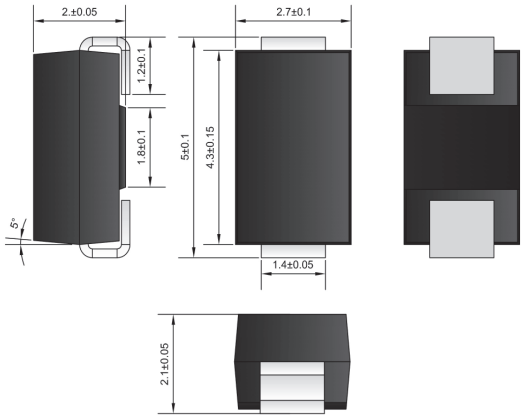
SMAJL3.3A THRU SMAJL64A

400W Surface Mount Transient Voltage Suppressors Ultra Low IR Type

■ Features

- Ultra Low leakage current.
- 400W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Glass passivated chip junction.
- Ultra high-speed switching.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

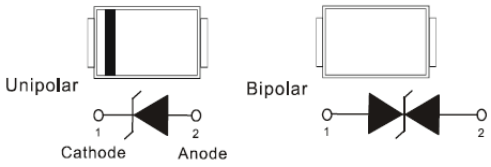
■ Outline SMA(DO-214AC)



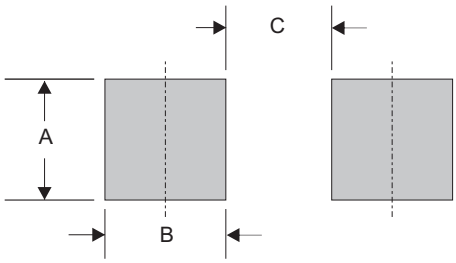
Dimensions in millimeters

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC / SMA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.002 ounce, 0.055 gram



■ SMA foot print



A	B	C
0.068 (1.70)	0.104 (2.60)	0.060 (1.50)

Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	SMAJ series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	P_{PPM}	400	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	I_{FSM}	40	A
Steady state power dissipation	on infinite heatsink at T_L = 75°C	P_D	1.0	W
Peak pulse current	with a 10/1000us waveform, note 1	I_{PPM}	See next table	A
Maximum instantaneous forward voltage	at 25A for unidirectional only, note 3	V_F	3.5 / 5.0	V
Operating temperature		T_J	-55 ~ +150	°C
Storage temperature		T_{STG}	-55 ~ +150	°C

Notes : 1. Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°C per Fig. 2.
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3. V_F < 3.5V for devices of V_{BR} < 200V and V_F <5.0V for devices of V_{BR} > 201V.

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

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T (1) (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA) (3)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A) (2)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
SMAJL3.3A	LAD	5.23	5.97	10	3.3	50	47	8.5
SMAJL5.0A	LAE	6.43	6.97	10	5.0	20	43.5	9.2
SMAJL6.0A	LAG	6.70	7.34	10	6.0	20	38.8	10.3
SMAJL6.5A	LAK	7.25	7.95	10	6.5	15	35.7	11.2
SMAJL7.0A	LAM	7.81	8.57	10	7.0	15	33.3	12
SMAJL7.5A	LAN	8.36	9.18	1	7.5	10	31	12.9
SMAJL8.0A	LAR	8.92	9.80	1	8.0	2	29.4	13.6
SMAJL8.5A	LAS	9.47	10.37	1	8.5	2	27.8	14.4
SMAJL9.0A	LAT	10.03	11.07	1	9.0	0.2	26	15.4
SMAJL10A	LAU	11.13	12.27	1	10.0	0.2	23.5	17
SMAJL11A	LAZ	12.23	13.47	1	11.0	0.2	22	18.2
SMAJL12A	LBE	13.33	14.67	1	12.0	0.2	18.6	21.5
SMAJL13A	LBG	14.43	15.87	1	13.0	0.1	43.5	9.2
SMAJL14A	LBK	15.63	17.17	1	14.0	0.1	17.2	23.2
SMAJL15A	LBM	16.73	18.29	1	15.0	0.1	13.4	24.4
SMAJL16A	LBP	17.83	19.67	1	16.0	0.1	15.4	26
SMAJL17A	LBR	18.93	20.87	1	17.0	0.1	14.5	27.6
SMAJL18A	LBT	20.03	22.07	1	18.0	0.1	13.7	29.2
SMAJL20A	LBV	22.23	24.47	1	20.0	0.1	12.3	32.4
SMAJL22A	LBX	24.43	26.87	1	22.0	0.1	11.3	35.5
SMAJL24A	LBZ	26.73	29.47	1	24.0	0.1	10.3	38.9
SMAJL26A	LCE	28.93	31.87	1	26.0	0.1	9.5	42.1
SMAJL28A	LCG	31.13	34.37	1	28.0	0.1	8.8	45.4
SMAJL30A	LCK	33.33	36.77	1	30.0	0.1	8.3	48.4
SMAJL33A	LCM	36.73	40.57	1	33.0	0.1	7.5	53.3
SMAJL36A	LCP	40.03	44.17	1	36.0	0.1	6.9	58.1
SMAJL40A	LCR	44.4	49.1	1	40.0	0.1	6.2	64.5
SMAJL43A	LCT	47.8	52.8	1	43.0	0.1	5.7	69.4
SMAJL45A	LCV	50	55.3	1	45.0	0.1	5.5	72.7
SMAJL48A	LCX	53.3	58.9	1	48.0	0.1	5.2	77.4
SMAJL51A	LCZ	56.7	62.7	1	51.0	0.1	4.9	82.4
SMAJL54A	LRE	60	66.3	1	54.0	0.1	4.6	87.1
SMAJL58A	LRG	64.4	71.2	1	58.0	0.1	4.3	93.6
SMAJL60A	LRK	66.7	73.7	1	60.0	0.1	4.1	96.8
SMAJL64A	LRM	71.1	78.6	1	64.0	0.1	3.9	103

Notes

(1) V_{BR} measured after I_T applied for 300 μs, I_T = square wave pulse or equivalent

(2) Surge current waveform per fig. 3 and derate per fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE C62.35

■ Rating and characteristic curves

Fig.1 - Pealk Pulse Power Rating Curve

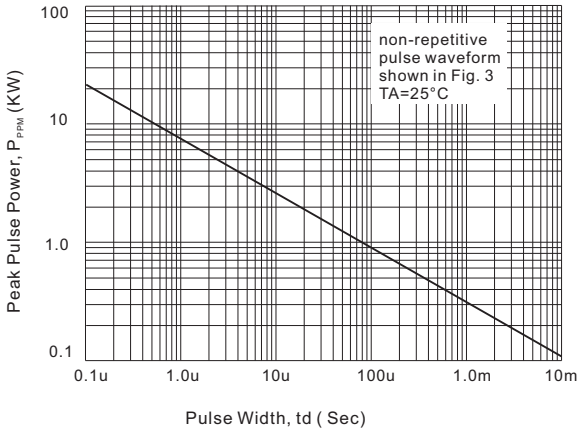


Fig.2 - Pulse Derating Curve

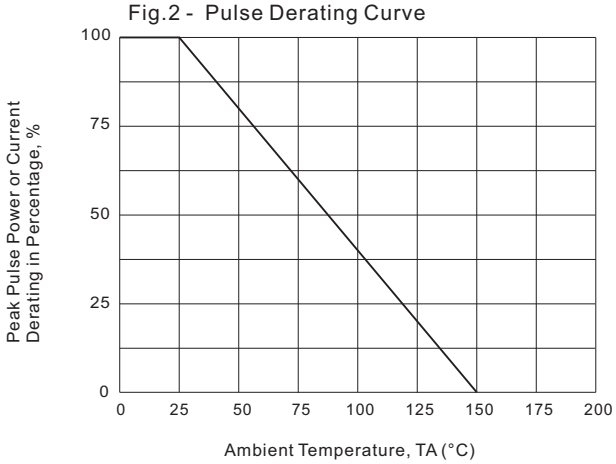


Fig.3 - Pulse Waveform

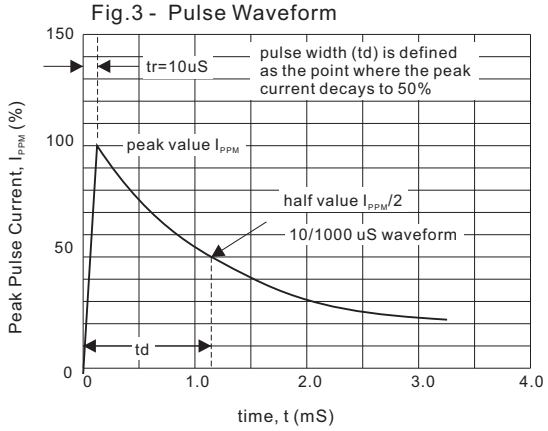


Fig.4 - Typical Junction Capacitance

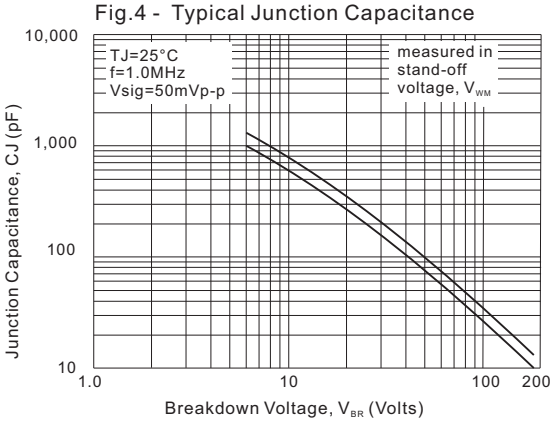


Fig.5 - Steady State Power Derating Curve

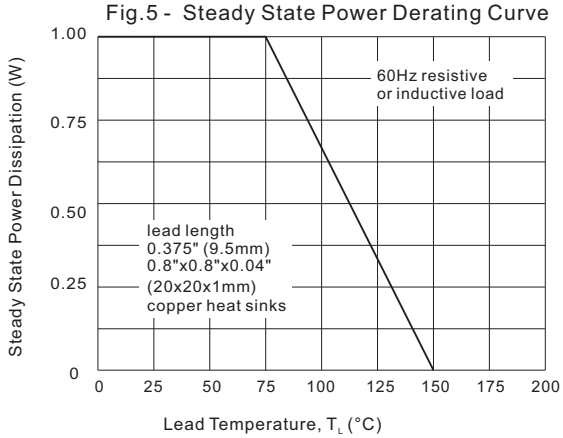


Fig.6 - Maximum Non-Repetitive
Forward Surge Current