



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206



SMAJ 5.0A ~ 188CA

Stand-off Voltage : 5.0 to 188V

Peak Pulse Power : 400 W

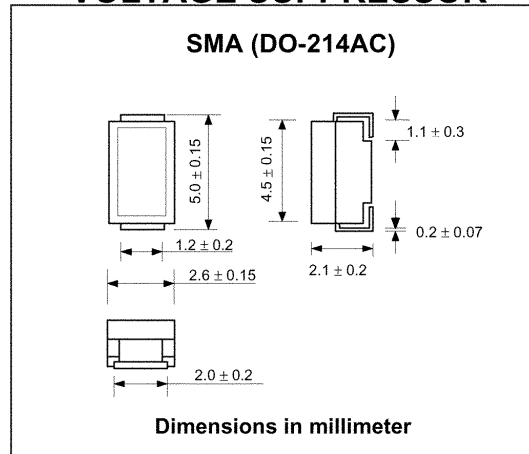
FEATURES :

- * 400W surge capability at 1ms
- * Optimized for LAN protection applications
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less than 1.0 ps from 0 volt to $V_{BR(min.)}$
- * Typical I_R less than 1 μ A above 10V

MECHANICAL DATA

- * Case : SMA Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Mounting position : Any
- * Weight : 0.064 grams

SURFACE MOUNT BI-DIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR



DEVICES FOR UNIPOLAR APPLICATIONS

For uni-directional without "C"

Electrical characteristics apply in both directions

MAXIMUM RATINGS

Rating at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation (Note1,2) Fig. 4	P _{PPM}	Minimum 400	W
Peak Pulse Current on 10/1000 μ s waveform (Note 1, Fig. 1)	I _{PPM}	See Table	A
Steady State Power Dissipation (Note 4)	P _{M(AV)}	1.0	W
Operating Junction 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. 1
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.
- (3) 8.3ms single half sine-wave duty cycle=4 pulses per minutes maximum.
- (4) Lead temperature at $T_L=75^\circ\text{C}$



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Certificate Number: Q10561



Certificate Number: E17276

ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified

TYPE	Marking Code	Breakdown Voltage @ $I_T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ IPPM
		VBR (V)		I_T				
		Min.	Max.					
SMAJ5.0C	S06H	6.40	7.82	10	5.0	1600	41.7	9.6
SMAJ5.0CA	S56H	6.40	7.25	10	5.0	1600	43.5	9.2
SMAJ6.0C	S07A	6.67	8.15	10	6.0	1600	35.1	11.4
SMAJ6.0CA	S57A	6.67	7.37	10	6.0	1600	38.8	10.3
SMAJ6.5C	S07G	7.22	8.82	10	6.5	1000	32.5	12.3
SMAJ6.5CA	S57G	7.22	7.98	10	6.5	1000	35.7	11.2
SMAJ7.0C	S08C	7.78	9.51	10	7.0	400	30.1	13.3
SMAJ7.0CA	S58C	7.78	8.6	10	7.0	400	33.3	12.0
SMAJ7.5C	S08I	8.33	10.2	1.0	7.5	200	28.0	14.3
SMAJ7.5CA	S58I	8.33	9.21	1.0	7.5	200	31.0	12.9
SMAJ8.0C	S09B	8.89	10.9	1.0	8.0	100	26.7	15.0
SMAJ8.0CA	S59B	8.89	9.83	1.0	8.0	100	29.4	13.6
SMAJ8.5C	S010	9.44	11.5	1.0	8.5	20	25.2	15.9
SMAJ8.5CA	S510	9.44	10.4	1.0	8.5	20	27.8	14.4
SMAJ9.0C	S011	10.0	12.2	1.0	9.0	10	23.7	16.9
SMAJ9.0CA	S511	10.0	11.1	1.0	9.0	10	26.0	15.4
SMAJ10C	S012	11.1	13.6	1.0	10	1.0	21.2	18.8
SMAJ10CA	S512	11.1	12.3	1.0	10	1.0	23.5	17.0
SMAJ11C	S013	12.2	14.9	1.0	11	1.0	19.9	20.1
SMAJ11CA	S513	12.2	13.5	1.0	11	1.0	22.0	18.2
SMAJ12C	S014	13.3	16.3	1.0	12	1.0	18.2	22.0
SMAJ12CA	S514	13.3	14.7	1.0	12	1.0	20.1	19.9
SMAJ13C	S015	14.4	17.6	1.0	13	1.0	16.8	23.8
SMAJ13CA	S515	14.4	15.9	1.0	13	1.0	18.6	21.5
SMAJ14C	S016	15.6	19.1	1.0	14	1.0	15.5	25.8
SMAJ14CA	S516	15.6	17.2	1.0	14	1.0	17.2	23.2
SMAJ15C	S018	16.7	20.4	1.0	15	1.0	14.8	26.9
SMAJ15CA	S518	16.7	18.5	1.0	15	1.0	16.4	24.4
SMAJ16C	S019	17.8	21.8	1.0	16	1.0	13.9	28.8
SMAJ16CA	S519	17.8	19.7	1.0	16	1.0	15.4	26.0
SMAJ17C	S020	18.9	23.1	1.0	17	1.0	13.1	30.5
SMAJ17CA	S520	18.9	20.9	1.0	17	1.0	14.5	27.6
SMAJ18C	S021	20.0	24.4	1.0	18	1.0	12.4	32.2
SMAJ18CA	S521	20.0	22.1	1.0	18	1.0	13.7	29.2
SMAJ20C	S023	22.2	27.1	1.0	20	1.0	11.2	35.8
SMAJ20CA	S523	22.2	24.5	1.0	20	1.0	12.3	32.4
SMAJ22C	S026	24.4	29.8	1.0	22	1.0	10.2	39.4
SMAJ22CA	S526	24.4	26.9	1.0	22	1.0	11.3	35.5
SMAJ24C	S028	26.7	32.6	1.0	24	1.0	9.3	43.0
SMAJ24CA	S528	26.7	29.5	1.0	24	1.0	10.3	38.9
SMAJ26C	S030	28.9	35.3	1.0	26	1.0	8.6	46.6
SMAJ26CA	S530	28.9	31.9	1.0	26	1.0	9.5	42.1
SMAJ28C	S033	31.1	38.0	1.0	28	1.0	8.0	50.0
SMAJ28CA	S533	31.1	34.4	1.0	28	1.0	8.8	45.4
SMAJ30C	S035	33.3	40.7	1.0	30	1.0	7.5	53.5
SMAJ30CA	S535	33.3	36.8	1.0	30	1.0	8.3	48.4



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ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified

TYPE	Marking Code	Breakdown Voltage @ $I_T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ IPPM
		VBR (V)		IT				
		Min.	Max.					
				VWM	Id	IPPM	Vc	
				(V)	(μ A)	(A)	(V)	
SMAJ33C	S039	36.7	44.9	1.0	33	1.0	6.8	59.0
SMAJ33CA	S539	36.7	40.6	1.0	33	1.0	7.5	53.3
SMAJ36C	S042	40.0	48.9	1.0	36	1.0	6.2	64.3
SMAJ36CA	S542	40.0	44.2	1.0	36	1.0	6.9	58.1
SMAJ40C	S047	44.4	54.3	1.0	40	1.0	5.6	71.4
SMAJ40CA	S547	44.4	49.1	1.0	40	1.0	6.2	64.5
SMAJ43C	S050	47.8	58.4	1.0	43	1.0	5.2	76.7
SMAJ43CA	S550	47.8	52.8	1.0	43	1.0	5.7	69.4
SMAJ45C	S053	50.0	61.1	1.0	45	1.0	5.0	80.3
SMAJ45CA	S553	50.0	55.3	1.0	45	1.0	5.5	72.7
SMAJ48C	S056	53.3	65.1	1.0	48	1.0	4.7	85.5
SMAJ48CA	S556	53.3	58.9	1.0	48	1.0	5.2	77.4
SMAJ51C	S060	56.7	69.3	1.0	51	1.0	4.4	91.1
SMAJ51CA	S560	56.7	62.7	1.0	51	1.0	4.9	82.4
SMAJ54C	S063	60.0	73.3	1.0	54	1.0	4.2	96.3
SMAJ54CA	S563	60.0	66.3	1.0	54	1.0	4.6	87.1
SMAJ58C	S068	64.4	78.7	1.0	58	1.0	3.9	103
SMAJ58CA	S568	64.4	71.2	1.0	58	1.0	4.3	93.6
SMAJ60C	S071	66.7	81.5	1.0	60	1.0	3.7	107
SMAJ60CA	S571	66.7	73.7	1.0	60	1.0	4.1	96.8
SMAJ64C	S075	71.1	86.4	1.0	64	1.0	3.5	114
SMAJ64CA	S575	71.1	78.6	1.0	64	1.0	3.9	103
SMAJ70C	S082	77.8	95.1	1.0	70	1.0	3.2	125
SMAJ70CA	S582	77.8	86	1.0	70	1.0	3.5	113
SMAJ75C	S088	83.3	102	1.0	75	1.0	3.0	134
SMAJ75CA	S588	83.3	92.1	1.0	75	1.0	3.3	121
SMAJ78C	S091	86.7	106	1.0	78	1.0	2.9	139
SMAJ78CA	S591	86.7	95.8	1.0	78	1.0	3.2	126
SMAJ85C	S099	94.4	115	1.0	85	1.0	2.0	151
SMAJ85CA	S599	94.4	104	1.0	85	1.0	2.2	137
SMAJ90C	S0B1	100	122	1.0	90	1.0	1.9	160
SMAJ90CA	S5B1	100	111	1.0	90	1.0	2.1	146
SMAJ100C	S0B2	111	136	1.0	100	1.0	1.7	179
SMAJ100CA	S5B2	111	123	1.0	100	1.0	1.9	162
SMAJ110C	S0B3	122	149	1.0	110	1.0	1.5	196
SMAJ110CA	S5B3	122	135	1.0	110	1.0	1.7	177
SMAJ120C	S0B4	133	163	1.0	120	1.0	1.4	214
SMAJ120CA	S5B4	133	147	1.0	120	1.0	1.6	193
SMAJ130C	S0B5	144	176	1.0	130	1.0	1.3	231
SMAJ130CA	S5B5	144	159	1.0	130	1.0	1.4	209
SMAJ150C	S0B8	167	204	1.0	150	1.0	1.1	268
SMAJ150CA	S5B8	167	185	1.0	150	1.0	1.2	243
SMAJ160C	S0B9	178	218	1.0	160	1.0	1.0	287
SMAJ160CA	S5B9	178	197	1.0	160	1.0	1.2	259
SMAJ170C	S0D0	189	231	1.0	170	1.0	0.99	304
SMAJ170CA	S5D0	189	209	1.0	170	1.0	1.09	275
SMAJ188C	S0D1	209	255	1.0	188	1.0	0.90	344
SMAJ188CA	S5D1	209	231	1.0	188	1.0	0.91	328

Note: (1) Pulse test : $t_p \leq 50ms$.



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RATING AND CHARACTERISTIC CURVES (SMAJ5.0C - SMAJ188CA)

FIG.1 - PULSE DERATING CURVE

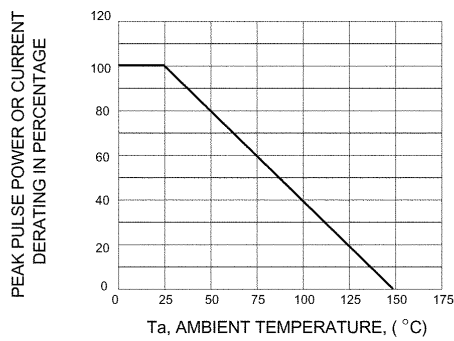


FIG.2 - TYPICAL JUNCTION CAPACITANCE

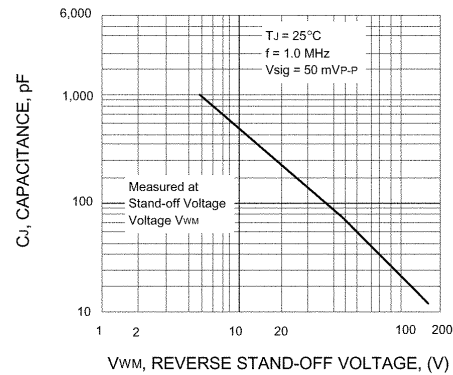


FIG.3 - PULSE WAVEFORM

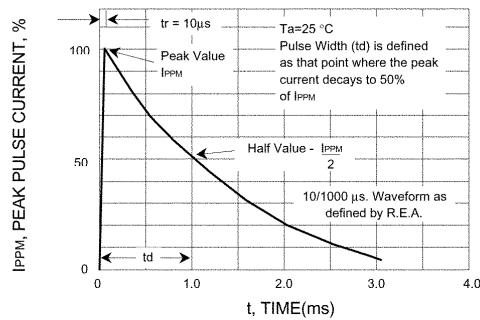


FIG.4 - PEAK PULSE POWER RATING CURVE

