SMCJ SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

REVERSE VOLTAGE **- 5.0** to **440** Volts
POWER DISSIPATION **- 1500** Watts

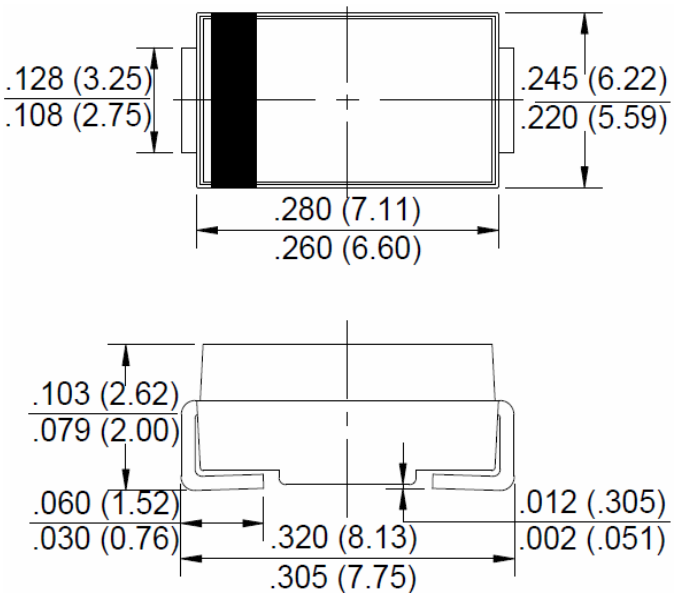
FEATURES

- Rating to 200V VBR
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL recognition 94V-0
- Typical IR less than 1μA above 10V
- Fast response time:typically less than 1.0ns for Uni-direction,less than 5.0ns fo Bi-direction,from 0 Volts to BV min

MECHANICAL DATA

- Case : Molded Plastic
- Polarity:by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- Weight : 0.007 ounces, 0.21 grams
- Marking : As part number

SMC



Dimensions in inches and(millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000μs waveform	P_{PPM}	1500	W
Peak pulse current with a waveform	I_{PPM}	See Next Table	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	I_{FSM}	200	A
Typical thermal resistance, junction to ambient (Note1)	$R_{\theta JA}$	75.0	℃/W
Typical thermal resistance, junction to lead(Note1)	$R_{\theta JL}$	15	℃/W
Operating Temperature Range	T_J	-55 to + 150	℃
Storage Temperature Range	T_{STG}	-55 to + 150	℃

NOTES:1. Mounted on P.C.B. with 0.32 x 0.32" (8.0 x 8.0mm) copper pad areas.

2.The typical data above is for reference only(典型值仅供参考).

RATING AND CHARACTERTIC CURVES
SMCJ SERIES

FIG.1-PULSE DERATING CURVE

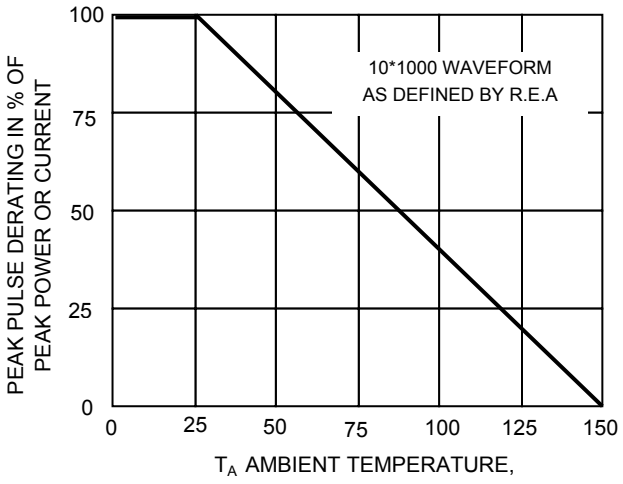


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

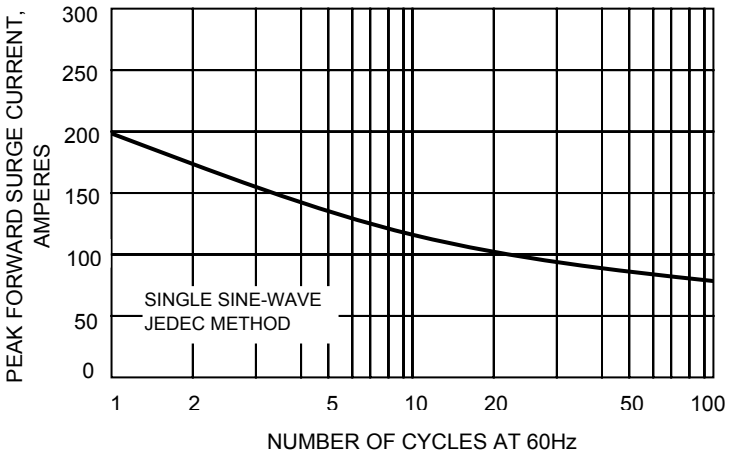


FIG.3-PULSE WAVEFORM

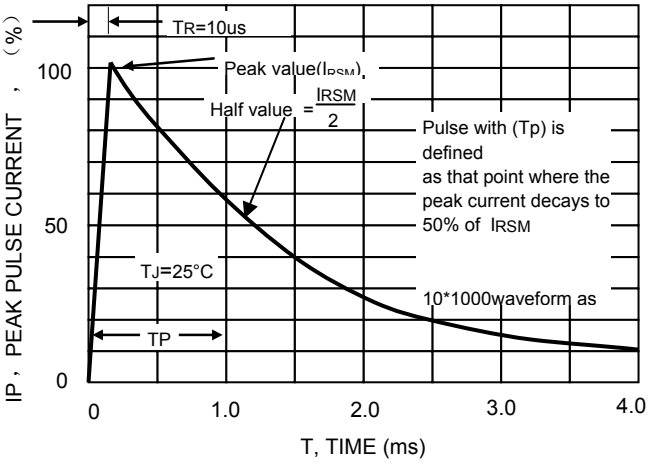


FIG.4-TYPICAL JUNCTION CAPACITANCE

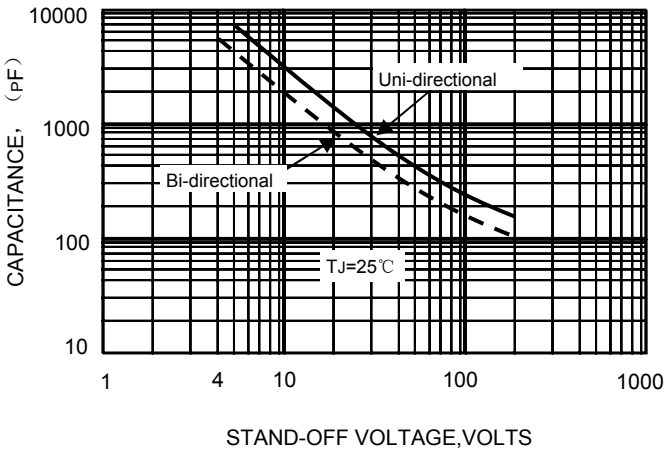


FIG.5-PULSE RATING CURVE

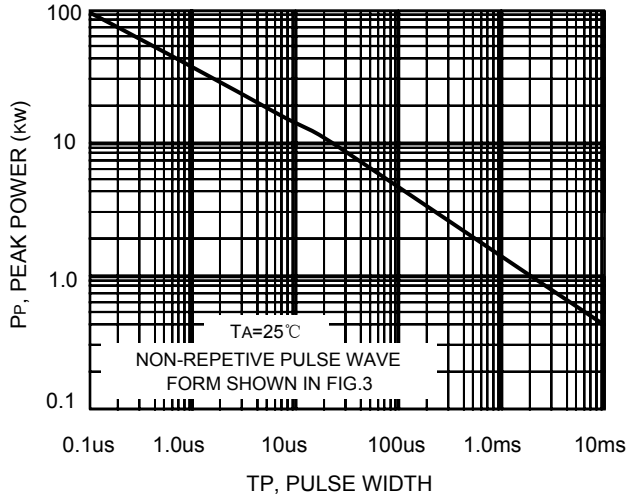
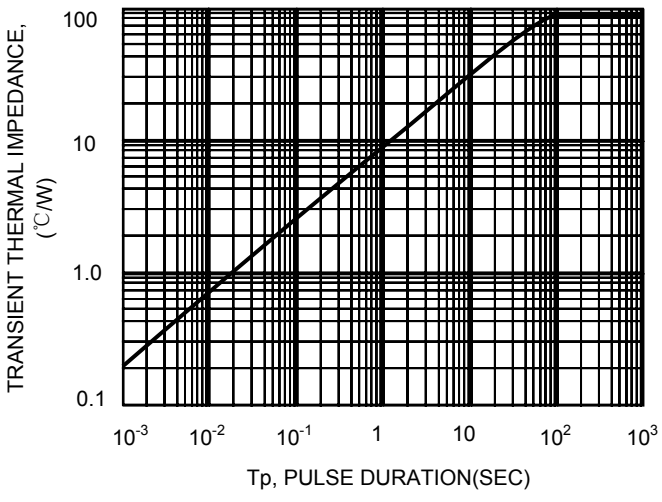


FIG.6-TYPICAL TANSIENT THERMAL IMPEDANCE



The cruve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!

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SMCJ SERIES

Device Type		Stand-off Voltage	Breakdown Voltage at I_T (Note1) VBR (V)		Test Current	Maximum Clamping Voltage at I_{PPM}	Maximum Peak Pulse Surge Current(Note2)	Maximum Reverse Leakage at V_{WM}
UNI	BI	V_{WM} (V)	Min(V)	Max(V)	@ I_T(mA)	V_C (V)	I_{PPM} (A)	I_D (μA)
SMCJ5.0	SMCJ5.0C	5.0	6.40	7.82	10	9.6	156.2	1000
SMCJ5.0A	SMCJ5.0CA	5.0	6.40	7.07	10	9.2	163.0	1000
SMCJ6.0	SMCJ6.0C	6.0	6.67	8.15	10	11.4	131.6	1000
SMCJ6.0A	SMCJ6.0CA	6.0	6.67	7.37	10	10.3	145.6	1000
SMCJ6.5	SMCJ6.5C	6.5	7.22	8.82	10	12.3	122.0	500
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	11.2	133.9	500
SMCJ7.0	SMCJ7.0C	7.0	7.78	9.51	10	13.3	112.8	200
SMCJ7.0A	SMCJ7.0CA	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5	SMCJ7.5C	7.5	8.33	10.20	1.0	14.3	104.9	100
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.21	1.0	12.9	116.3	100
SMCJ8.0	SMCJ8.0C	8.0	8.89	10.90	1.0	15.0	100.0	50
SMCJ8.0A	SMCJ8.0CA	8.0	8.89	9.83	1.0	13.6	110.3	50
SMCJ8.5	SMCJ8.5C	8.5	9.44	11.50	1.0	15.9	94.3	20
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.40	1.0	14.4	104.2	20
SMCJ9.0	SMCJ9.0C	9.0	10.00	12.20	1.0	16.9	88.8	10
SMCJ9.0A	SMCJ9.0CA	9.0	10.00	11.10	1.0	15.4	97.4	10
SMCJ10	SMCJ10C	10.0	11.10	13.60	1.0	18.8	79.8	5.0
SMCJ10A	SMCJ10CA	10.0	11.10	12.30	1.0	17.0	88.2	5.0
SMCJ11	SMCJ11C	11.0	12.20	14.90	1.0	20.1	74.6	5.0
SMCJ11A	SMCJ11CA	11.0	12.20	13.50	1.0	18.2	82.4	5.0
SMCJ12	SMCJ12C	12.0	13.30	16.30	1.0	22.0	68.2	5.0
SMCJ12A	SMCJ12CA	12.0	13.30	14.70	1.0	19.9	75.4	5.0
SMCJ13	SMCJ13C	13.0	14.40	17.60	1.0	23.8	63.0	1.0
SMCJ13A	SMCJ13CA	13.0	14.40	15.90	1.0	21.5	69.8	1.0
SMCJ14	SMCJ14C	14.0	15.60	19.10	1.0	25.8	58.1	1.0
SMCJ14A	SMCJ14CA	14.0	15.60	17.20	1.0	23.2	64.7	1.0
SMCJ15	SMCJ15C	15.0	16.70	20.40	1.0	26.9	55.8	1.0
SMCJ15A	SMCJ15CA	15.0	16.70	18.50	1.0	24.4	61.5	1.0
SMCJ16	SMCJ16C	16.0	17.80	21.80	1.0	28.8	52.1	1.0
SMCJ16A	SMCJ16CA	16.0	17.80	19.70	1.0	26.0	57.7	1.0
SMCJ17	SMCJ17C	17.0	18.90	23.10	1.0	30.5	49.2	1.0
SMCJ17A	SMCJ17CA	17.0	18.90	20.90	1.0	27.6	54.3	1.0
SMCJ18	SMCJ18C	18.0	20.00	24.40	1.0	32.2	46.6	1.0
SMCJ18A	SMCJ18CA	18.0	20.00	22.10	1.0	29.2	51.4	1.0
SMCJ20	SMCJ20C	20.0	22.20	27.10	1.0	35.8	41.9	1.0
SMCJ20A	SMCJ20CA	20.0	22.20	24.50	1.0	32.4	46.3	1.0
SMCJ22	SMCJ22C	22.0	24.40	29.80	1.0	39.4	38.1	1.0
SMCJ22A	SMCJ22CA	22.0	24.40	26.90	1.0	35.5	42.3	1.0
SMCJ24	SMCJ24C	24.0	26.70	32.60	1.0	43.0	34.9	1.0
SMCJ24A	SMCJ24CA	24.0	26.70	29.50	1.0	38.9	38.6	1.0
SMCJ26	SMCJ26C	26.0	28.90	35.30	1.0	46.6	32.2	1.0
SMCJ26A	SMCJ26CA	26.0	28.90	31.90	1.0	42.1	35.6	1.0
SMCJ28	SMCJ28C	28.0	31.10	38.00	1.0	50.0	30.0	1.0
SMCJ28A	SMCJ28CA	28.0	31.10	34.40	1.0	45.4	33.0	1.0
SMCJ30	SMCJ30C	30.0	33.30	40.70	1.0	53.5	28.0	1.0
SMCJ30A	SMCJ30CA	30.0	33.30	36.80	1.0	48.4	31.0	1.0
SMCJ33	SMCJ33C	33.0	36.70	44.90	1.0	59.0	25.4	1.0
SMCJ33A	SMCJ33CA	33.0	36.70	40.60	1.0	53.3	28.1	1.0
SMCJ36	SMCJ36C	36.0	40.0	48.9	1.0	64.3	23.3	1.0
SMCJ36A	SMCJ36CA	36.0	40.0	44.2	1.0	58.1	25.8	1.0
SMCJ40	SMCJ40C	40.0	44.4	54.3	1.0	71.4	21.0	1.0
SMCJ40A	SMCJ40CA	40.0	44.4	49.1	1.0	64.5	23.3	1.0
SMCJ43	SMCJ43C	43.0	47.8	58.4	1.0	76.7	19.6	1.0
SMCJ43A	SMCJ43CA	43.0	47.8	52.8	1.0	69.4	21.6	1.0

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UNI	BI	V_{WM} (V)	Min(V)	Max(V)	@ I_T(mA)	V_C (V)	I_{PPM} (A)	I_D (μA)
SMCJ45	SMCJ45C	45	50.0	61.1	1.0	80.3	18.7	1.0
SMCJ45A	SMCJ45CA	45	50.0	55.3	1.0	72.7	20.6	1.0
SMCJ48	SMCJ48C	48	53.3	65.1	1.0	85.5	17.5	1.0
SMCJ48A	SMCJ48CA	48	53.3	58.9	1.0	77.4	19.4	1.0
SMCJ51	SMCJ51C	51	56.7	69.3	1.0	91.1	16.5	1.0
SMCJ51A	SMCJ51CA	51	56.7	62.7	1.0	82.4	18.2	1.0
SMCJ54	SMCJ54C	54	60.0	73.3	1.0	96.3	15.6	1.0
SMCJ54A	SMCJ54CA	54	60.0	66.3	1.0	87.1	17.2	1.0
SMCJ58	SMCJ58C	58	64.4	78.7	1.0	103.0	14.6	1.0
SMCJ58A	SMCJ58CA	58	64.4	71.2	1.0	93.6	16.0	1.0
SMCJ60	SMCJ60C	60	66.7	81.5	1.0	107.0	14.0	1.0
SMCJ60A	SMCJ60CA	60	66.7	73.7	1.0	96.8	15.5	1.0
SMCJ64	SMCJ64C	64	71.1	86.9	1.0	114	13.2	1.0
SMCJ64A	SMCJ64CA	64	71.1	78.6	1.0	103	14.6	1.0
SMCJ70	SMCJ70C	70	77.8	95.1	1.0	125	12.0	1.0
SMCJ70A	SMCJ70CA	70	77.8	86.0	1.0	113	13.3	1.0
SMCJ75	SMCJ75C	75	83.3	102.0	1.0	134	11.2	1.0
SMCJ75A	SMCJ75CA	75	83.3	92.1	1.0	121	12.4	1.0
SMCJ78	SMCJ78C	78	86.7	106.0	1.0	139	10.8	1.0
SMCJ78A	SMCJ78CA	78	86.7	95.8	1.0	126	11.9	1.0
SMCJ85	SMCJ85C	85	94.4	115	1.0	151	9.9	1.0
SMCJ85A	SMCJ85CA	85	94.4	104	1.0	137	10.9	1.0
SMCJ90	SMCJ90C	90	100	122	1.0	160	9.4	1.0
SMCJ90A	SMCJ90CA	90	100	111	1.0	146	10.3	1.0
SMCJ100	SMCJ100C	100	111	136	1.0	179	8.4	1.0
SMCJ100A	SMCJ100CA	100	111	123	1.0	162	9.3	1.0
SMCJ110	SMCJ110C	110	122	149	1.0	196	7.7	1.0
SMCJ110A	SMCJ110CA	110	122	135	1.0	177	8.5	1.0
SMCJ120	SMCJ120C	120	133	163	1.0	214	7.0	1.0
SMCJ120A	SMCJ120CA	120	133	147	1.0	193	7.8	1.0
SMCJ130	SMCJ130C	130	144	176	1.0	231	6.5	1.0
SMCJ130A	SMCJ130CA	130	144	159	1.0	209	7.2	1.0
SMCJ150	SMCJ150C	150	167	204	1.0	268	5.6	1.0
SMCJ150A	SMCJ150CA	150	167	185	1.0	243	6.2	1.0
SMCJ160	SMCJ160C	160	178	218	1.0	287	5.2	1.0
SMCJ160A	SMCJ160CA	160	178	197	1.0	259	5.8	1.0
SMCJ170	SMCJ170C	170	189	231	1.0	304	4.9	1.0
SMCJ170A	SMCJ170CA	170	189	209	1.0	275	5.5	1.0
SMCJ188	SMCJ188C	188	209	255	1.0	344	4.4	1.0
SMCJ188A	SMCJ188CA	188	209	231	1.0	328	4.6	1.0
SMCJ200A	SMCJ200C	200	224	247	1.0	324	4.6	1.0
SMCJ220A	SMCJ200CA	220	246	272	1.0	356	4.2	1.0
SMCJ250A	SMCJ250CA	250	279	309	1.0	405	3.7	1.0
SMCJ300A	SMCJ300CA	300	335	371	1.0	486	3.1	1.0
SMCJ350A	SMCJ350CA	350	391	432	1.0	567	2.6	1.0
SMCJ400A	SMCJ400CA	400	447	494	1.0	648	2.3	1.0
SMCJ440A	SMCJ440CA	440	492	543	1.0	713	2.1	1.0

Note:1.Pulse test : Tp ≦ 50ms.

2.Surge current waveform Per Fig. 3 and derate Per Fig. 1.

3.For bi-directional types with VWM of 10 V and less, the ID limit is doubled

4.VF = 3.5 V at IF = 25 A (uni-directional only)

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