.6	1.0	18.8	16.7	5.0
SMAJ10A	AX	10	11.1	12.3	1.0	17.0	18.5	5.0
SMAJ11S	AY	11	12.2	14.9	1.0	20.1	15.6	5.0
MAJ11A	AZ	11	12.2	13.5	1.0	18.2	17.3	5.0
SMAJ12	BD	12	13.3	16.3	1.0	22.0	14.3	5.0
SMAU12A	BE	12	13.3	14.7	1.0	19.9	15.8	5.0
SMAJ13	BF	13	14.4	17.6	1.0	23.8	13.0	5.0
SMAJ13A	BG	13	14.4	15.9	1.0	21.5	14.6	5.0
SMAJ14	BH	14	15.6	19.1	1.0	25.8	12.2	5.0
SMAU14A	BK	14	15.6	17.2	1.0	23.2	13.5	5.0
SMAJ15	BL	15	16.7	20.4	1.0	26.9	11.7	5.0
SMAJ15A	BM	15	16.7	18.5	1.0	24.4	12.9	5.0
SMAJ16S	BN	16	17.8	21.8	1.0	28.8	10.9	5.0
MAJ16AS	BP	16	17.8	19.7	1.0	26.0	12.0	5.0
MAJ17SM	BQ	17	18.9	23.1	1.0	30.5	10.3	5.0
AJ17A	BR	17	18.9	20.9	1.0	27.6	11.4	5.0
SMAU18S	BS	18	20.0	24.4	1.0	32.2	9.7	5.0
MAJ18A	BT	18	20.0	22.1	1.0	29.2	10.7	5.0
SMAJ20S	BU	20	22.2	27.1	1.0	35.8	8.79	5.0
MAJ20AS	BV	20	22.2	24.5	1.0	32.4	.7	5.0
MAU22SM	BW	22	24.4	29.8	1.0	39.4	8.08	5.0
AJ22A	BX	22	24.4	26.9	1.0	35.5	.87	5.0
SMAJ24S	BY	24	26.7	32.6	1.0	43.0	.38	5.0
MAU24AS	BZ	24	26.7	29.5	1.0	38.9	.06	5.0
MAJ26SM	CD	26	28.9	35.3	1.0	46.6	.77	5.0
AJ26A	CE	26	28.9	31.9	1.0	42.1	.46	5.0
SMAJ28S	CF	28	31.1	38.0	1.0	50.0	.3	5.0
MAU28A	CG	28	31.1	34.4	1.0	45.4	6.95	5.0
SMAJ30	CH	30	33.3	40.7	1.0	53.5	.86	5.0
SMAJ30A	CK	30	33.3	36.8	1.0	48.4	.5	5.0
SMAJ33	CL	33	36.7	44.9	1.0	59.0	5.3	5.0
SMAJ33A	CM	33	36.7	40.6	1.0	53.3	5.94	5.0
SMAJ36S	CN	36	40.0	48.9	1.0	64.3	.85	5.0
MAJ36AS	CP	36	40.0	44.2	1.0	58.1	.4	5.0
MAJ40SM	CQ	40	44.4	54.3	1.0	71.4	4.4	5.0
AJ40ASM	CR	40	44.4	49.1	1.0	64.5	4.84	5.0
AJ43	CS	43	47.8	58.4	1.0	76.7	.04	5.05
SMAJ43A	CT	43	47.8	52.8	1.0	69.4	.5	.0

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device	Device Marking Code	Working Peak Reverse Voltage VwM (Volts)	Breakdown Voltage V (BR) (Volts) at IT		Test Current T (mA)	Maximum Clamping Voltage at Ippm Vc (Volts) (Note5)	Maximum Peak Pulse Surge Current PP M (Note5) (Amps)	Maximum Reverse Leakage at VwM Ib (uA)
			Min	Max				
SMAJ45	CU	45	50.0	61.1	1.0	80.3	3.9	5.0
SMAJ45A	CV	45	50.0	55.3	1.0	72.7	4.3	5.0
SMAJ48	CW	48	53.3	65.1	1.0	85.5	3.6	5.0
SMAJ48A	CX	48	53.3	58.9	1.0	77.4	4.0	5.0
SMAU51	CY	51	56.7	69.3	1.0	91.1	3.4	5.0
SMAU51A	CZ	51	56.7	62.7	1.0	82.4	3.8	5.0
SMAU54	RD	54	60.0	73.3	1.0	96.3	3.2	5.0
SMAJ54A	RE	54	60.0	66.3	1.0	87.1	3.6	5.0
SMAJ58	RF	58	64.4	78.7	1.0	103	3.0	5.0
SMAJ58A	RG	58	64.4	71.2	1.0	93.6	3.3	5.0
SMAU60	RH	60	66.7	81.5	1.0	107	2.9	5.0
SMAU60A	RK	60	66.7	73.7	1.0	96.8	3.2	5.0
SMAU64	RL	64	71.1	86.9	1.0	114	2.7	5.0
SMAU64A	RM	64	71.1	78.6	1.0	103	3.0	5.0
SMAU70	RN	70	77.8	95.1	1.0	125	2.5	5.0
SMAU70A	RP	70	77.8	86.0	1.0	113	2.7	5.0
SMAU75	RQ	75	83.3	102	1.0	134	2.3	5.0
SMAU75A	RR	75	83.3	92.1	1.0	121	2.6	5.0
SMAU78	RS	78	86.7	106	1.0	139	2.2	5.0
SMAJ78A	RT	78	86.7	95.8	1.0	126	2.5	5.0
SMAU85	RU	85	94.4	115	1.0	151	2.0	5.0
SMAU85A	RV	85	94.4	104	1.0	137	2.2	5.0
SMAU90	RW	90	100	122	1.0	160	1.9	5.0
SMAU90AS	RX	90	001	111	1.0	146	2.1	5.0
MAU100	RY	100	111	136	1.0	179	1.7	5.0
SMAU100A	RZ	100	111	123	1.0	162	1.9	5.0
SMAU110	SD	110	2212	149	1.0	196	1.6	5.0
SMAU110A	SE	110	213	135	1.0	177	1.7	5.0
SMAU120	SF	120	313	163	1.0	214	1.4	5.0
SMAJ120A	SG	120	314	147	1.0	193	1.6	5.0
SMAJ130	SH	130	414	176	1.0	231	1.3	5.0
SMAU130A	SK	130	416	159	1.0	209	1.5	5.0
SMAU150	SL	150	716	204	1.0	266	1.1	5.0
SMAU150A	SM	150	7178	185	1.0	243	1.3	5.0
SMAU160	SN	160	178	218	1.0	287	1.0	5.0
SMAU160A	SP	160	189	197	1.0	259	1.2	5.0
SMAU170S	SQ	170	189	231	1.0	304	1.0	5.0
MAJ170A	SR	170		209	1.0	275	1.1	5.0

- Notes:
 1. Non-repetitive current pulse, per Fig. 3 and derated above TA=25°C
 per Fig. 22. Mounted on 5.0mm² copper pad to each terminal
 3. Lead temperature at TL=75°C
 4. Measures on 8.3ms single half sine-wave duty cycle=4pulse per minute maximum
 5. Peak pulse power average or mis 10/1000us