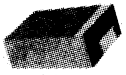
JGD

SMAJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



VOLTAGE RANGE
50 to 170 Volts
CURRENT
300 Watts Peak Power

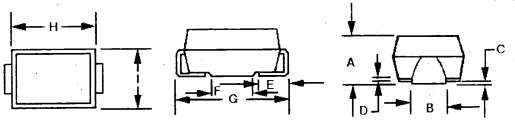
FEATURES

* For surface mounted application
* Low profile package
* Buit-in strain relief
* Glass passivated junction
* Excellent clamping capability
* Fast response time: typically less than 1.0ps from 0 volts to BV min.
* Typical I_R less than 1μA above 10V
* High temperature soldering: 250℃/10 seconds at terminals
* Plastic material used carries Underwriters Laboratory Flammabillity Classification 94V-O
* 400W peak pulse power capability with a 10/1000μs waveform, repetition rate (duty cycle): 0.01% (300w above 78V)

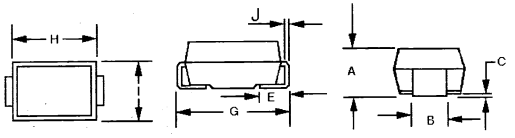
MECHANICAL DATA

* Case: Molded plastic
* Terminals: Solder plated
* Polarity: Indicated by cathode band
* Standard Packaging: 12mm tape per EIA STD RS-481
* Weight: 0.064 grams(SMA/DO-214AC)
  0.091 grams(SMAJ/DO-214AC*)

SMA/DO-214AC*



SMA/DO-214AC



DIMENSIONS				
	SMA/DO-214AC*		SMA/DO-214AC	
	inches	mm	inches	mm
A	.078 to .116(L)	1.98 to 2.95(L)	.078 to .090	1.98 to 2.29
A	.110 to .117(H)	2.80 to 2.98(H)		
B	.067 to .088	1.7 to 2.24	0.052 to .058	1.32 to 1.47
C	.008MAX	0.20MAX	0.008MAX	0.20MAX
D	.02MAX	.51MAX		
E	.030 to .060	.76 to 1.52	.030 to .050	.76 to 1.27
F	.067 to .094	1.65 to 2.39		
G	.204 to .220	5.2 to 5.59	.194 to .208	4.93 to 5.28
H	.160 to .181	4.06 to 4.60	.157 to .177	3.99 to 4.50
I	.101 to .112	2.56 to 2.85	.100 to .110	2.54 to 2.79
J			.006 to .012	.152 to .305

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ ambient temperature unless otherwise specified.

TYPE NUMBER	SYMBOL	VALUE	UNITS
Peak Power Dissipation at T_A = 25℃, T_P = 1ms(Note 1)	P_{PPM}	Minimum 400	Watts
Peak Forward Surge Current, 8.3 ms single half Sine-Wave Superimposed on Rated Load (JEDEC method)(Note 2,3)	I_{FSM}	40	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	−55 to +150	℃

NOTES: 1. Non-repetitive current pulse, per Fig. 3 and derated above T_a = 25℃ per Fig.2. Rating is 300W above 78V.
2. Mounted on 0.2×0.2″(5.0×5.0mm) copper pads to each terminal.
3. 8.3ms single half sine-wave or Equivalent square wave, duty cycle-4 pulses per Minutes maximum.

DEVICE FOR BIPOLAR APPLICATIONS
1. For Bidirectional use C or CA Suffix for types SMAJ5.0 through types SMAJ170.
2. Electrical characteristics apply in both directions.

RATINGS AND CHARACTERISTIC CURVES (SMAJ SERIES)

FIG.1 – PEAK PULSE POWER RATING CURVE

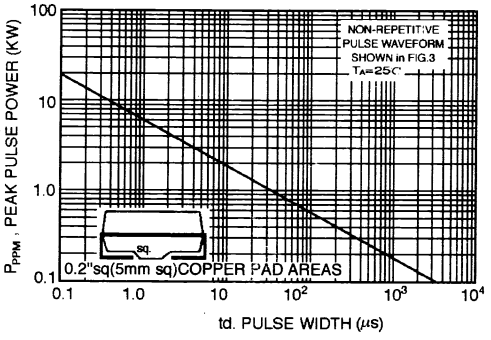


FIG.2 – PULSE DERATING CURVE

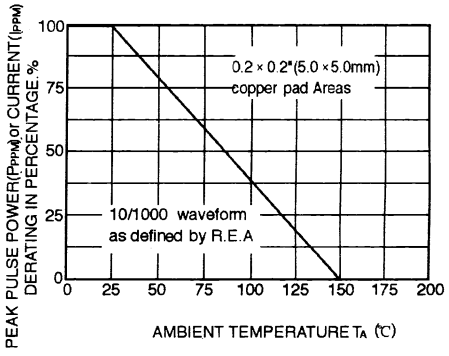


FIG.3 – PULSE WAVEFORM

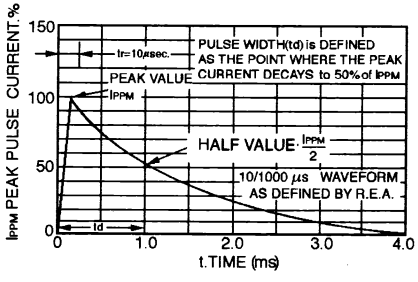


FIG.4 – TYPICAL JUNCTION CAPACITANCE

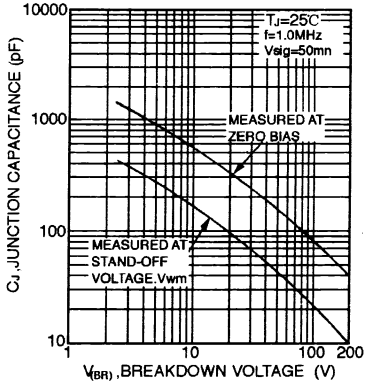
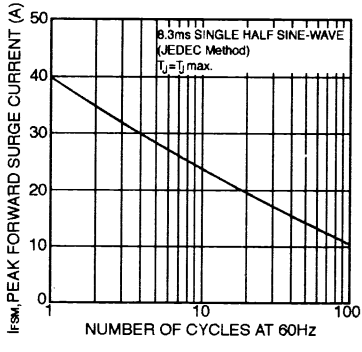


FIG.5 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



ELECTRICAL CHARACTERISTICS ($T_A = 25℃$ unless otherwise noted)

Device	Working peak Reverse Voltage V_{WM} (Volts)	Breakdown Voltage V_{BR} (Volts) at I_T (1)		Test Current I_T (mA)	Maximum Clamping Voltage at I_{ppm} Vc(Volts)	Maximum Peak Pulse Surge Current I_{PPM} (2) (Amps)	Maximum Reverse Leakage at V_{WM} I_D (μA) (3)
		Min.	Max.				
SMAJ5.0	5.0	6.40	7.30	10	9.6	32.0	800
SMAJ5.0A	5.0	6.40	7.00	10	9.2	34.0	800
SMAJ6.0	6.0	6.67	8.15	10	11.4	27.6	800
SMAJ6.0A	6.0	6.67	7.37	10	10.3	30.5	800
SMAJ6.5	6.5	7.22	8.82	10	12.3	25.6	500
SMAJ6.5A	6.5	7.22	7.98	10	11.2	28.0	500
SMAJ7.0	7.0	7.78	9.51	10	13.3	23.6	200
SMAJ7.0A	7.0	7.78	8.60	10	12.0	26.0	200
SMAJ7.5	7.5	8.33	10.3	1.0	14.3	22.0	100
SMAJ7.5A	7.5	8.33	9.21	1.0	12.9	24.4	100
SMAJ8.0	8.0	8.89	10.9	1.0	15.0	21.0	50.0
SMAJ8.0A	8.0	8.89	9.83	1.0	13.6	23.0	50.0
SMAJ8.5	8.5	9.44	11.5	1.0	15.9	19.8	10.0
SMAJ8.5A	8.5	9.44	10.4	1.0	14.4	21.8	10.0
SMAJ9.0	9.0	10.0	12.2	1.0	16.9	18.6	5.0
SMAJ9.0A	9.0	10.0	11.1	1.0	15.4	20.4	5.0
SMAJ10	10	11.1	13.6	1.0	18.8	16.7	5.0
SMAJ10A	10	11.1	12.3	1.0	17.0	18.5	5.0
SMAJ11	11	12.2	14.9	1.0	20.1	15.6	5.0
SMAJ11A	11	12.2	13.5	1.0	18.2	17.3	5.0
SMAJ12	12	13.3	16.3	1.0	22.0	14.3	5.0
SMAJ12A	12	13.3	14.7	1.0	19.9	15.8	5.0
SMAJ13	13	14.4	17.6	1.0	23.8	13.0	5.0
SMAJ13A	13	14.4	15.9	1.0	21.5	14.6	5.0
SMAJ14	14	15.6	19.1	1.0	25.8	12.2	5.0
SMAJ14A	14	15.6	17.2	1.0	23.2	13.5	5.0
SMAJ15	15	16.7	20.4	1.0	26.9	11.7	5.0
SMAJ15A	15	16.7	18.5	1.0	24.4	12.9	5.0
SMAJ16	16	17.8	21.8	1.0	28.8	10.9	5.0
SMAJ16A	16	17.8	19.7	1.0	26.0	12.0	5.0
SMAJ17	17	18.9	23.1	1.0	30.5	10.3	5.0
SMAJ17A	17	18.9	20.9	1.0	27.6	11.4	5.0
SMAJ18	18	20.0	24.4	1.0	32.2	9.7	5.0
SMAJ18A	18	20.0	22.1	1.0	29.2	10.7	5.0
SMAJ20	20	22.2	27.1	1.0	35.8	8.7	5.0
SMAJ20A	20	22.2	24.5	1.0	32.4	9.7	5.0
SMAJ22	22	24.4	29.8	1.0	39.4	8.0	5.0
SMAJ22A	22	24.4	26.9	1.0	35.5	8.8	5.0
SMAJ24	24	26.7	32.6	1.0	43.0	7.3	5.0
SMAJ24A	24	26.7	29.5	1.0	38.9	8.0	5.0
SMAJ26	26	28.9	35.3	1.0	46.6	6.7	5.0
SMAJ26A	26	28.9	31.9	1.0	42.1	7.4	5.0
SMAJ28	28	31.1	38.0	1.0	50.0	6.3	5.0
SMAJ28A	28	31.1	34.4	1.0	45.4	6.9	5.0
SMAJ30	30	33.3	40.7	1.0	53.5	5.8	5.0
SMAJ30A	30	33.3	36.8	1.0	48.4	6.5	5.0
SMAJ33	33	36.7	44.9	1.0	59.0	5.3	5.0
SMAJ33A	33	36.7	40.6	1.0	53.3	5.9	5.0

Device	Working peak Reverse Voltage V_{WM} (Volts)	Breakdown Voltage V_{BR} (Volts) at I_T (1)		Test Current I_T (mA)	Maximum Clamping Voltage at I_{ppm} Vc(Volts)	Maximum Peak Pulse Surge Current I_{PPM} (2) (Amps)	Maximum Reverse Leakage at V_{WM} I_D (μA) (3)
		Min.	Max.				
SMAJ36	36	40.0	48.9	1.0	64.3	4.8	5.0
SMAJ36A	36	40.0	44.2	1.0	58.1	5.4	5.0
SMAJ40	40	44.4	54.3	1.0	71.4	4.4	5.0
SMAJ40A	40	44.4	49.1	1.0	64.5	4.8	5.0
SMAJ43	43	47.8	58.4	1.0	76.7	4.1	5.0
SMAJ43A	43	47.8	52.8	1.0	69.4	4.5	5.0
SMAJ45	45	50.0	61.1	1.0	80.3	3.9	5.0
SMAJ45A	45	50.0	55.3	1.0	72.7	4.3	5.0
SMAJ48	48	53.3	65.1	1.0	85.5	3.6	5.0
SMAJ48A	48	53.3	58.9	1.0	77.4	4.0	5.0
SMAJ51	51	56.7	69.3	1.0	91.1	3.4	5.0
SMAJ51A	51	56.7	62.7	1.0	82.4	3.8	5.0
SMAJ54	54	60.0	73.3	1.0	96.3	3.2	5.0
SMAJ54A	54	60.0	66.3	1.0	87.1	3.6	5.0
SMAJ58	58	64.4	78.7	1.0	103.0	3.0	5.0
SMAJ58A	58	64.4	71.2	1.0	93.6	3.3	5.0
SMAJ60	60	66.7	81.5	1.0	107.0	2.9	5.0
SMAJ60A	60	66.7	73.7	1.0	96.8	3.2	5.0
SMAJ64	64	71.1	86.4	1.0	114.0	2.7	5.0
SMAJ64	64	71.1	78.6	1.0	103.0	3.0	5.0
SMAJ70	70	77.8	95.1	1.0	125	2.5	5.0
SMAJ70A	70	77.8	86.0	1.0	113	2.7	5.0
SMAJ75	75	83.3	102	1.0	134	2.3	5.0
SMAJ75A	75	83.3	92.1	1.0	121	2.6	5.0
SMAJ78	78	86.7	106	1.0	139	2.2	5.0
SMAJ78A	78	86.7	95.8	1.0	126	2.5	5.0
SMAJ85	85	94.4	115	1.0	151	2.0	5.0
SMAJ85A	85	94.4	104	1.0	137	2.2	5.0
SMAJ90	90	100	122	1.0	160	1.9	5.0
SMAJ90A	90	100	111	1.0	146	2.1	5.0
SMAJ100	100	111	136	1.0	179	1.7	5.0
SMAJ100A	100	111	123	1.0	162	1.9	5.0
SMAJ110	110	122	149	1.0	196	1.6	5.0
SMAJ110A	110	122	135	1.0	177	1.7	5.0
SMAJ120	120	133	163	1.0	214	1.4	5.0
SMAJ120A	120	133	147	1.0	193	1.6	5.0
SMAJ130	130	144	176	1.0	231	1.3	5.0
SMAJ130A	130	144	159	1.0	209	1.5	5.0
SMAJ150	150	167	204	1.0	266	1.1	5.0
SMAJ150A	150	167	185	1.0	243	1.3	5.0
SMAJ160	160	178	218	1.0	287	1.0	5.0
SMAJ160A	160	178	197	1.0	259	1.2	5.0
SMAJ170	170	189	231	1.0	304	1.0	5.0
SMAJ170A	170	189	209	1.0	275	1.1	5.0

NOTES:

1. Pulse test: $t_p \leq 50$ms
2. Surge current waveform per Fig3 and derate per Fig2
3. For bi – directional types having V_{WM} of 10 Volts and less, the I_D is doubled.