

Description

The SMAJ Series are transient voltage suppressor designed to protect sensitive electronic equipment from damage induced by lightning and voltage transients.

Features

- 400W Peak Pulse Power (10/1000µs)
- Fast Response Time: <1ns
- Unidirectional Configuration.
- Low Profile Package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ±30kV
 - Contact discharge: ±30kV
- RoHS Compliant

Mechanical Characteristics

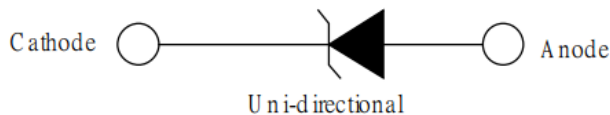
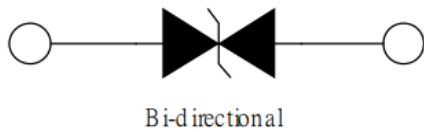
- Package: DO-214AC
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Telecom
- Computer
- Industrial
- Consumer Electronics

Ordering Information

Device Schematic



Part Number	Packaging	Reel Size
SMAJxx (C) A	5000/Tape & Reel	13 inch

Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
Peak pulse power dissipation	with a 10/1000 µs waveform	P _{PPM}	400	W
Peak pulse current	with a 10/1000 µs waveform	I _{PPM}	See next table	A
Power dissipation @T _A =50°C		P _D ⁽¹⁾	3.4	W
Operating junction and storage temperature range		T _j , T _{stg}	-55 to +150	°C

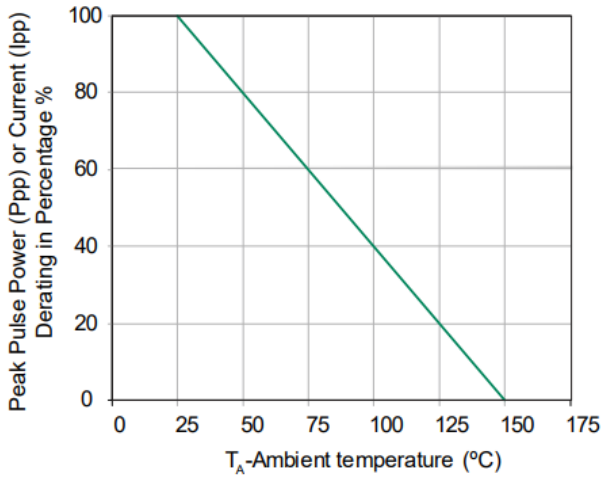
Notes:

1. Power dissipation mounted on minimum recommended pad layout

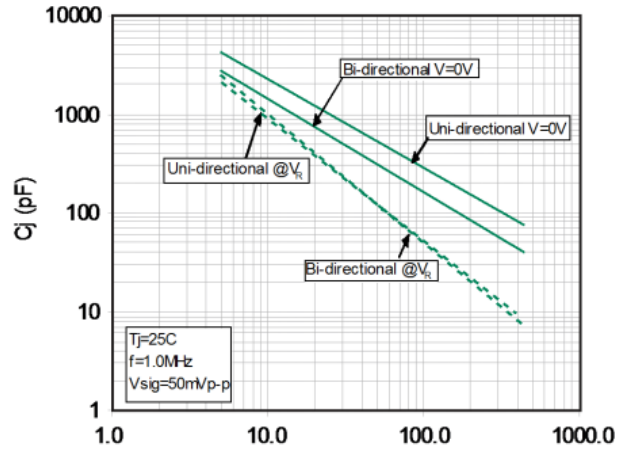
Electrical Characteristics (TA=25°C unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Marking				Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC@ Ipp (V)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR@VR (µA)
		UNI	BI				MIN	MAX				
SMAJ5.0A	SMAJ5.0CA	SMAJ5.0A	AE	SMAJ5.0CA	WE	5	6.4	7	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	SMAJ6.0A	AG	SMAJ6.0CA	WG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	SMAJ6.5A	AK	SMAJ6.5CA	WK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	SMAJ7.0CA	SMAJ7.0A	AM	SMAJ7.0CA	WM	7	7.78	8.6	10	12	33.3	200
SMAJ7.5A	SMAJ7.5CA	SMAJ7.5A	AP	SMAJ7.5CA	WP	7.5	8.33	9.21	1	12.9	31	100
SMAJ8.0A	SMAJ8.0CA	SMAJ8.0A	AR	SMAJ8.0CA	WR	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	SMAJ8.5CA	SMAJ8.5A	AT	SMAJ8.5CA	WT	8.5	9.44	10.4	1	14.4	27.8	20
SMAJ9.0A	SMAJ9.0CA	SMAJ9.0A	AV	SMAJ9.0CA	VV	9	10	11.1	1	15.4	26	10
SMAJ10A	SMAJ10CA	SMAJ10A	AX	SMAJ10CA	WX	10	11.1	12.3	1	17	23.5	5
SMAJ11A	SMAJ11CA	SMAJ11A	AZ	SMAJ11CA	WZ	11	12.2	13.5	1	18.2	22	1
SMAJ12A	SMAJ12CA	SMAJ12A	BE	SMAJ12CA	XE	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	SMAJ13A	BG	SMAJ13CA	XG	13	14.4	15.9	1	21.5	18.6	1
SMAJ14A	SMAJ14CA	SMAJ14A	BK	SMAJ14CA	XK	14	15.6	17.2	1	23.2	17.2	1
SMAJ15A	SMAJ15CA	SMAJ15A	BM	SMAJ15CA	XM	15	16.7	18.5	1	24.4	16.4	1
SMAJ16A	SMAJ16CA	SMAJ16A	BP	SMAJ16CA	XP	16	17.8	19.7	1	26	15.4	1
SMAJ17A	SMAJ17CA	SMAJ17A	BR	SMAJ17CA	XR	17	18.9	20.9	1	27.6	14.5	1
SMAJ18A	SMAJ18CA	SMAJ18A	BT	SMAJ18CA	XT	18	20	22.1	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	SMAJ20A	BV	SMAJ20CA	XV	20	22.2	24.5	1	32.4	12.3	1
SMAJ22A	SMAJ22CA	SMAJ22A	BX	SMAJ22CA	XX	22	24.4	26.9	1	35.5	11.3	1
SMAJ24A	SMAJ24CA	SMAJ24A	BZ	SMAJ24CA	XZ	24	26.7	29.5	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	SMAJ26A	CE	SMAJ26CA	YE	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A	SMAJ28CA	SMAJ28A	CG	SMAJ28CA	YG	28	31.1	34.4	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	SMAJ30A	CK	SMAJ30CA	YK	30	33.3	36.8	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	SMAJ33A	CM	SMAJ33CA	YM	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A	SMAJ36CA	SMAJ36A	CP	SMAJ36CA	YP	36	40	44.2	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	SMAJ40A	CR	SMAJ40CA	YR	40	44.4	49.1	1	64.5	6.2	1
SMAJ43A	SMAJ43CA	SMAJ43A	CT	SMAJ43CA	YT	43	47.8	52.8	1	69.4	5.8	1
SMAJ45A	SMAJ45CA	SMAJ45A	CV	SMAJ45CA	YV	45	50	55.3	1	72.7	5.5	1
SMAJ48A	SMAJ48CA	SMAJ48A	CX	SMAJ48CA	YX	48	53.3	58.9	1	77.4	5.2	1
SMAJ51A	SMAJ51CA	SMAJ51A	CZ	SMAJ51CA	YZ	51	56.7	62.7	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	SMAJ54A	RE	SMAJ54CA	ZE	54	60	66.3	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	SMAJ58A	RG	SMAJ58CA	ZG	58	64.4	71.2	1	93.6	4.3	1
SMAJ60A	SMAJ60CA	SMAJ60A	RK	SMAJ60CA	ZK	60	66.7	73.7	1	96.8	4.1	1
SMAJ64A	SMAJ64CA	SMAJ64A	RM	SMAJ64CA	ZM	64	71.1	78.6	1	103	3.9	1
SMAJ70A	SMAJ70CA	SMAJ70A	RP	SMAJ70CA	ZP	70	77.8	86	1	113	3.5	1
SMAJ75A	SMAJ75CA	SMAJ75A	RR	SMAJ75CA	ZR	75	83.3	92.1	1	121	3.3	1
SMAJ78A	SMAJ78CA	SMAJ78A	RT	SMAJ78CA	ZT	78	86.7	95.8	1	126	3.2	1
SMAJ85A	SMAJ85CA	SMAJ85A	RV	SMAJ85CA	ZV	85	94.4	104	1	137	2.9	1
SMAJ90A	SMAJ90CA	SMAJ90A	RX	SMAJ90CA	ZX	90	100	111	1	146	2.7	1
SMAJ100A	SMAJ100CA	SMAJ100A	RZ	SMAJ100CA	ZZ	100	111	123	1	162	2.5	1
SMAJ110A	SMAJ110CA	SMAJ110A	SE	SMAJ110CA	VE	110	122	135	1	177	2.3	1
SMAJ120A	SMAJ120CA	SMAJ120A	SG	SMAJ120CA	VG	120	133	147	1	193	2.1	1
SMAJ130A	SMAJ130CA	SMAJ130A	SK	SMAJ130CA	VK	130	144	159	1	209	1.9	1
SMAJ150A	SMAJ150CA	SMAJ150A	SM	SMAJ150CA	VM	150	167	185	1	243	1.6	1
SMAJ160A	SMAJ160CA	SMAJ160A	SP	SMAJ160CA	VP	160	178	197	1	259	1.5	1
SMAJ170A	SMAJ170CA	SMAJ170A	SR	SMAJ170CA	VR	170	189	209	1	275	1.5	1
SMAJ180A	SMAJ180CA	SMAJ180A	ST	SMAJ180CA	VT	180	201	222	1	292	1.4	1
SMAJ200A	SMAJ200CA	SMAJ200A	SV	SMAJ200CA	VV	200	224	247	1	324	1.2	1
SMAJ220A	SMAJ220CA	SMAJ220A	SX	SMAJ220CA	VX	220	246	272	1	356	1.1	1
SMAJ250A	SMAJ250CA	SMAJ250A	SZ	SMAJ250CA	VZ	250	279	309	1	405	1	1
SMAJ300A	SMAJ300CA	SMAJ300A	TE	SMAJ300CA	UE	300	335	371	1	486	0.8	1
SMAJ350A	SMAJ350CA	SMAJ350A	TG	SMAJ350CA	UG	350	391	432	1	567	0.7	1
SMAJ400A	SMAJ400CA	SMAJ400A	TK	SMAJ400CA	UK	400	447	494	1	648	0.6	1
SMAJ440A	SMAJ440CA	SMAJ440A	TM	SMAJ440CA	UM	440	492	543	1	713	0.6	1

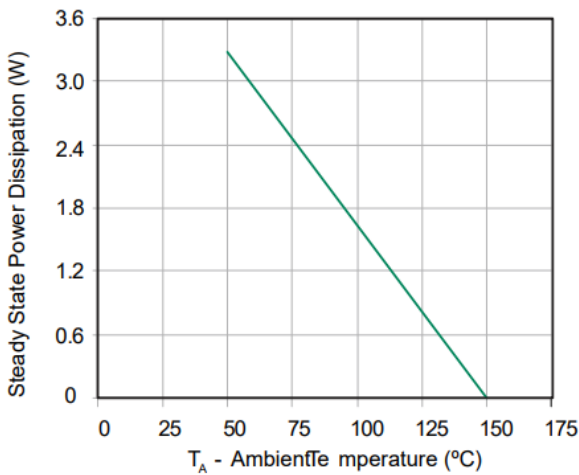
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



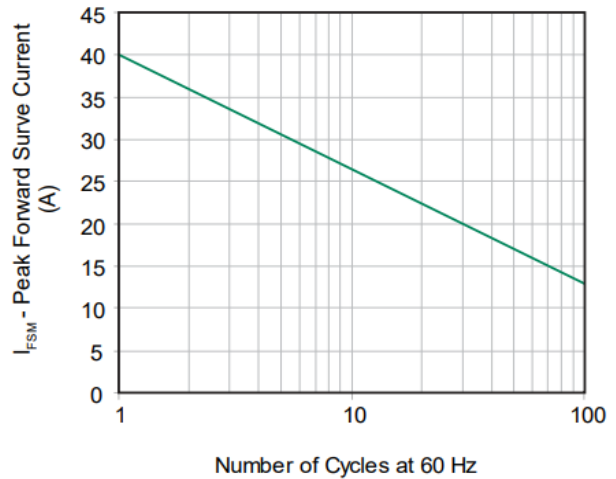
Pulse Derating Curve



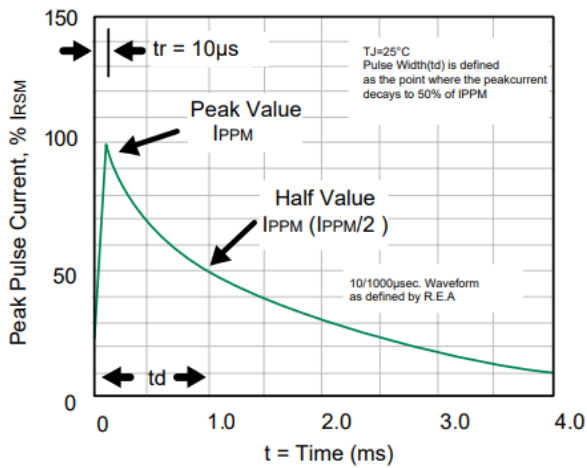
Typical Junction Capacitance



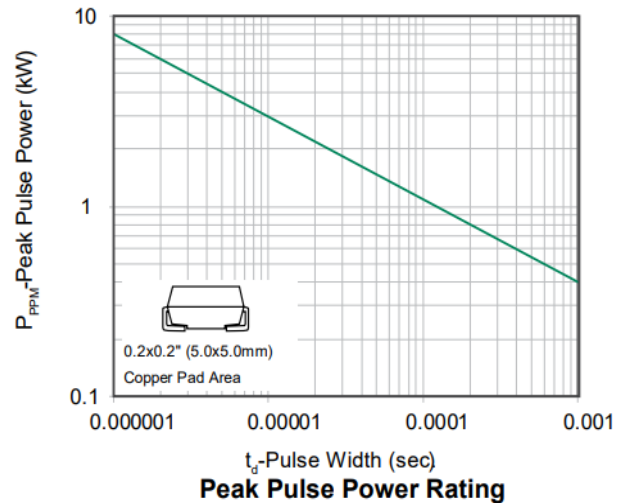
Steady State Power Dissipation Derating Curve



Peak Forward Surge Current

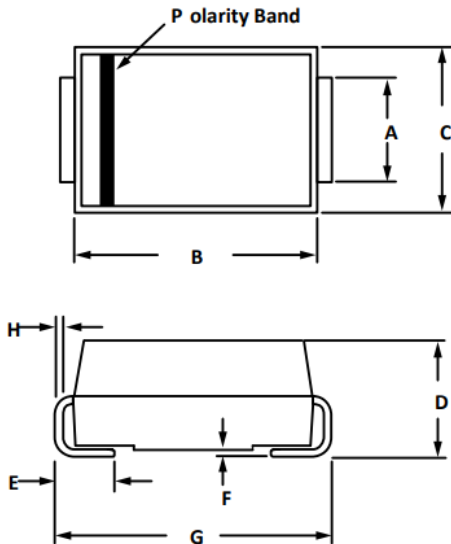


Pulse Waveform



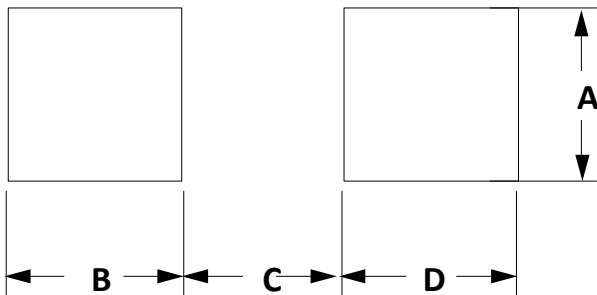
Peak Pulse Power Rating

DO-214AC Package Outline Drawing



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.049	0.065	1.250	1.650
B	0.157	0.177	3.990	4.500
C	0.100	0.110	2.540	2.790
D	0.078	0.090	1.980	2.290
E	0.030	0.060	0.780	1.520
F	-	0.008	-	0.203
G	0.194	0.208	4.930	5.280
H	0.006	0.012	0.152	0.305

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	1.80	0.070
B	2.10	0.082
C	2.30	0.090
D	2.10	0.082

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