



FEATURES

- * For surface mount application
- * Built-in strain relief
- * Excellent clamping capability
- * Low profile package
- * Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- * Typical I_R less than $1\mu A$ above 10V
- * High temperature soldering guaranteed: $260^\circ C$ / 10 seconds at terminals

MECHANICAL DATA

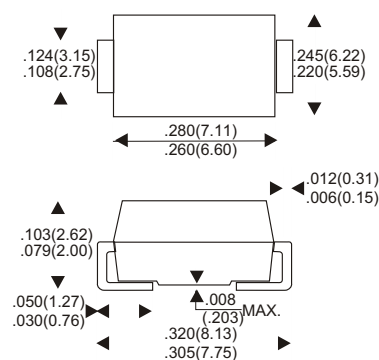
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Lead: Solderable per MIL-STD-202, method 208 guaranteed
- * Polarity: Color band denotes cathode end except Bidirectional
- * Mounting position: Any
- * Weight: 0.21 grams

VOLTAGE RANGE

5.0 to 188 Volts

1500 Watts Peak Power

DO-214AB



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating $25^\circ C$ ambient temperature unless otherwise specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ C$, $T_P=1ms$ (NOTE 1)	P_{PK}	Minimum 1500	Watts
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	F_{SM}	100	Amps
Maximum Instantaneous Forward Voltage at 35.0A for Unidirectional only	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above $T_A=25^\circ C$ per Fig. 2.
2. Mounted on Copper Pad area of $8.0mm^2$ (.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMCJ5.0 thru SMCJ170.
2. Electrical characteristics apply in both directions.

ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

DEVICE TYPE	Breakdown Voltage @ $I_T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ I_{PPM}
	V_{BR} (V)		I_T	V_{WM}	I_R	I_{PPM}	V_C
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)
SMCJ5.0A(CA)	6.40	7.07	10	5.0	1000	163.0	9.2
SMCJ6.0A(CA)	6.67	7.37	10	6.0	1000	145.6	10.3
SMCJ6.5A(CA)	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0A(CA)	7.78	8.6	10	7.0	200	125.0	12.0
SMCJ7.5A(CA)	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0A(CA)	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5A(CA)	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0A(CA)	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10A(CA)	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11A(CA)	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12A(CA)	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13A(CA)	14.4	15.9	1.0	13	5.0	69.8	21.5
SMCJ14A(CA)	15.6	17.2	1.0	14	5.0	64.7	23.2
SMCJ15A(CA)	16.7	18.5	1.0	15	5.0	61.5	24.4
SMCJ16A(CA)	17.8	19.7	1.0	16	5.0	57.7	26.0
SMCJ17A(CA)	18.9	20.9	1.0	17	5.0	54.3	27.6
SMCJ18A(CA)	20.0	22.1	1.0	18	5.0	51.4	29.2
SMCJ20A(CA)	22.2	24.5	1.0	20	5.0	46.3	32.4
SMCJ22A(CA)	24.4	26.9	1.0	22	5.0	42.3	35.5
SMCJ24A(CA)	26.7	29.5	1.0	24	5.0	38.6	38.9
SMCJ26A(CA)	28.9	31.9	1.0	26	5.0	35.6	42.1
SMCJ28A(CA)	31.1	34.4	1.0	28	5.0	33.0	45.4
SMCJ30A(CA)	33.3	36.8	1.0	30	5.0	31.0	48.4
SMCJ33A(CA)	36.7	40.6	1.0	33	5.0	28.1	53.3
SMCJ36A(CA)	40.0	44.2	1.0	36	5.0	25.8	58.1
SMCJ40A(CA)	44.4	49.1	1.0	40	5.0	23.3	64.5
SMCJ43A(CA)	47.8	52.8	1.0	43	5.0	21.6	69.4
SMCJ45A(CA)	50.0	55.3	1.0	45	5.0	20.6	72.7
SMCJ48A(CA)	53.3	58.9	1.0	48	5.0	19.4	77.4
SMCJ51A(CA)	56.7	62.7	1.0	51	5.0	18.2	82.4
SMCJ54A(CA)	60.0	66.3	1.0	54	5.0	17.2	87.1
SMCJ58A(CA)	64.4	71.2	1.0	58	5.0	16.0	93.6
SMCJ60A(CA)	66.7	73.7	1.0	60	5.0	15.5	96
SMCJ64A(CA)	71.1	78.6	1.0	64	5.0	14.6	103
SMCJ70A(CA)	77.8	86	1.0	70	5.0	13.3	113
SMCJ75A(CA)	83.3	92.1	1.0	75	5.0	12.4	121
SMCJ78A(CA)	86.7	95.8	1.0	78	5.0	11.9	126
SMCJ85A(CA)	94.4	104	1.0	85	5.0	10.9	137
SMCJ90A(CA)	100	111	1.0	90	5.0	10.3	146
SMCJ100A(CA)	111	123	1.0	100	5.0	9.3	162
SMCJ110A(CA)	122	135	1.0	110	5.0	8.5	177
SMCJ120A(CA)	133	147	1.0	120	5.0	7.8	193
SMCJ130A(CA)	144	159	1.0	130	5.0	7.2	209
SMCJ150A(CA)	167	185	1.0	150	5.0	6.2	243
SMCJ160A(CA)	178	197	1.0	160	5.0	5.8	259
SMCJ170A(CA)	189	209	1.0	170	5.0	5.50	275
SMCJ188A(CA)	209	231	1.0	188	5.0	4.60	328

Notes :

- (1) Pulse test : $t_p < 50ms$.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) For bi-directional types have V_{WM} of 10 Volts and less , the I_D limit is doubled
- (4) For the bi-directional SMBJ5.0CA, the maximum V_{BR} is 7.25V
- (5) "SMCJ" will be omitted in marking on the diode.

FIG.1 - PULSE DERATING CURVE

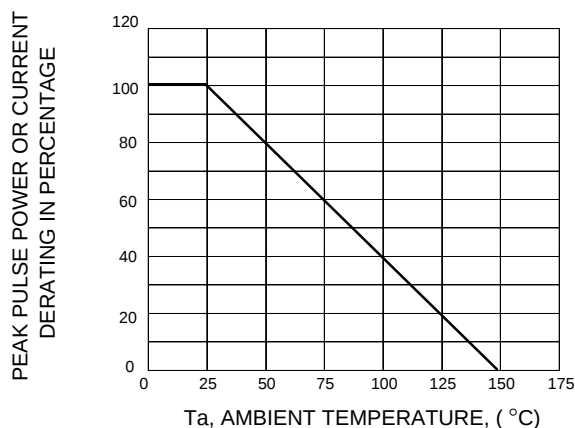


FIG.2 - TYPICAL JUNCTION CAPACITANCE

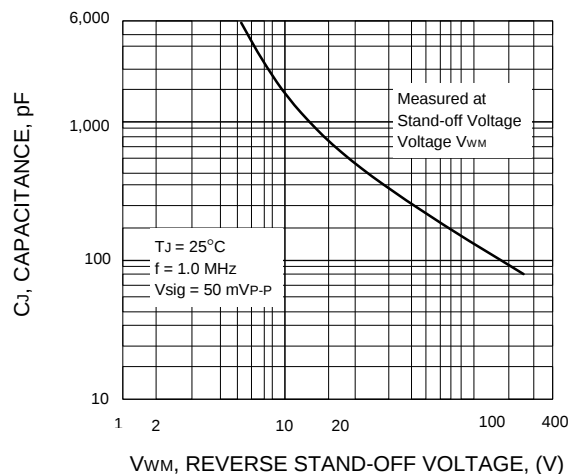


FIG.3 - PULSE WAVEFORM

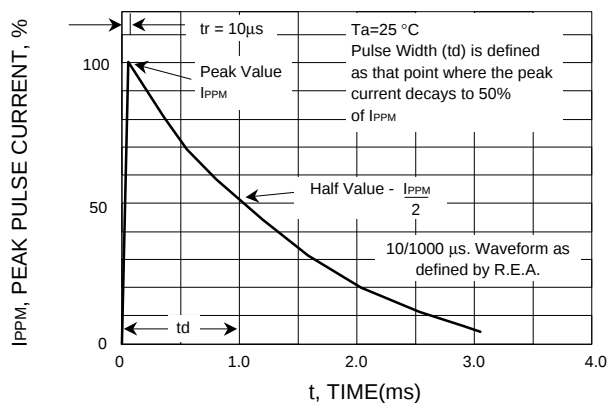


FIG.4 - PEAK PULSE POWER RATING CURVE

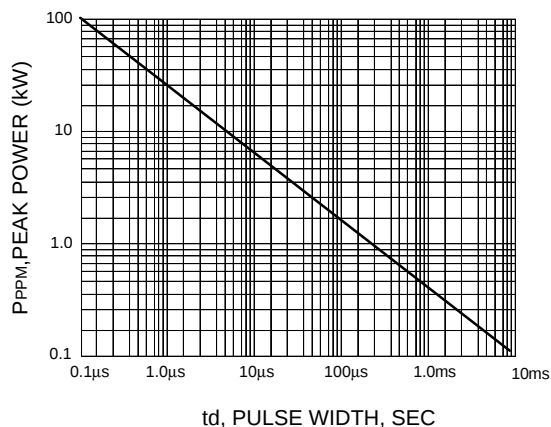
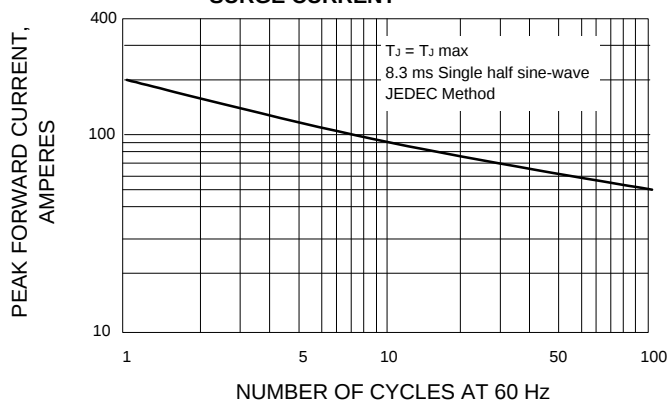


FIG.5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



Attention:

The graph is for reference only, can't be the basis for judgment.

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