

SMCJ10 THRU SMCJ120A

TRANSIENT VOLTAGE SUPPRESSORS

Stand off Voltage: 10 to 120 Volts Peak Pulse Power: 1500 Watts

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 1500W peak pulse power capability on 10/1000 μ s
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volt to BV min

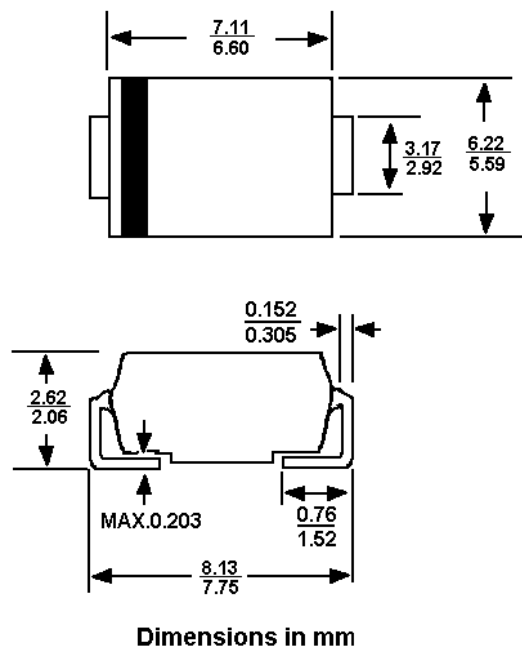
Mechanical Data

Case: DO-214AB (SMC) molded plastic

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

Polarity: Color band denotes cathode except bipolar

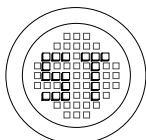
SMC / DO-214AB



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

	Symbol	Value	Unit
Peak Power Dissipation with a 10/1000us waveform(Note1,2)	P_{PPM}	min. 1500	W
Peak Pulse Current with a 10/1000us waveform(Note1)	I_{PPM}	See Next Table	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V_F	3.5	V
Peak Forward Surge Current, 8.3ms Single half sine-wave Unidirectional only (Note2)	I_{FSM}	200	A
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	? /W
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	75	? /W
Junction and Storage Temperature Range	T_j, T_s	-55 to +150	?

- Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_a = 25^\circ\text{C}$, per Fig.2
 2. Mounted on 0.31 x 0.31" (8.0x8.0mm)Copper pads to each terminal
 3 Mounted on minimum recommended pad layout.



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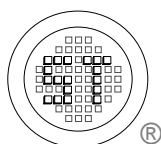
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Rating at 25°C ambient temperature unless otherwise specified.

Part Number	Breakdown Voltage $V_{BR}^{(1)}$ (V) MIN@ I_T	Breakdown Voltage $V_{BR}^{(1)}$ (V) MAX@ I_T	Test Current I_T (mA)	Reverse Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage @ V_{WM} $I_R^{(3)}$ (μ A)	Peak Pulse Current $I_{PPM}^{(2)}$ (A)	Maximum Clamping Voltage @ I_{PPM} V_C (V)
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
SMCJ40	44.4	54.3	1.0	40	1.0	21.0	71.4



SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



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Certificate No. 05103



ISO 14001
Certificate No. 7116



ISO 9001 : 2000
Certificate No. 000-000-000-000

Dated : 30/03/2005 H

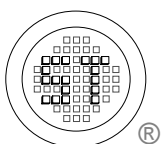
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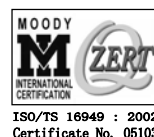
Part Number	Breakdown Voltage $V_{BR}^{(1)}$ (V) MIN@ I_T	Breakdown Voltage $V_{BR}^{(1)}$ (V) MAX@ I_T	Test Current I_T (mA)	Reverse Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage @ V_{WM} $I_R^{(3)}$ (μ A)	Peak Pulse Current $I_{PPM}^{(2)}$ (A)	Maximum Clamping Voltage @ I_{PPM} V_C (V)
SMCJ40A	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

Notes:

- (1). Pulse test:: $t_p \leq 50ms$
- (2). Surge current waveform per Fig.3 and derated per Fig.2
- (3). For bi-directional types having V_{WM} of 10 volts and less, the I_D limit is doubled



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Fig. 1 – Peak Pulse Power Rating Curve

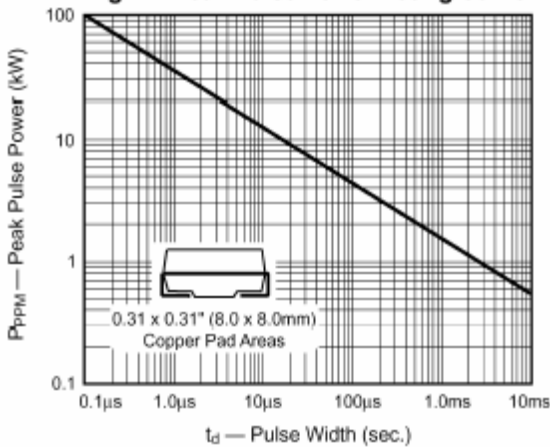


Fig. 2 – Pulse Derating Curve

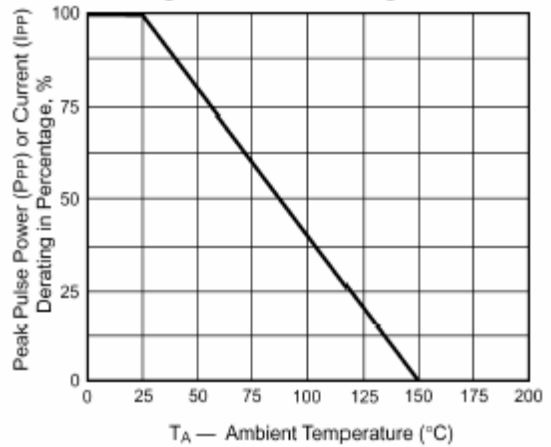


Fig. 3 – Pulse Waveform

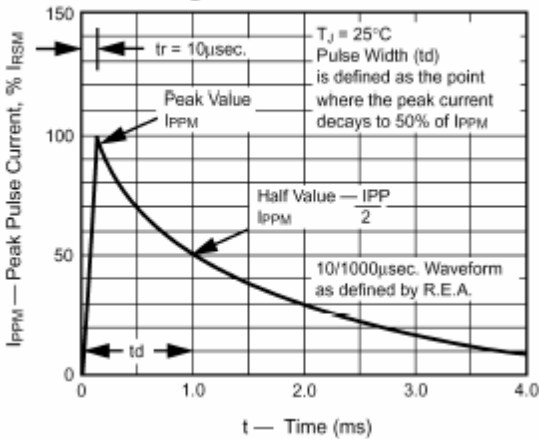


Fig. 4 – Typical Junction Capacitance Uni-Directional

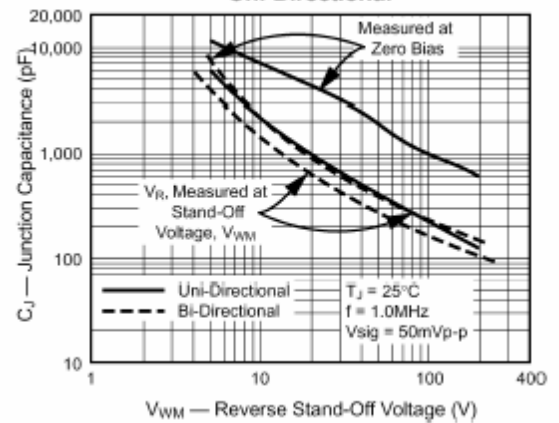


Fig. 5 – Typical Transient Thermal Impedance

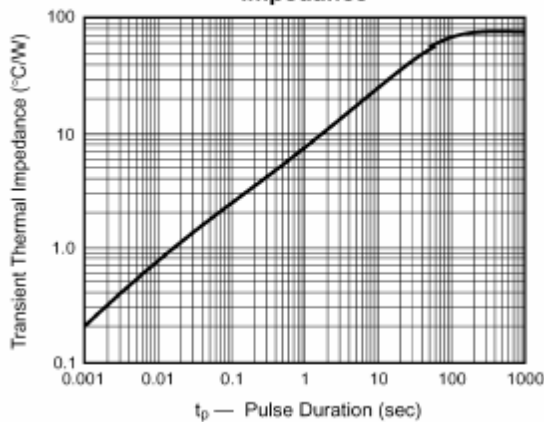
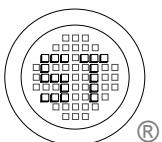
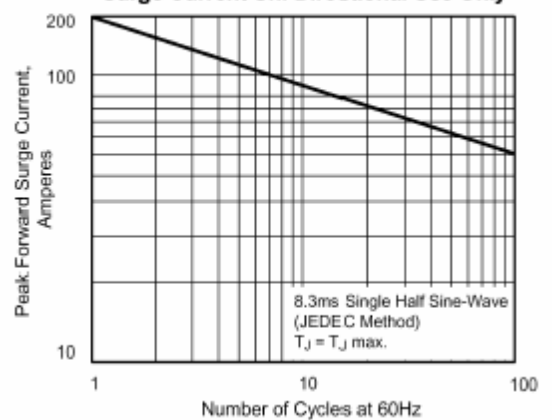


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only



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