Description

The SMBJxx(C)A is transient voltage suppressor designed to protect sensitive electronic equipment from damage induced by lightning and voltage transients.

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Features

- 600W Peak Pulse Power (10/1000μs)
- Fast Response Time: <1ns
- Unidirectional or Bidirectional Configuration.
- Low Profile Package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
- RoHS Compliant

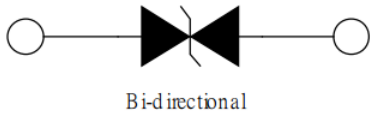
Mechanical Characteristics

- Package: DO-214AA
- Molding compound meets UL 94 V-0 flammability rating
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

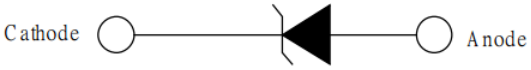
Applications

- Telecom
- Computer
- Industrial
- Consumer Electronics

Device Schematic



Bi-directional



Uni-directional

Ordering Information

Part Number	Packaging	Reel Size
SMBJxx(C)A	3000/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}	600	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)	5.0	W
Operating junction and storage temperature range		Tj, Tstg	-55 to +150	˚C

Notes:

1.Power dissipation mounted on minimum recommended pad layout

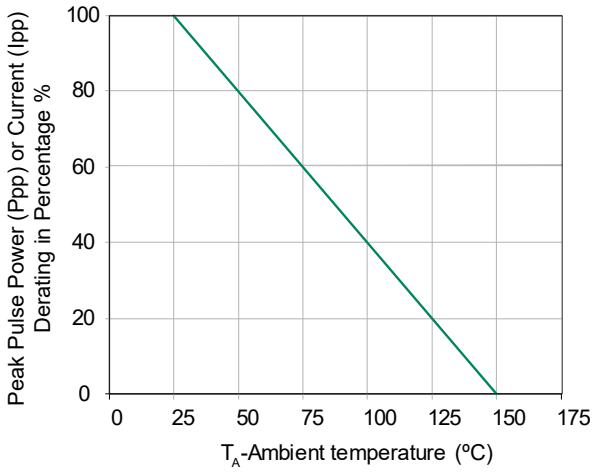
Electrical Characteristics (T_A=25°C unless otherwise specified)

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				
SMBJ5.0A	SMBJ5.0CA	SMBJ5.0A	KE	SMBJ5.0CA	AE	5	6.4	7	10	10.3	58.3	800
SMBJ6.0A	SMBJ6.0CA	SMBJ6.0A	KG	SMBJ6.0CA	AG	6	6.67	7.37	10	10.3	58.3	800
SMBJ6.5A	SMBJ6.5CA	SMBJ6.5A	KK	SMBJ6.5CA	AK	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0A	SMBJ7.0CA	SMBJ7.0A	KM	SMBJ7.0CA	AM	7	7.78	8.60	10	12	50	200
SMBJ7.5A	SMBJ7.5CA	SMBJ7.5A	KP	SMBJ7.5CA	AP	7.5	8.33	9.21	1	12.9	46.6	100
SMBJ8.0A	SMBJ8.0CA	SMBJ8.0A	KR	SMBJ8.0CA	AR	8	8.89	9.83	1	13.6	44.2	50
SMBJ8.5A	SMBJ8.5CA	SMBJ8.5A	KT	SMBJ8.5CA	AT	8.5	9.44	10.4	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	SMBJ9.0A	KV	SMBJ9.0CA	AV	9	10	11.1	1	15.4	39	10
SMBJ10A	SMBJ10CA	SMBJ10A	KX	SMBJ10CA	AX	10	11.1	12.3	1	17	35.3	5
SMBJ11A	SMBJ11CA	SMBJ11A	KZ	SMBJ11CA	AZ	11	12.2	13.5	1	18.2	33	1
SMBJ12A	SMBJ12CA	SMBJ12A	LE	SMBJ12CA	BE	12	13.3	14.7	1	19.9	30.2	1
SMBJ13A	SMBJ13CA	SMBJ13A	LG	SMBJ13CA	BG	13	14.4	15.9	1	21.5	28	1
SMBJ14A	SMBJ14CA	SMBJ14A	LK	SMBJ14CA	BK	14	15.6	17.2	1	23.2	25.9	1
SMBJ15A	SMBJ15CA	SMBJ15A	LM	SMBJ15CA	BM	15	16.7	18.5	1	24.4	24.6	1
SMBJ16A	SMBJ16CA	SMBJ16A	LP	SMBJ16CA	BP	16	17.8	19.7	1	26	23.1	1
SMBJ17A	SMBJ17CA	SMBJ17A	LR	SMBJ17CA	BR	17	18.9	20.9	1	27.6	21.8	1
SMBJ18A	SMBJ18CA	SMBJ18A	LT	SMBJ18CA	BT	18	20	22.1	1	29.2	20.6	1
SMBJ20A	SMBJ20CA	SMBJ20A	LV	SMBJ20CA	BV	20	22.2	24.5	1	32.4	18.6	1
SMBJ22A	SMBJ22CA	SMBJ22A	LX	SMBJ22CA	BX	22	24.4	26.9	1	35.5	16.9	1

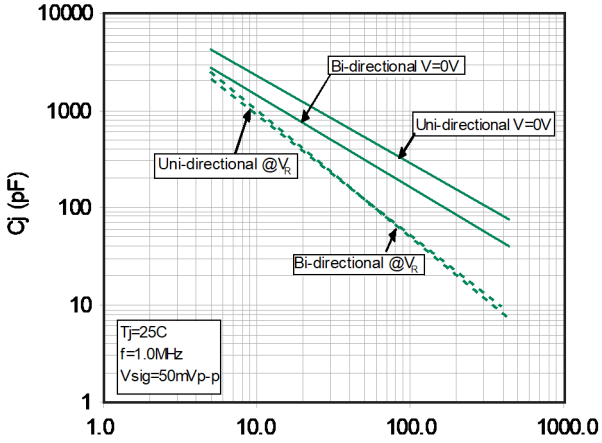
Part Number (Uni)	Part Number (Bi)	Marking				Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR @ VR (μA)
		UNI		BI			MIN	MAX				
SMBJ24A	SMBJ24CA	SMBJ24A	LZ	SMBJ24CA	BZ	24	26.7	29.5	1	38.9	15.5	1
SMBJ26A	SMBJ26CA	SMBJ26A	ME	SMBJ26CA	CE	26	28.9	31.9	1	42.1	14.3	1
SMBJ28A	SMBJ28CA	SMBJ28A	MG	SMBJ28CA	CG	28	31.1	34.4	1	45.4	13.3	1
SMBJ30A	SMBJ30CA	SMBJ30A	MK	SMBJ30CA	CK	30	33.6	36.8	1	48.4	12.4	1
SMBJ33A	SMBJ33CA	SMBJ33A	MM	SMBJ33CA	CM	33	36.7	40.6	1	53.3	13.3	1
SMBJ36A	SMBJ36CA	SMBJ36A	MP	SMBJ36CA	CP	36	40	44.2	1	58.1	10.4	1
SMBJ40A	SMBJ40CA	SMBJ40A	MR	SMBJ40CA	CR	40	44.4	49.1	1	64.5	9.3	1
SMBJ43A	SMBJ43CA	SMBJ43A	MT	SMBJ43CA	CT	43	47.8	52.8	1	69.4	8.7	1
SMBJ45A	SMBJ45CA	SMBJ45A	MV	SMBJ45CA	CV	45	50	55.3	1	72.7	8.3	1
SMBJ48A	SMBJ48CA	SMBJ48A	MX	SMBJ48CA	CX	48	53.3	58.9	1	77.4	7.8	1
SMBJ51A	SMBJ51CA	SMBJ51A	MZ	SMBJ51CA	CZ	51	56.7	62.7	1	82.4	7.3	1
SMBJ54A	SMBJ54CA	SMBJ54A	NE	SMBJ54CA	DE	54	60	66.3	1	87.1	6.9	1
SMBJ58A	SMBJ58CA	SMBJ58A	NG	SMBJ58CA	DG	58	64.4	71.2	1	93.6	6.5	1
SMBJ60A	SMBJ60CA	SMBJ60A	NK	SMBJ60CA	DK	60	66.7	73.7	1	96.8	6.2	1
SMBJ64A	SMBJ64CA	SMBJ64A	NM	SMBJ64CA	DM	64	71.1	78.6	1	103	5.9	1
SMBJ70A	SMBJ70CA	SMBJ70A	NP	SMBJ70CA	DP	70	77.8	86	1	113	5.3	1
SMBJ75A	SMBJ75CA	SMBJ75A	NR	SMBJ75CA	DR	75	83.3	92.1	1	121	5	1
SMBJ78A	SMBJ78CA	SMBJ78A	NT	SMBJ78CA	DT	78	86.7	95.8	1	126	4.8	1
SMBJ85A	SMBJ85CA	SMBJ85A	NV	SMBJ85CA	DV	85	94.4	104	1	137	4.4	1
SMBJ90A	SMBJ90CA	SMBJ90A	NX	SMBJ90CA	DX	90	100	110	1	146	4.1	1

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				
SMBJ100A	SMBJ100CA	SMBJ100A	NZ	SMBJ100CA	DZ	100	111	123	1	162	3.7	1
SMBJ110A	SMBJ110CA	SMBJ110A	PE	SMBJ110CA	EE	110	122	135	1	177	3.4	1
SMBJ120A	SMBJ120CA	SMBJ120A	PG	SMBJ120CA	EG	120	133	147	1	193	3.1	1
SMBJ130A	SMBJ130CA	SMBJ130A	PK	SMBJ130CA	EK	130	144	159	1	209	2.9	1
SMBJ150A	SMBJ150CA	SMBJ150A	PM	SMBJ150CA	EM	150	167	185	1	243	2.5	1
SMBJ160A	SMBJ160CA	SMBJ160A	PP	SMBJ160CA	EP	160	178	197	1	259	2.3	1
SMBJ170A	SMBJ170CA	SMBJ170A	PR	SMBJ170CA	ER	170	189	209	1	275	2.2	1
SMBJ180A	SMBJ180CA	SMBJ180A	PT	SMBJ180CA	ET	180	201	222	1	292	2.1	1
SMBJ200A	SMBJ200CA	SMBJ200A	PV	SMBJ200CA	EV	200	224	247	1	324	1.9	1
SMBJ220A	SMBJ220CA	SMBJ220A	PX	SMBJ220CA	EX	220	246	272	1	356	1.7	1
SMBJ250A	SMBJ250CA	SMBJ250A	PZ	SMBJ250CA	EZ	250	279	309	1	405	1.5	1
SMBJ300A	SMBJ300CA	SMBJ300A	QE	SMBJ300CA	FE	300	335	371	1	486	1.3	1
SMBJ350A	SMBJ350CA	SMBJ350A	QG	SMBJ350CA	FG	350	391	432	1	567	1.1	1
SMBJ400A	SMBJ400CA	SMBJ400A	QK	SMBJ400CA	FK	400	447	494	1	648	0.9	1
SMBJ440A	SMBJ440CA	SMBJ440A	QM	SMBJ440CA	FM	440	492	543	1	713	0.9	1

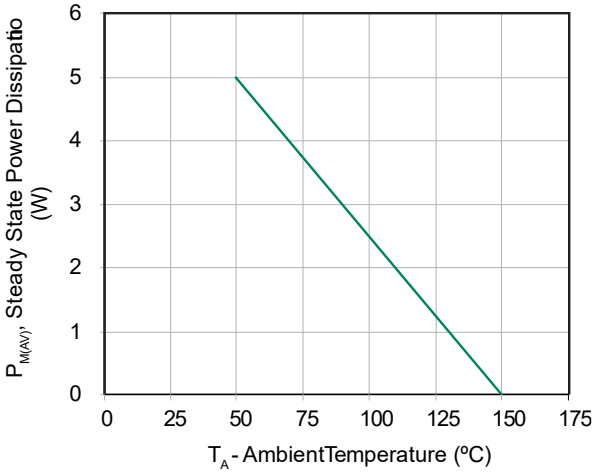
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



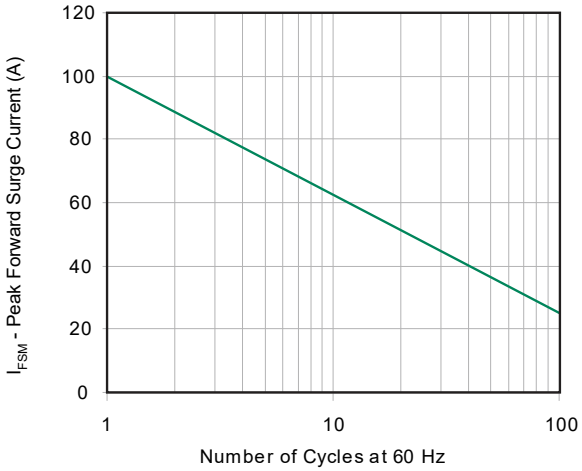
Pulse Derating Curve



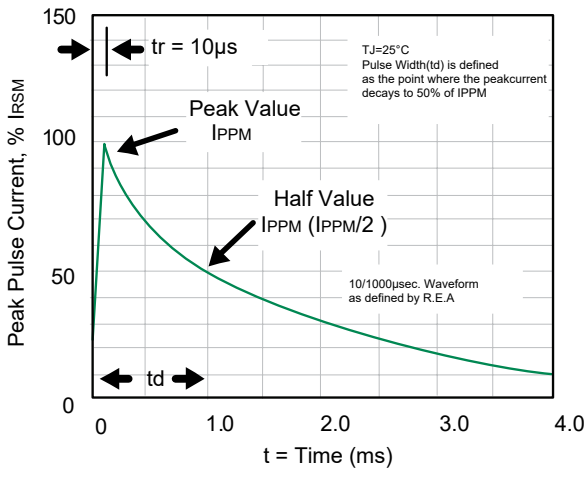
Typical Junction Capacitance



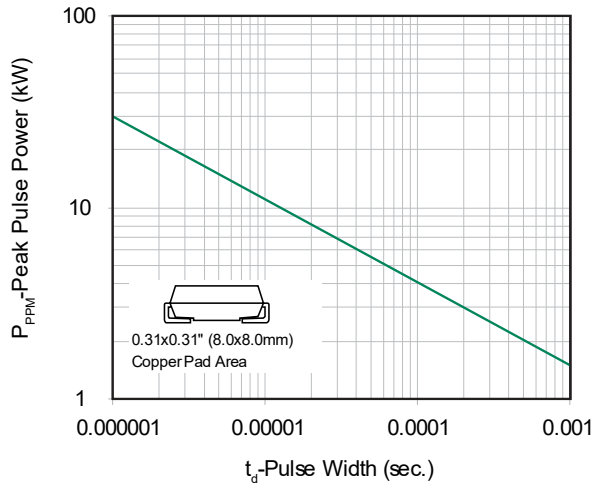
Steady State Power Dissipation Derating Curve



Peak Forward Surge Current

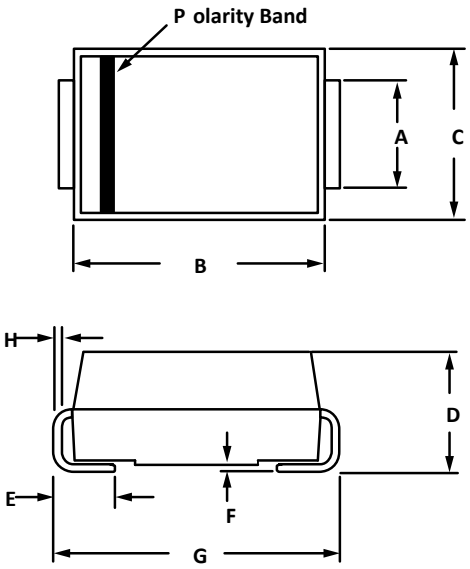


Pulse Waveform



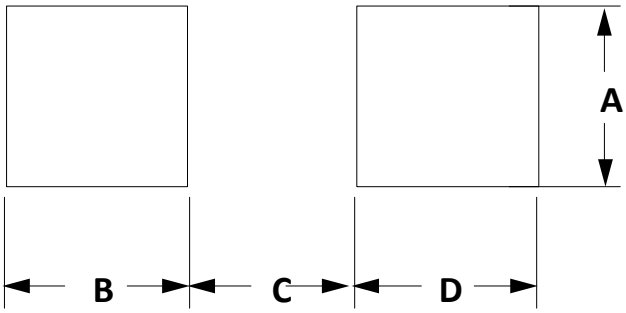
Peak Pulse Power Rating

DO-214AA Package Outline Drawing



OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.96	2.21	0.077	0.087
B	4.06	4.57	0.160	0.180
C	3.30	3.94	0.130	0.155
D	2.00	2.50	0.079	0.098
E	0.76	1.52	0.030	0.060
F	0.10	0.20	0.004	0.008
G	5.08	5.59	0.200	0.220
H	0.15	031	0.006	0.012

Suggested Land Pattern



PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.15	-	0.084	-
B	1.45	-	0.057	-
C	-	2.55	-	0.100
D	1.45	-	0.057	-

Contact Information

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