SMCJ SERIES

TRANSIENT VOLTAGE SUPPRESSORS

产品规格确认书

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TRANSIENT VOLTAGE SUPPRESSORS

康 比 電 子
HORNBY ELECTRONIC

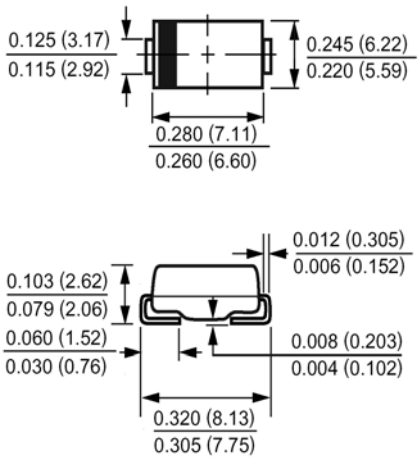
STAND OFF VOLTAGE: **5.0 to 188 VOLTS**

PEAK PULSE POWER: **1500 WATTS**

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 1500W peak pulse power capability on 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Low profile package with built-in strain relief for surface mounted applications

DO-214AB(SMC)



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic, DO-214AB(SMC)

Terminals: Axial leads, solderable per MIL-STD-750, method 2026 guaranteed

Polarity: Color band denotes cathode except bipolar

Packaging: 16mm tape per EIA STD RS-481

Weight: 0.007 ounce, 0.21 gram

Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

	Symbols	Limit	Units
Peak power dissipation with a 10/1000μs waveform (Note 1 , 2)	P_{PPM}	Minimum 1500	**Watts**
Peak pulse current with a 10/1000μs waveform (Note 1)	I_{PPM}	See Next Table	**Amp**
Peak forward surge current, 8.3ms single half sine-wave unidirectional only (Note 2)	I_{FSM}	200	**Amp**
Maximum instantaneous forward voltage at 100A for unidirectional only	V_F	3.5	**Volts**
Typical thermal resistance junction-to-lead	$R_{\theta JL}$	15	**℃/W**
Thermal resistance junction to ambient air (Note 3)	$R_{\theta JA}$	75	**℃/W**
Operating junction and storage temperature range	T_J，Tstg	–55 to +150	**℃**

NOTES:

1- Non-repetitive current pulse, per Fig.3 and derated above TA = 25℃ per Fig. 2

2- Mounted on 0.31 x 0.31” (8.0 x 8.0mm) copper pads to each terminal

3- Mounted on minimum recommended pad layout

Devices for Bidirectional Applications:

1- For bi-directional, use C or CA suffix for types SMCJ5.0 thru types SMCJ188A(e.g. SMCJ5.0C, SMCJ188CA).

2- Electrical characteristics apply in both directions.

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Device Type	Breakdown Voltage		Test Current	Reverse Stand off Voltage	Maximum Reverse Leakage at V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage at I_{PPM}
	V_{BR} at I_T (Note 1)		I_T	V_{WM}	I_D (Note 3)	I_{PPM} (Note 2)	V_C
	Volts (min.)	Volts (max.)	mAmps	Volts	uAmps	Amps	Volts
SMCJ5.0	6.40	7.30	10	5.0	1000	156.3	9.6
SMCJ5.0A(Note 4)	6.40	7.00	10	5.0	1000	163.0	9.2
SMCJ6.0	6.67	8.15	10	6.0	1000	131.6	11.4
SMCJ6.0A	6.67	7.37	10	6.0	1000	145.6	10.3
SMCJ6.5	7.22	8.82	10	6.5	500	122.0	12.3
SMCJ6.5A	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0	7.78	9.51	10	7.0	200	112.8	13.3
SMCJ7.0A	7.78	8.60	10	7.0	200	125.0	12.0
SMCJ7.5	8.33	10.2	1.0	7.5	100	104.9	14.3
SMCJ7.5A	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0	8.89	10.9	1.0	8.0	50	100.0	15.0
SMCJ8.0A	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5	9.44	11.5	1.0	8.5	20	94.3	15.9
SMCJ8.5A	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0	10.0	12.2	1.0	9.0	10	88.8	16.9
SMCJ9.0A	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10	11.1	13.6	1.0	10.0	5.0	79.8	18.8
SMCJ10A	11.1	12.3	1.0	10.0	5.0	88.2	17.0
SMCJ11	12.2	14.9	1.0	11.0	5.0	74.6	20.1
SMCJ11A	12.2	13.5	1.0	11.0	5.0	82.4	18.2
SMCJ12	13.3	16.3	1.0	12.0	5.0	68.2	22.0
SMCJ12A	13.3	14.7	1.0	12.0	5.0	75.4	19.9
SMCJ13	14.4	17.6	1.0	13.0	1.0	63.0	23.8
SMCJ13A	14.4	15.9	1.0	13.0	1.0	69.8	21.5
SMCJ14	15.6	19.1	1.0	14.0	1.0	58.1	25.8
SMCJ14A	15.6	17.2	1.0	14.0	1.0	64.7	23.2
SMCJ15	16.7	20.4	1.0	15.0	1.0	55.8	26.9
SMCJ15A	16.7	18.5	1.0	15.0	1.0	61.5	24.4
SMCJ16	17.8	21.8	1.0	16.0	1.0	52.1	28.8
SMCJ16A	17.8	19.7	1.0	16.0	1.0	57.7	26.0
SMCJ17	18.9	23.1	1.0	17.0	1.0	49.2	30.5
SMCJ17A	18.9	20.9	1.0	17.0	1.0	54.3	27.6
SMCJ18	20.0	24.4	1.0	18.0	1.0	46.6	32.2
SMCJ18A	20.0	22.1	1.0	18.0	1.0	51.4	29.2
SMCJ20	22.2	27.1	1.0	20.0	1.0	41.9	35.8
SMCJ20A	22.2	24.5	1.0	20.0	1.0	46.3	32.4
SMCJ22	24.4	29.8	1.0	22.0	1.0	38.1	39.4
SMCJ22A	24.4	26.9	1.0	22.0	1.0	42.3	35.5
SMCJ24	26.7	32.6	1.0	24.0	1.0	34.9	43.0
SMCJ24A	26.7	29.5	1.0	24.0	1.0	38.6	38.9
SMCJ26	28.9	35.3	1.0	26.0	1.0	32.2	46.6
SMCJ26A	28.9	31.9	1.0	26.0	1.0	35.6	42.1
SMCJ28	31.1	38.0	1.0	28.0	1.0	30.0	50.1
SMCJ28A	31.1	34.4	1.0	28.0	1.0	33.0	45.4
SMCJ30	33.3	40.7	1.0	30.0	1.0	28.0	53.5
SMCJ30A	33.3	36.8	1.0	30.0	1.0	31.0	48.4
SMCJ33	36.7	44.9	1.0	33.0	1.0	25.4	59.0
SMCJ33A	36.7	40.6	1.0	33.0	1.0	28.1	53.3
SMCJ36	40.0	48.9	1.0	36.0	1.0	23.3	64.3
SMCJ36A	40.0	44.2	1.0	36.0	1.0	25.8	58.1

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Device Type	Breakdown Voltage		Test Current	Reverse Stand off Voltage	Maximum Reverse Leakage at V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage at I_{PPM}
	V_{BR} at I_T (Note 1)		I_T	V_{WM}	I_D (Note 3)	I_{PPM} (Note 2)	V_C
	Volts (min.)	Volts (max.)	mAmps	Volts	uAmps	Amps	Volts
SMCJ40	44.4	54.3	1.0	40	1.0	21.0	71.4
SMCJ40A	44.4	49.1	1.0	40	1.0	23.3	64.5
SMCJ43	47.8	58.4	1.0	43	1.0	19.6	76.7
SMCJ43A	47.8	52.8	1.0	43	1.0	21.6	69.4
SMCJ45	50.0	61.1	1.0	45	1.0	18.7	80.3
SMCJ45A	50.0	55.3	1.0	45	1.0	20.6	72.7
SMCJ48	53.3	65.2	1.0	48	1.0	17.5	85.5
SMCJ48A	53.3	58.9	1.0	48	1.0	19.4	77.4
SMCJ51	56.7	69.3	1.0	51	1.0	16.5	91.1
SMCJ51A	56.7	62.7	1.0	51	1.0	18.2	82.4
SMCJ54	60.0	73.3	1.0	54	1.0	15.6	96.3
SMCJ54A	60.0	66.3	1.0	54	1.0	17.2	87.1
SMCJ58	64.4	78.7	1.0	58	1.0	14.6	103
SMCJ58A	64.4	71.2	1.0	58	1.0	16.0	93.6
SMCJ60	66.7	81.5	1.0	60	1.0	14.0	107
SMCJ60A	66.7	73.7	1.0	60	1.0	15.5	96.8
SMCJ64	71.1	86.9	1.0	64	1.0	13.2	114
SMCJ64A	71.1	78.6	1.0	64	1.0	14.6	103
SMCJ70	77.8	95.1	1.0	70	1.0	12.0	125
SMCJ70A	77.8	86.0	1.0	70	1.0	13.3	113
SMCJ75	83.3	102	1.0	75	1.0	11.2	134
SMCJ75A	83.3	92.1	1.0	75	1.0	12.4	121
SMCJ78	86.7	106	1.0	78	1.0	10.8	139
SMCJ78A	86.7	95.8	1.0	78	1.0	11.9	126
SMCJ85	94.4	115	1.0	85	1.0	9.9	151
SMCJ85A	94.4	104	1.0	85	1.0	10.9	137
SMCJ90	100	122	1.0	90	1.0	9.4	160
SMCJ90A	100	111	1.0	90	1.0	10.3	146
SMCJ100	111	136	1.0	100	1.0	8.4	179
SMCJ100A	111	123	1.0	100	1.0	9.3	162
SMCJ110	122	149	1.0	110	1.0	7.7	196
SMCJ110A	122	135	1.0	110	1.0	8.5	177
SMCJ120	133	163	1.0	120	1.0	7.0	214
SMCJ120A	133	147	1.0	120	1.0	7.8	193
SMCJ130	144	176	1.0	130	1.0	6.5	230
SMCJ130A	144	159	1.0	130	1.0	7.2	209
SMCJ150	167	204	1.0	150	1.0	5.6	268
SMCJ150A	167	185	1.0	150	1.0	6.2	243
SMCJ160	178	218	1.0	160	1.0	5.2	287
SMCJ160A	178	197	1.0	160	1.0	5.8	259
SMCJ170	189	231	1.0	170	1.0	4.9	304
SMCJ170A	189	209	1.0	170	1.0	5.5	275
SMCJ188	209	255	1.0	188	1.0	4.4	344
SMCJ188A	209	231	1.0	188	1.0	4.6	328

NOTES:

1- Pulse test: tp ⩽ 50ms

2- Surge current waveform per Fig. 3 and derated per Fig. 2

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

4- For the bidirectional SMCJ5.0CA, the maximum V_{BR} is 7.25V

5- All terms and symbols are consistent with ANSI/IEEE C62.35

RATINGS AND CHARACTERISTIC CURVES

Fig. 1 – Peak Pulse Power Rating Curve

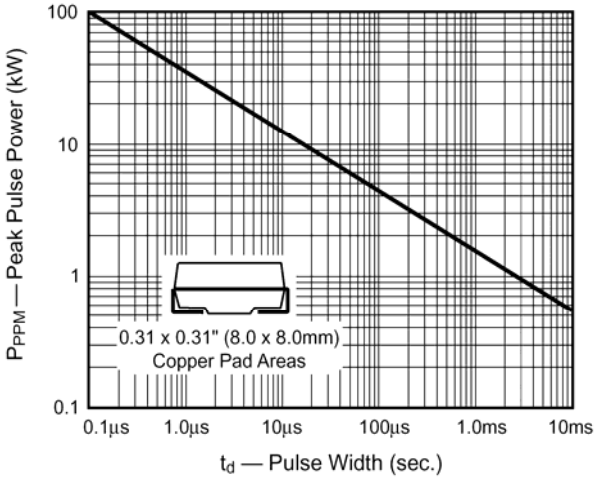

Fig. 2 – Pulse Derating Curve

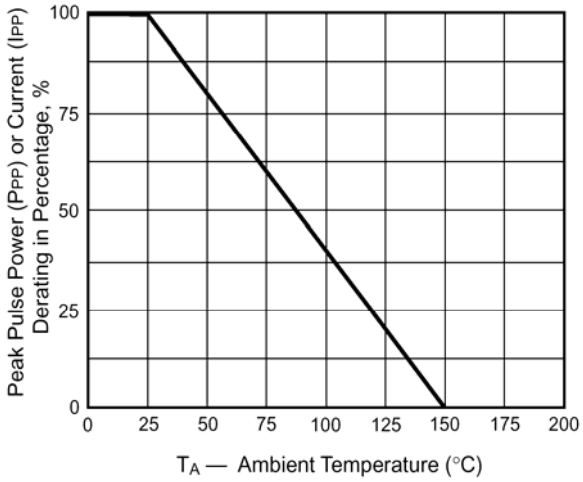

Fig. 3 – Pulse Waveform

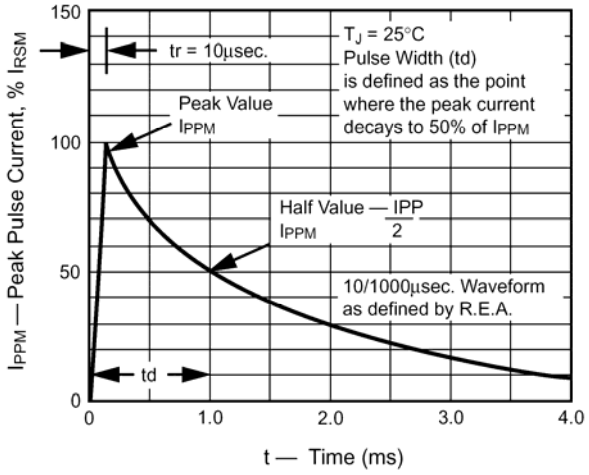

Fig. 4 – Typical Junction Capacitance Uni-Directional

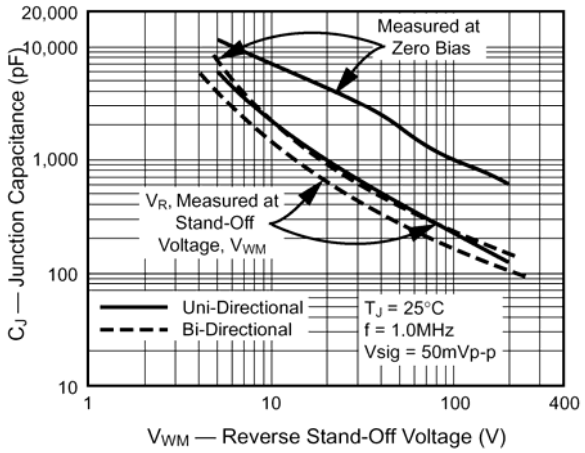

Fig. 5 – Typical Transient Thermal Impedance

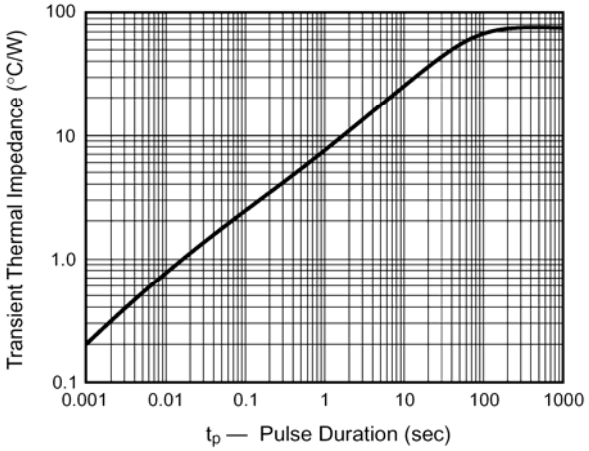

Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only