



DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

SMAJ5.0
THRU
SMAJ220CA

TECHNICAL SPECIFICATIONS OF TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE RANGE - 5.0 to 220Volts PEAK PULSE POWER - 400 Watts

FEATURES

- * Glass passivated junction
- * 400 Watts Peak Pulse Power capability on 10/1000 μ s waveform
- * Excellent clamping capability
- * Low inductance
- * Fast response time

MECHANICAL DATA

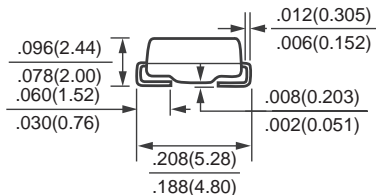
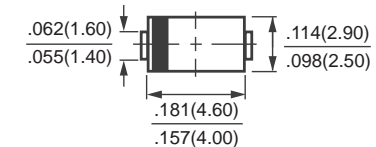
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Lead: MIL-STD-202E, Method 208 guaranteed
- * Polarity: Color band denotes positive end (cathode) except bidirectional types
- * Mounting position: Any
- * Weight: 0.064 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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



SMA (DO-214AC)



Dimensions in inches and (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA suffix (e.g. SMAJ5.0C, SMAJ220CA).

Electrical characteristics apply in both directions

	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note1, FIG.1)	PPPM	400	Watts
Steady State Power Dissipation at TA = 25°C Lead Lengths .375"(9.5mm) (Note 2)	PM(AV)	1.0	Watts
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load(JEDEC Method) (Note 3)	IFSM	40	Amps
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 Copper Leaf area of 0.2 X 0.2" (5.0 X 5.0mm) per Fig. 5
 3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

RATING AND CHARACTERISTIC CURVES (SMAJ5.0 THRU SMAJ220CA)

FIG. 1 - PEAK PULSE POWER RATING CURVE

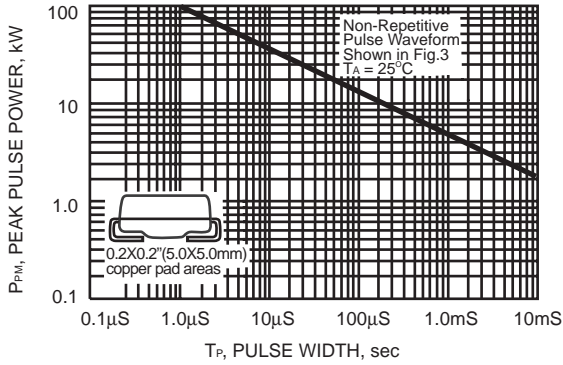


FIG. 2 - PULSE DERATING CURVE

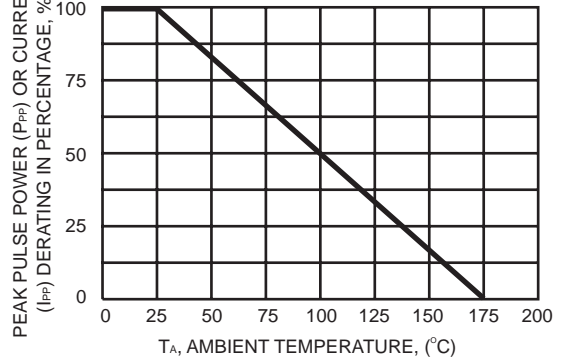


FIG. 3 - PULSE WAVEFORM

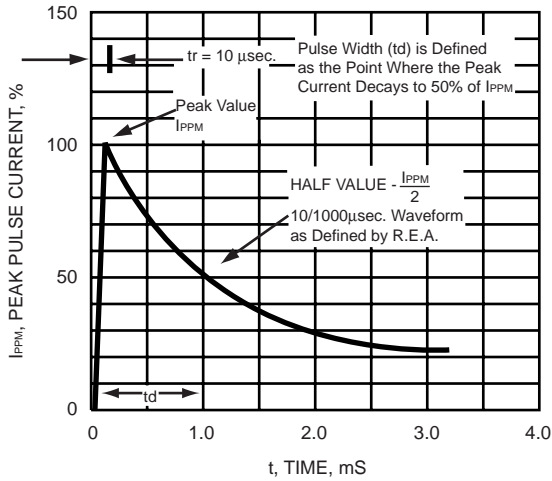


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

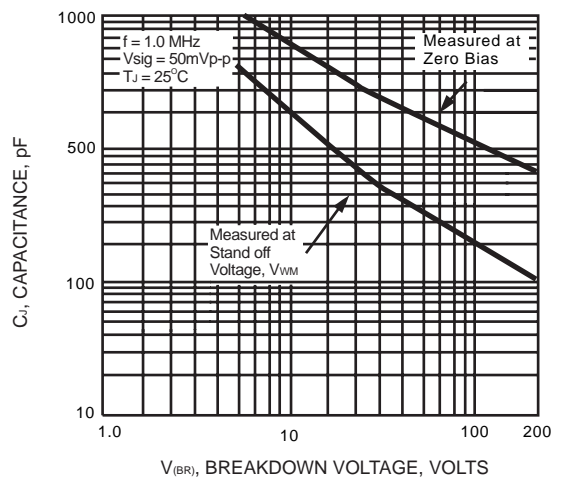
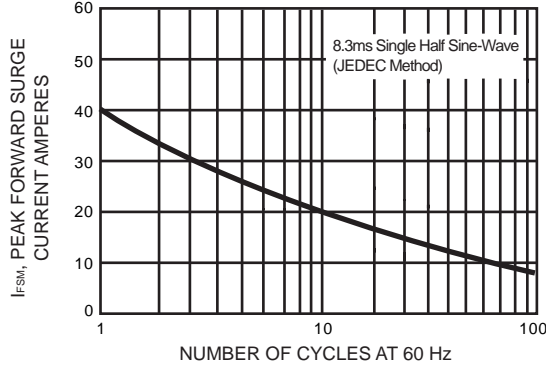


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



SMAJ (400W) SERIES TRANSIENT VOLTAGE SUPPRESSORS

TYPE	Reverse Stand-off Voltage	Breakdown Voltage @ I _T		Test Current	Maximum Reverse Leakage @ V _{RWM}		Maximum Clamping Voltage @ I _{PP}	Maximum Peak Pulse Current
		V _{BR}			I _T	I _R		
	V _{RWM}	Min. V	Max. V	I _T		UNI- μA	BI- μA	V _c
	V	V	V	mA			V	A
SMAJ5.0	5.0	6.40	7.55	10	800	1600	9.6	41.6
SMAJ5.0A	5.0	6.40	7.25	10	800	1600	9.2	43.5
SMAJ6.0	6.0	6.67	8.45	10	800	1600	11.4	35.1
SMAJ6.0A	6.0	6.67	7.67	10	800	1600	10.3	38.8
SMAJ6.5	6.5	7.22	9.14	10	500	1000	12.3	32.5
SMAJ6.5A	6.5	7.22	8.30	10	500	1000	11.2	35.7
SMAJ7.0	7.0	7.78	9.86	10	200	400	13.3	30.1
SMAJ7.0A	7.0	7.78	8.95	10	200	400	12.0	33.3
SMAJ7.5	7.5	8.33	10.67	1	100	200	14.3	28
SMAJ7.5A	7.5	8.33	9.58	1	100	200	12.9	31
SMAJ8.0	8.0	8.89	11.30	1	50	100	15.0	26.5
SMAJ8.0A	8.0	8.89	10.23	1	50	100	13.6	29.4
SMAJ8.5	8.5	9.44	11.92	1	10	20	15.9	25.1
SMAJ8.5A	8.5	9.44	10.82	1	10	20	14.4	27.7
SMAJ9.0	9.0	10.0	12.6	1	5	10	16.9	23.6
SMAJ9.0A	9.0	10.0	11.5	1	5	10	15.4	26
SMAJ10	10	11.1	14.1	1	5		18.8	21.2
SMAJ10A	10	11.1	12.8	1	5		17.0	23.5
SMAJ11	11	12.2	15.4	1	5		20.1	20
SMAJ11A	11	12.2	14.0	1	5		18.2	22
SMAJ12	12	13.3	16.9	1	5		22.0	18.1
SMAJ12A	12	13.3	15.3	1	5		19.9	20.1
SMAJ13	13	14.4	18.2	1	5		23.8	16.8
SMAJ13A	13	14.4	16.5	1	5		21.5	18.6
SMAJ14	14	15.6	19.8	1	5		25.8	15.5
SMAJ14A	14	15.6	17.9	1	5		23.2	17.2
SMAJ15	15	16.7	21.1	1	5		26.9	14.8
SMAJ15A	15	16.7	19.2	1	5		24.4	16.4
SMAJ16	16	17.8	22.6	1	5		28.8	13.8
SMAJ16A	16	17.8	20.5	1	5		26.0	15.3
SMAJ17	17	18.9	23.9	1	5		30.5	13.1
SMAJ17A	17	18.9	21.7	1	5		27.6	14.5
SMAJ18	18	20.0	25.3	1	5		32.2	12.4
SMAJ18A	18	20.0	23.3	1	5		29.2	13.7
SMAJ20	20	22.2	28.1	1	5		35.8	11.1
SMAJ20A	20	22.2	25.5	1	5		32.4	12.3
SMAJ22	22	24.4	30.9	1	5		39.4	10.1
SMAJ22A	22	24.4	28.0	1	5		35.5	11.2
SMAJ24	24	26.7	33.8	1	5		43.0	9.3
SMAJ24A	24	26.7	30.7	1	5		38.9	10.3
SMAJ26	26	28.9	36.6	1	5		46.6	8.6
SMAJ26A	26	28.9	33.2	1	5		42.1	9.5
SMAJ28	28	31.1	39.4	1	5		50.0	8
SMAJ28A	28	31.1	35.8	1	5		45.4	8.8
SMAJ30	30	33.3	42.2	1	5		53.5	7.5
SMAJ30A	30	33.3	38.3	1	5		48.4	8.3
SMAJ33	33	36.7	46.5	1	5		59.0	6.8
SMAJ33A	33	36.7	42.2	1	5		53.3	7.5
SMAJ36	36	40.0	50.7	1	5		64.3	6.2
SMAJ36A	36	40.0	46.0	1	5		58.1	6.9
SMAJ40	40	44.4	56.3	1	5		71.4	5.6
SMAJ40A	40	44.4	51.1	1	5		64.5	6.2

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	V_{RWM}	V_{BR}			I_T	I_R		
		Min.	Max.	UNI-		BI-		
		V	V	μA		μA		
SMAJ43	43	47.8	60.5	1	5	76.7	5.2	
SMAJ43A	43	47.8	54.9	1	5	69.4	5.7	
SMAJ45	45	50.0	63.3	1	5	80.3	5	
SMAJ45A	45	50.0	57.5	1	5	72.7	5.5	
SMAJ48	48	53.3	67.5	1	5	85.5	4.7	
SMAJ48A	48	53.3	61.3	1	5	77.4	5.2	
SMAJ51	51	56.7	71.8	1	5	91.1	4.4	
SMAJ51A	51	56.7	65.2	1	5	82.4	4.9	
SMAJ54	54	60.0	76.0	1	5	96.3	4.2	
SMAJ54A	54	60.0	69.0	1	5	87.1	4.6	
SMAJ58	58	64.4	81.6	1	5	103.0	3.9	
SMAJ58A	58	64.4	74.1	1	5	93.6	4.3	
SMAJ60	60	66.7	84.5	1	5	107.0	3.7	
SMAJ60A	60	66.7	76.7	1	5	96.8	4.1	
SMAJ64	64	71.1	90.1	1	5	114	3.5	
SMAJ64A	64	71.1	81.8	1	5	103	3.9	
SMAJ70	70	77.8	98.6	1	5	125	3.2	
SMAJ70A	70	77.8	89.5	1	5	113	3.5	
SMAJ75	75	83.3	105.7	1	5	134	3	
SMAJ75A	75	83.3	95.8	1	5	121	3.3	
SMAJ78	78	86.7	109.8	1	5	139	2.9	
SMAJ78A	78	86.7	99.7	1	5	126	2.2	
SMAJ85	85	94.4	119.2	1	5	151	2.6	
SMAJ85A	85	94.4	108.2	1	5	137	2.9	
SMAJ90	90	100	126.5	1	5	160	2.5	
SMAJ90A	90	100	115.5	1	5	146	2.7	
SMAJ100	100	111	141.0	1	5	179	2.2	
SMAJ100A	100	111	128.0	1	5	162	2.5	
SMAJ110	110	122	154.5	1	5	196	2	
SMAJ110A	110	122	140.5	1	5	177	2.3	
SMAJ120	120	133	169.0	1	5	214	1.9	
SMAJ120A	120	133	153.0	1	5	193	2	
SMAJ130	130	144	182.5	1	5	231	1.7	
SMAJ130A	130	144	165.5	1	5	209	1.9	
SMAJ150	150	167	211.5	1	5	268	1.5	
SMAJ150A	150	167	192.5	1	5	243	1.6	
SMAJ160	160	178	226.0	1	5	287	1.4	
SMAJ160A	160	178	205.0	1	5	259	1.5	
SMAJ170	170	189	239.5	1	5	304	1.3	
SMAJ170A	170	189	217.5	1	5	275	1.4	
SMAJ180	180	198	253.8	1	5	322	1.2	
SMAJ180A	180	198	230.4	1	5	292	1.3	
SMAJ190	190	209	267.9	1	5	340	1.2	
SMAJ190A	190	209	243.2	1	5	308	1.3	
SMAJ200	200	220	282.0	1	5	358	1.1	
SMAJ200A	200	220	256.0	1	5	324	1.2	
SMAJ210	210	231	296.1	1	5	376	1.1	
SMAJ210A	210	231	268.8	1	5	340	1.2	
SMAJ220	220	242	310.2	1	5	394	1	
SMAJ220A	220	242	281.6	1	5	356	1.1	

NOTES:1. V_{BR} measured after I_T applied for 300 μs . I_T = Square Wave Pulse or equivalent.

2. For Bidirectional use "C" or "CA" Suffix for all types (e.g.: SMAJ5.0C, SMAJ.0CA, SMAJ220C, SMAJ220CA).

Electrical characteristics apply in both directions.

3. For bidirectional types having V_{RWM} of 10 volts and less, the I_D limit is doubled.

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