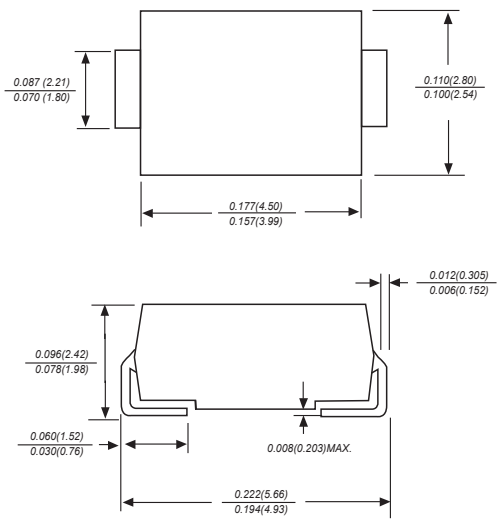
SMAJ5.0(C)A THRU SMAJ170(C)A

GLASS PASSIVAED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

Standoff Voltage: *5.0-170 Volts* Peak Pulse Power: *400 Watts*

SMA

DO-214AC



Dimensions in inches and (millimeters)

FEATURE

- 400W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Material: UL Flammability Classification Rating 94V-0

MECHANICAL DATA

- Case: SMA, Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Weight: 0.064 grams (approx.)
- Ordering Info: See Page 3

DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bidirectional use suffix A or CA for types SMAJ5.0A thru SMAJ170A (e.g. SMAJ5.0CA,SMAJ170CA)
Electrical characteristics apply in both directions.

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above T_A = 25°C) (Note 1)	P_{PK}	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I_{FSM}	40	A
Steady State Power Dissipation @ T_L = 75°C	$PM_{(AV)}$	1.0	W
Instantaneous Forward Voltage @ I_{PP} = 35A (Notes 1, 2, & 3)	V_F	3.5	V
Operating Temperature Range	T_j	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

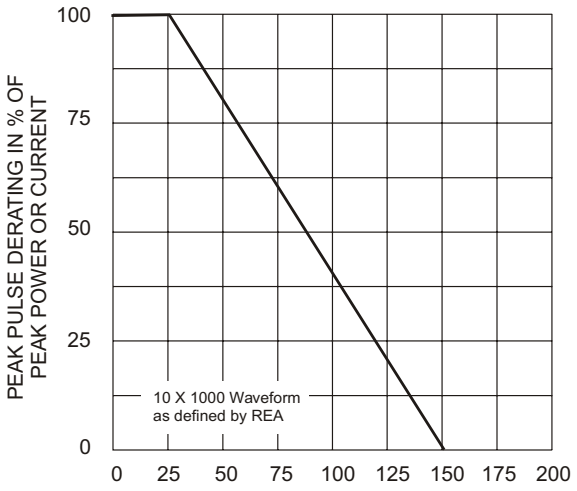
Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
3. Unidirectional units only.

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}		
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (μA)	V_C (V)	(A)		
SMAJ5.0(C)A	5.0	6.40	7.25	10	800	9.2	43.5		
SMAJ6.0(C)A	6.0	6.67	7.37	10	800	10.3	38.8		
SMAJ6.5(C)A	6.5	7.22	7.98	10	500	11.2	35.7		
SMAJ7.0(C)A	7.0	7.78	8.60	10	200	12.0	33.3		
SMAJ7.5(C)A	7.5	8.33	9.21	1.0	100	12.9	31.0		
SMAJ8.0(C)A	8.0	8.89	9.83	1.0	50	13.6	29.4		
SMAJ8.5(C)A	8.5	9.44	10.4	1.0	10	14.4	27.7		
SMAJ9.0(C)A	9.0	10.0	11.1	1.0	5.0	15.4	26.0		
SMAJ10(C)A	10	11.1	12.3	1.0	5.0	17.0	23.5		
SMAJ11(C)A	11	12.2	13.5	1.0	5.0	18.2	22.0		
SMAJ12(C)A	12	13.3	14.7	1.0	5.0	19.9	20.1		
SMAJ13(C)A	13	14.4	15.9	1.0	5.0	21.5	18.6		
SMAJ14(C)A	14	15.6	17.2	1.0	5.0	23.2	17.2		
SMAJ15(C)A	15	16.7	18.5	1.0	5.0	24.4	16.4		
SMAJ16(C)A	16	17.8	19.7	1.0	5.0	26.0	15.3		
SMAJ17(C)A	17	18.9	20.9	1.0	5.0	27.6	14.5		
SMAJ18(C)A	18	20.0	22.1	1.0	5.0	29.2	13.7		
SMAJ20(C)A	20	22.2	24.5	1.0	5.0	32.4	12.3		
SMAJ22(C)A	22	24.4	26.9	1.0	5.0	35.5	11.2		
SMAJ24(C)A	24	26.7	29.5	1.0	5.0	38.9	10.3		
SMAJ26(C)A	26	28.9	31.9	1.0	5.0	42.1	9.5		
SMAJ28(C)A	28	31.1	34.4	1.0	5.0	45.4	8.8		
SMAJ30(C)A	30	33.3	36.8	1.0	5.0	48.4	8.3		
SMAJ33(C)A	33	36.7	40.6	1.0	5.0	53.3	7.5		
SMAJ36(C)A	36	40.0	44.2	1.0	5.0	58.1	6.9		
SMAJ40(C)A	40	44.4	49.1	1.0	5.0	64.5	6.2		
SMAJ43(C)A	43	47.8	52.8	1.0	5.0	69.4	5.7		
SMAJ45(C)A	45	50.0	55.3	1.0	5.0	72.7	5.5		
SMAJ48(C)A	48	53.3	58.9	1.0	5.0	77.4	5.2		
SMAJ51(C)A	51	56.7	62.7	1.0	5.0	82.4	4.9		
SMAJ54(C)A	54	60.0	66.3	1.0	5.0	87.1	4.6		
SMAJ58(C)A	58	64.4	71.2	1.0	5.0	93.6	4.3		
SMAJ60(C)A	60	66.7	73.7	1.0	5.0	96.8	4.1		
SMAJ64(C)A	64	71.1	78.6	1.0	5.0	103	3.9		
SMAJ70(C)A	70	77.8	86.0	1.0	5.0	113	3.5		
SMAJ75(C)A	75	83.3	92.1	1.0	5.0	121	3.3		
SMAJ78(C)A	78	86.7	95.8	1.0	5.0	126	2.2		
SMAJ85(C)A	85	94.4	104	1.0	5.0	137	2.9		
SMAJ90(C)A	90	100	111	1.0	5.0	146	2.7		
SMAJ100(C)A	100	111	123	1.0	5.0	162	2.5		
SMAJ110(C)A	110	122	135	1.0	5.0	177	2.3		
SMAJ120(C)A	120	133	147	1.0	5.0	193	2.0		
SMAJ130(C)A	130	144	159	1.0	5.0	209	1.9		
SMAJ150(C)A	150	167	185	1.0	5.0	243	1.6		
SMAJ160(C)A	160	178	197	1.0	5.0	259	1.5		
SMAJ170(C)A	170	189	209	1.0	5.0	275	1.4		

Notes: 4. Suffix C denotes Bi-directional device.

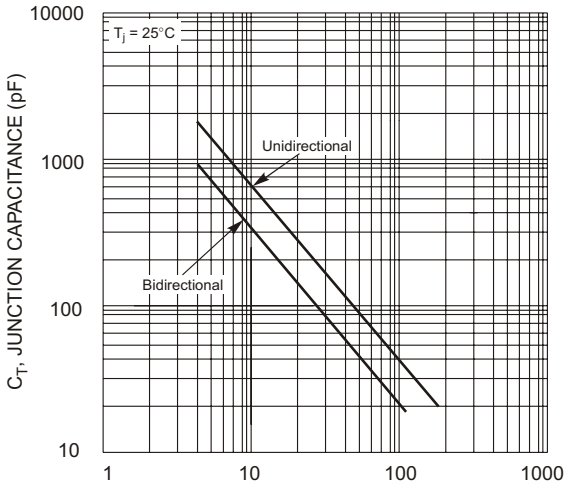
5. V_{BR} measured with I_T current pulse = 300μs

6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.



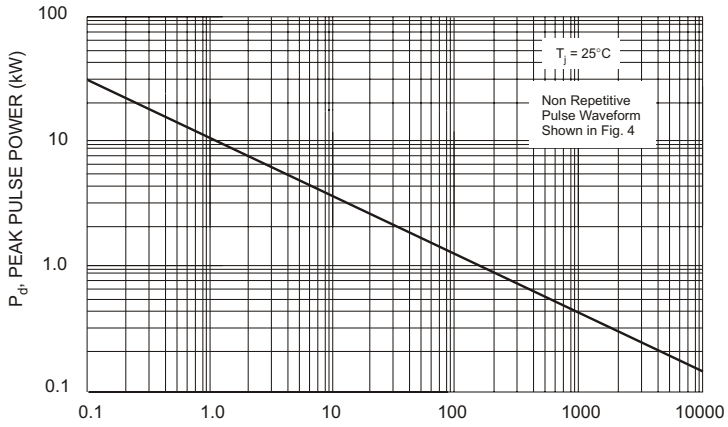
T_A, AMBIENT TEMPERATURE (°C)

Fig. 1 Pulse Derating Curve



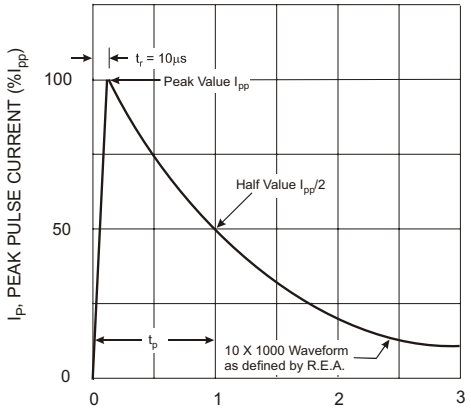
V_{WM}, STANDOFF VOLTAGE (V)

Fig. 2 Typical Total Capacitance



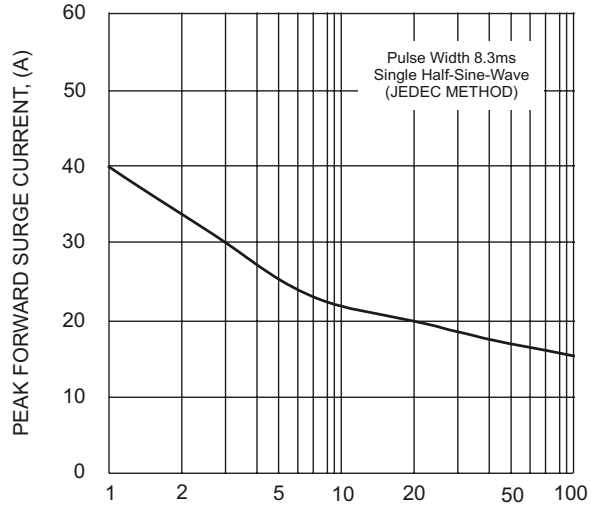
t_p PULSE WIDTH (μs)

Fig. 3 Pulse Rating Curve



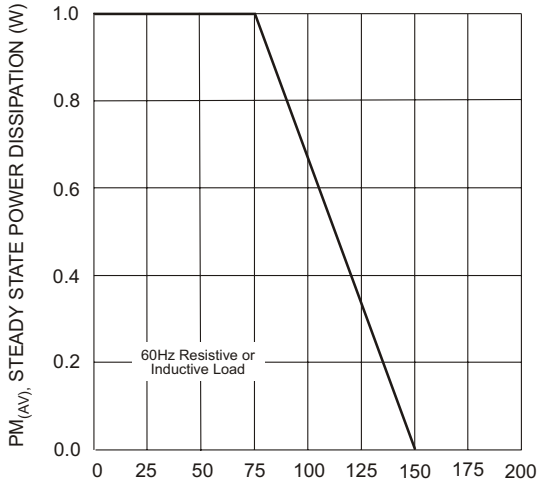
t, TIME (ms)

Fig. 4 Pulse Waveform



NUMBER OF CYCLES AT 60Hz

Fig. 5 Maximum Non-Repetitive Surge Current



T_L, LEAD TEMPERATURE (°C)

Fig. 6 Steady State Power Derating Curve