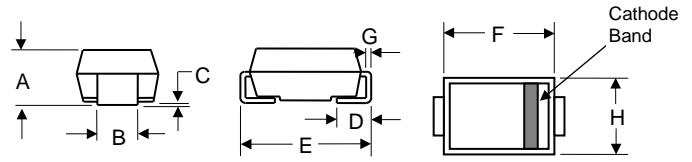


Features

- * Low profile package
- * Ideal for automated placement
- * Glass passivated junction
- * Excellent clamping capability
- * Fast response time: Typically less than 1.0ps
- * Typical I_R less than $1\mu A$ above 10V
- * 400 watts peak pulse power capability with a 10 / 1000 μs waveform (300W above 78V)



RoHS
COMPLIANT



DIM	DO-214AC (SMA)			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.078	0.090	1.98	2.29
B	0.052	0.058	1.32	1.47
C	---	0.008	---	0.20
D	0.030	0.052	0.76	1.32
E	0.193	0.208	4.90	5.28
F	0.157	0.177	3.99	4.50
G	0.006	0.012	0.152	0.305
H	0.100	0.110	2.54	2.79

Mechanical Data

- * Case: DO-214AC (SMA)
- * Molding compound: UL flammability classification rating 94V-0
- * Moisture sensitivity level (MSL): level 1, per J-STD-020
- * Terminal: Matte tin plated leads, solderable per JESD22-B102
Meet JESD 201 class 2 whisker test
- * Polarity: Indicated by cathode band
- * Weight: 0.06 g (approximately)

Maximum Ratings and Electrical Characteristics ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at $T_A=25^\circ C$, $T_P=1ms$ (Note1)	P_{PK}	400	W
Steady state power dissipation	P_D	1	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load(JEDEC method) (Note2/3)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A for Unidirectional only	V_F	3.5	V
Operating and storage temperature range	T_J / T_{STG}	-55 to +150	$^\circ C$

- Note: 1. Non-repetitive current pulse per fig. 3 and derated above $T_A=25^\circ C$ per fig. 2
 2. Mounted on 0.2×0.2 "($5.0 \times 5.0mm$) copper pads to each terminal
 3. 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum

Devices for Bipolar Applications

1. For bidirectional use C or CA suffix for types SMAJ5.0 thru types SMAJ440
2. Electrical characteristics apply in both directions.



SMAJ5.0A THRU SMAJ440A

Surface Mount Transient Voltage Suppressors Diodes

Electrical Characteristics (T_A=25°C unless otherwise noted)

Type Number		Reverse Stand Off Voltage V _R (Volts)	Breakdown Voltage V _{BR} (Volts) @ I _T (Note1)		Test Current I _T (mA)	Maximum Clamping Voltage V _C (Volts) @ I _{PP}	Maximum Peak Pulse Current I _{PP} (Amps) (Note2)	Maximum Reverse Leakage I _R (µA) @ V _R (Note3)
			Min	Max				
(Uni)	(Bi)							
SMAJ5.0	SMAJ5.0C	5	6.4	7.3	10	9.6	41.7	800
SMAJ5.0A	SMAJ5.0CA	5	6.4	7	10	9.2	43.5	800
SMAJ6.0	SMAJ6.0C	6	6.67	8.15	10	11.4	35.1	800
SMAJ6.0A	SMAJ6.0CA	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5	SMAJ6.5C	6.5	7.22	8.82	10	12.3	32.5	500
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0	SMAJ7.0C	7	7.78	9.51	10	13.3	30.1	200
SMAJ7.0A	SMAJ7.0CA	7	7.78	8.6	10	12	33.3	200
SMAJ7.5	SMAJ7.5C	7.5	8.33	10.3	1	14.3	28	100
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	12.9	31	100
SMAJ8.0	SMAJ8.0C	8	8.89	10.9	1	15	26.7	50
SMAJ8.0A	SMAJ8.0CA	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5	SMAJ8.5C	8.5	9.44	11.5	1	15.9	25.2	10
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.4	1	14.4	27.8	10
SMAJ9.0	SMAJ9.0C	9	10	12.2	1	16.9	23.7	5
SMAJ9.0A	SMAJ9.0CA	9	10	11.1	1	15.4	26	5
SMAJ10	SMAJ10C	10	11.1	13.6	1	18.8	21.3	5
SMAJ10A	SMAJ10CA	10	11.1	12.3	1	17	23.5	5
SMAJ11	SMAJ11C	11	12.2	14.9	1	20.1	19.9	5
SMAJ11A	SMAJ11CA	11	12.2	13.5	1	18.2	22	5
SMAJ12	SMAJ12C	12	13.3	16.3	1	22	18.2	5
SMAJ12A	SMAJ12CA	12	13.3	14.7	1	19.9	20.1	5
SMAJ13	SMAJ13C	13	14.4	17.6	1	23.8	16.8	5
SMAJ13A	SMAJ13CA	13	14.4	15.9	1	21.5	18.6	5
SMAJ14	SMAJ14C	14	15.6	19.1	1	25.8	15.5	5
SMAJ14A	SMAJ14CA	14	15.6	17.2	1	23.2	17.2	5
SMAJ15	SMAJ15C	15	16.7	20.4	1	26.9	14.9	5
SMAJ15A	SMAJ15CA	15	16.7	18.5	1	24.4	16.4	5
SMAJ16	SMAJ16C	16	17.8	21.8	1	28.8	13.9	5
SMAJ16A	SMAJ16CA	16	17.8	19.7	1	26	15.4	5
SMAJ17	SMAJ17C	17	18.9	23.1	1	30.5	13.1	5
SMAJ17A	SMAJ17CA	17	18.9	20.9	1	27.6	14.5	5
SMAJ18	SMAJ18C	18	20	24.4	1	32.2	12.4	5
SMAJ18A	SMAJ18CA	18	20	22.1	1	29.2	13.7	5
SMAJ20	SMAJ20C	20	22.2	27.1	1	35.8	11.2	5
SMAJ20A	SMAJ20CA	20	22.2	24.5	1	32.4	12.3	5
SMAJ22	SMAJ22C	22	24.4	29.8	1	39.4	10.2	5
SMAJ22A	SMAJ22CA	22	24.4	26.9	1	35.5	11.3	5
SMAJ24	SMAJ24C	24	26.7	32.6	1	43	9.3	5
SMAJ24A	SMAJ24CA	24	26.7	29.5	1	38.9	10.3	5
SMAJ26	SMAJ26C	26	28.9	35.3	1	46.6	8.6	5
SMAJ26A	SMAJ26CA	26	28.9	31.9	1	42.1	9.5	5



SMAJ5.0A THRU SMAJ440A

Surface Mount Transient Voltage Suppressors Diodes

Electrical Characteristics (T_A=25°C unless otherwise noted)

Type Number		Reverse Stand Off Voltage V _R (Volts)	Breakdown Voltage V _{BR} (Volts) @ I _T (Note1)		Test Current I _T (mA)	Maximum Clamping Voltage V _C (Volts) @ I _{PP}	Maximum Peak Pulse Current I _{PP} (Amps) (Note2)	Maximum Reverse Leakage I _R (μA) @ V _R (Note3)
			Min	Max				
(Uni)	(Bi)							
SMAJ28	SMAJ28C	28	31.1	38	1	50	8	5
SMAJ28A	SMAJ28CA	28	31.1	34.4	1	45.4	8.8	5
SMAJ30	SMAJ30C	30	33.3	40.7	1	53.5	7.5	5
SMAJ30A	SMAJ30CA	30	33.3	36.8	1	48.4	8.3	5
SMAJ33	SMAJ33C	33	36.7	44.9	1	59	6.8	5
SMAJ33A	SMAJ33CA	33	36.7	40.6	1	53.3	7.5	5
SMAJ36	SMAJ36C	36	40	48.9	1	64.3	6.2	5
SMAJ36A	SMAJ36CA	36	40	44.2	1	58.1	6.9	5
SMAJ40	SMAJ40C	40	44.4	54.3	1	71.4	5.6	5
SMAJ40A	SMAJ40CA	40	44.4	49.1	1	64.5	6.2	5
SMAJ43	SMAJ43C	43	47.8	58.4	1	76.7	5.2	5
SMAJ43A	SMAJ43CA	43	47.8	52.8	1	69.4	5.8	5
SMAJ45	SMAJ45C	45	50	61.1	1	80.3	5	5
SMAJ45A	SMAJ45CA	45	50	55.3	1	72.7	5.5	5
SMAJ48	SMAJ48C	48	53.3	65.1	1	95.5	4.7	5
SMAJ48A	SMAJ48CA	48	53.3	58.9	1	77.4	5.2	5
SMAJ51	SMAJ51C	51	56.7	69.3	1	91.1	4.4	5
SMAJ51A	SMAJ51CA	51	56.7	62.7	1	82.4	4.9	5
SMAJ54	SMAJ54C	54	60	73.3	1	96.3	4.2	5
SMAJ54A	SMAJ54CA	54	60	66.3	1	87.1	4.6	5
SMAJ58	SMAJ58C	58	64.4	78.7	1	103	3.9	5
SMAJ58A	SMAJ58CA	58	64.4	71.2	1	93.6	4.3	5
SMAJ60	SMAJ60C	60	66.7	81.5	1	107	3.7	5
SMAJ60A	SMAJ60CA	60	66.7	73.7	1	96.8	4.1	5
SMAJ64	SMAJ64C	64	71.1	86.4	1	114	3.5	5
SMAJ64A	SMAJ64CA	64	71.1	78.6	1	103	3.9	5
SMAJ70	SMAJ70C	70	77.8	95.1	1	125	3.2	5
SMAJ70A	SMAJ70CA	70	77.8	86	1	113	3.5	5
SMAJ75	SMAJ75C	75	83.3	102	1	134	3	5
SMAJ75A	SMAJ75CA	75	83.3	92.1	1	121	3.3	5
SMAJ78	SMAJ78C	78	86.7	106	1	139	2.9	5
SMAJ78A	SMAJ78CA	78	86.7	95.8	1	126	3.2	5
SMAJ85	SMAJ85C	85	94.4	115	1	151	2.6	5
SMAJ85A	SMAJ85CA	85	94.4	104	1	137	2.9	5
SMAJ90	SMAJ90C	90	100	122	1	160	2.5	5
SMAJ90A	SMAJ90CA	90	100	111	1	146	2.7	5
SMAJ100	SMAJ100C	100	111	136	1	179	2.2	5
SMAJ100A	SMAJ100CA	100	111	123	1	162	2.5	5
SMAJ110	SMAJ110C	110	122	149	1	196	2	5
SMAJ110A	SMAJ110CA	110	122	135	1	177	2.3	5
SMAJ120	SMAJ120C	120	133	163	1	214	1.9	5
SMAJ120A	SMAJ120CA	120	133	147	1	193	2.1	5



SMAJ5.0A THRU SMAJ440A

Surface Mount Transient Voltage Suppressors Diodes

Electrical Characteristics (T_A=25°C unless otherwise noted)

Type Number		Reverse Stand Off Voltage V _R (Volts)	Breakdown Voltage V _{BR} (Volts) @ I _T (Note1)		Test Current I _T (mA)	Maximum Clamping Voltage V _C (Volts) @ I _{PP}	Maximum Peak Pulse Current I _{PP} (Amps) (Note2)	Maximum Reverse Leakage I _R (μA) @ V _R (Note3)
			Min	Max				
(Uni)	(Bi)							
SMAJ130	SMAJ130C	130	144	176	1	231	1.7	5
SMAJ130A	SMAJ130CA	130	144	159	1	209	1.9	5
SMAJ150	SMAJ150C	150	167	204	1	266	1.5	5
SMAJ150A	SMAJ150CA	150	167	185	1	243	1.6	5
SMAJ160	SMAJ160C	160	178	218	1	287	1.4	5
SMAJ160A	SMAJ160CA	160	178	197	1	259	1.5	5
SMAJ170	SMAJ170C	170	189	231	1	304	1.3	5
SMAJ170A	SMAJ170CA	170	189	209	1	275	1.5	5
SMAJ180	SMAJ180C	180	201	244.8	1	321	1.2	5
SMAJ180A	SMAJ180CA	180	201	220	1	290	1.4	5
SMAJ190	SMAJ190C	190	211	258.4	1	339	1.2	5
SMAJ190A	SMAJ190CA	190	211	232	1	306	1.3	5
SMAJ200	SMAJ200C	200	222	282	1	356	1.1	5
SMAJ200A	SMAJ200CA	200	222	247	1	322	1.2	5
SMAJ210	SMAJ210C	210	233	296.1	1	375	1.1	5
SMAJ210A	SMAJ210CA	210	233	268.8	1	339	1.2	5
SMAJ220	SMAJ220C	220	244	310.2	1	392	1	5
SMAJ220A	SMAJ220CA	220	244	272	1	355	1.1	5
SMAJ250	SMAJ250C	250	278	342.5	1	447	0.9	5
SMAJ250A	SMAJ250CA	250	278	309	1	403	1	5
SMAJ300	SMAJ300C	300	333	411	1	535	0.7	5
SMAJ300A	SMAJ300CA	300	333	371	1	484	0.8	5
SMAJ350	SMAJ350C	350	389	479.5	1	624	0.6	5
SMAJ350A	SMAJ350CA	350	389	432	1	565	0.7	5
SMAJ400	SMAJ400C	400	444	548	1	687	0.6	5
SMAJ400A	SMAJ400CA	400	444	494	1	645	0.6	5
SMAJ440	SMAJ440C	440	489	602.8	1	786	0.5	5
SMAJ440A	SMAJ440CA	440	489	543	1	710	0.6	5

Note: 1. Pulse test: t_p ≤ 50ms

2. Surge current waveform per Figure 3 and derate per Figure 2

3. For bi-directional types having V_{WM} of 10 volts and less, the I_D limit is doubled

4. Add suffix "C" or "CA" after type number to specify bi-directional devices

5. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device

Ratings and Characteristic Curves

FIG. 1 – PEAK PULSE POWER RATING CURVE

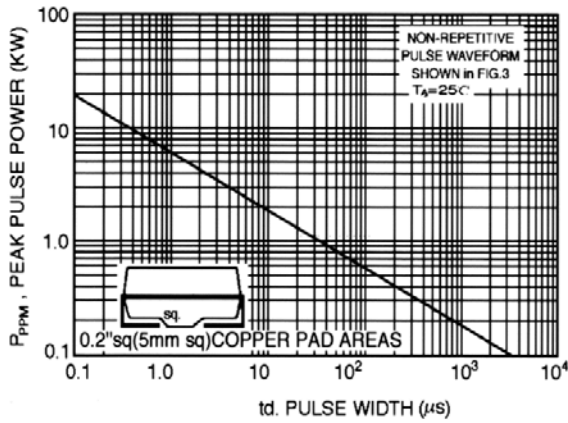


FIG. 2 – PULSE DERATING CURVE

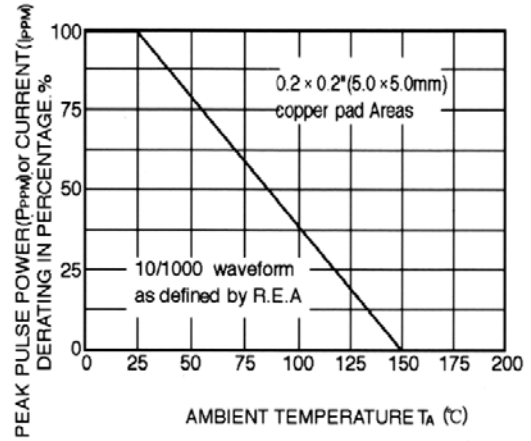


FIG. 3 – PULSE WAVEFORM

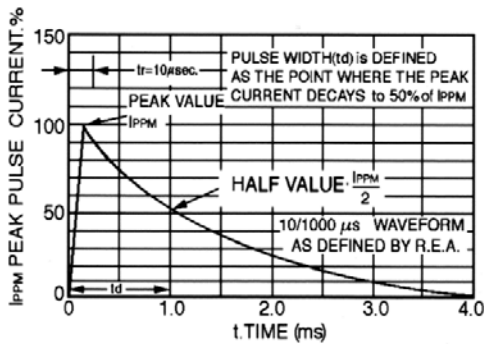


FIG. 4 – TYPICAL JUNCTION CAPACITANCE

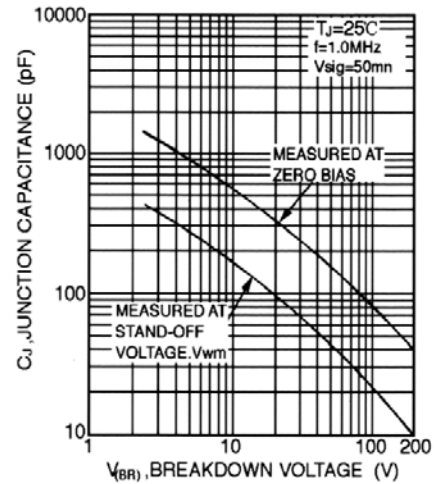
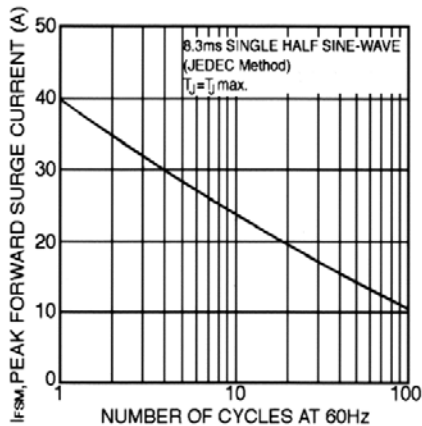


FIG. 5 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT





SMAJ5.0A THRU SMAJ440A

Surface Mount Transient Voltage Suppressors Diodes

Ordering Information

Part No.	Package	Packing Code	Packing
SMAJ5.0A THRU SMAJ440A	DO-214AC (SMA)	R50	5000pcs/Reel

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