

Surface Mount Transient Voltage Suppressor Diodes

SMCJ SERIES

Features

- ◆ Excellent clamping capability
- ◆ Low dynamic impedance
- ◆ Solder dip 260 °C max. 10 s, per JESD 22-B106

Mechanical Data

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

Terminals: Tin plated leads, solderable per J-STD- 002
and JESD22-B102

Mounting Position: Any



Maximum Ratings & Electrical Characteristics

Ratings at $T_A = 25^\circ\text{C}$ unless otherwise specified

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1) (2)	P_{PPM}	W	1500
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$ (2)	P_D	W	6.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (3)	I_{FSM}	A	200
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$	-55 to +150
Maximum instantaneous forward voltage at 100A for unidirectional only(4)	V_{FM}	V	3.5/5.0
Junction to ambient	$R_{\theta JA}$	$^\circ\text{C/W}$	75
Junction to lead	$R_{\theta JL}$	$^\circ\text{C/W}$	15

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" (8.0 x 8.0 mm) copper pads to each terminal
- (3) Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- (4) $V_F=3.5\text{V}$ Max for devices of $V_{BR} \leq 220\text{v}$, and $V_F=5.0\text{v}$ Max for devices of $V_{BR} > 220\text{v}$.
- (5) Mounted on minimum recommended pad layout.

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Transient Voltage Suppressors-SMD

Part No.		Peak Power Dissipation 10/1000 μ sec(W)	Reverse Stand-Off Voltage $V_{RWM}(V)$	Breakdown Voltage $V_{BR}(V)$ Min @ I_T	Breakdown Voltage $V_{BR}(V)$ Max @ I_T	Test Current I_T (mA)	Max Clamping Voltage $V_C(V)$ @ I_{PP}	Peak Pulse Current I_{PP} (A)	Reverse Leakage I_R (μ A) @ V_{RWM}
SMCJ5.0A	SMCJ5.0CA	1500	5.0	6.40	7.00	10	9.2	163.04	1000
SMCJ6.0A	SMCJ6.0CA	1500	6.0	6.67	7.37	10	10.3	145.63	1000
SMCJ6.5A	SMCJ6.5CA	1500	6.5	7.22	7.98	10	11.2	133.93	500
SMCJ7.0A	SMCJ7.0CA	1500	7.0	7.78	8.60	10	12.0	125.00	200
SMCJ7.5A	SMCJ7.5CA	1500	7.5	8.33	9.21	1	12.9	116.28	100
SMCJ8.0A	SMCJ8.0CA	1500	8.0	8.89	9.83	1	13.6	110.29	50
SMCJ8.5A	SMCJ8.5CA	1500	8.5	9.44	10.4	1	14.4	104.17	20
SMCJ9.0A	SMCJ9.0CA	1500	9.0	10.0	11.1	1	15.4	97.40	10
SMCJ10A	SMCJ10CA	1500	10	11.1	12.3	1	17.0	88.24	5
SMCJ11A	SMCJ11CA	1500	11	12.2	13.5	1	18.2	82.42	5
SMCJ12A	SMCJ12CA	1500	12	13.3	14.7	1	19.9	75.38	5
SMCJ13A	SMCJ13CA	1500	13	14.4	15.9	1	21.5	69.77	5
SMCJ14A	SMCJ14CA	1500	14	15.6	17.2	1	23.2	64.66	5
SMCJ15A	SMCJ15CA	1500	15	16.7	18.5	1	24.4	61.48	5
SMCJ16A	SMCJ16CA	1500	16	17.8	19.7	1	26.0	57.69	5
SMCJ17A	SMCJ17CA	1500	17	18.9	20.9	1	27.6	54.35	5
SMCJ18A	SMCJ18CA	1500	18	20.0	22.1	1	29.2	51.37	5
SMCJ19A	SMCJ19CA	1500	19	21.1	23.3	1	30.8	48.73	5
SMCJ20A	SMCJ20CA	1500	20	22.2	24.5	1	32.4	46.30	5
SMCJ22A	SMCJ22CA	1500	22	24.4	26.9	1	35.5	42.25	5
SMCJ24A	SMCJ24CA	1500	24	26.7	29.5	1	38.9	38.56	5
SMCJ26A	SMCJ26CA	1500	26	28.9	31.9	1	42.1	35.63	5
SMCJ28A	SMCJ28CA	1500	28	31.1	34.4	1	45.4	33.04	5
SMCJ30A	SMCJ30CA	1500	30	33.3	36.8	1	48.4	30.99	5
SMCJ33A	SMCJ33CA	1500	33	36.7	40.6	1	53.3	28.14	5
SMCJ36A	SMCJ36CA	1500	36	40.0	44.2	1	58.1	25.82	5
SMCJ40A	SMCJ40CA	1500	40	44.4	49.1	1	64.5	23.26	5
SMCJ43A	SMCJ43CA	1500	43	47.8	52.8	1	69.4	21.61	5
SMCJ45A	SMCJ45CA	1500	45	50.0	55.3	1	72.7	20.63	5
SMCJ48A	SMCJ48CA	1500	48	53.3	58.9	1	77.4	19.38	5
SMCJ51A	SMCJ51CA	1500	51	56.7	62.7	1	82.4	18.20	5
SMCJ54A	SMCJ54CA	1500	54	60.0	66.3	1	87.1	17.22	5
SMCJ58A	SMCJ58CA	1500	58	64.4	71.2	1	93.6	16.03	5
SMCJ60A	SMCJ60CA	1500	60	66.7	73.7	1	96.8	15.50	5
SMCJ64A	SMCJ64CA	1500	64	71.1	78.6	1	103.0	14.56	5
SMCJ70A	SMCJ70CA	1500	70	77.8	86.0	1	113.0	13.27	5
SMCJ75A	SMCJ75CA	1500	75	83.3	92.1	1	121.0	12.40	5
SMCJ78A	SMCJ78CA	1500	78	86.7	95.8	1	126.0	11.90	5
SMCJ80A	SMCJ80CA	1500	80	88.8	97.6	1	129.6	11.57	5
SMCJ85A	SMCJ85CA	1500	85	94.4	104	1	137.0	10.95	5
SMCJ90A	SMCJ90CA	1500	90	100	111	1	146.0	10.27	5
SMCJ100A	SMCJ100CA	1500	100	111	123	1	162.0	9.26	5
SMCJ110A	SMCJ110CA	1500	110	122	135	1	177.0	8.47	5
SMCJ120A	SMCJ120CA	1500	120	133	147	1	193.0	7.77	5
SMCJ130A	SMCJ130CA	1500	130	144	159	1	209.0	7.18	5
SMCJ140A	SMCJ140CA	1500	140	155	171	1	226.8	6.61	5
SMCJ150A	SMCJ150CA	1500	150	167	185	1	243.0	6.17	5
SMCJ160A	SMCJ160CA	1500	160	178	197	1	259.0	5.79	5
SMCJ170A	SMCJ170CA	1500	170	189	209	1	275.0	5.45	5
SMCJ180A	SMCJ180CA	1500	180	200	220	1	291.6	5.14	5
SMCJ190A	SMCJ190CA	1500	190	211	232	1	307.8	4.87	5
SMCJ200A	SMCJ200CA	1500	200	224	247	1	324.0	4.6	5
SMCJ220A	SMCJ220CA	1500	220	246	272	1	356.0	4.2	5
SMCJ250A	SMCJ250CA	1500	250	279	309	1	405.0	3.7	5
SMCJ300A	SMCJ300CA	1500	300	335	371	1	486.0	3.1	5
SMCJ350A	SMCJ350CA	1500	350	391	432	1	567.0	2.6	5
SMCJ400A	SMCJ400CA	1500	400	447	494	1	648.0	2.3	5
SMCJ440A	SMCJ440CA	1500	440	492	543	1	713.0	2.1	5

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Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

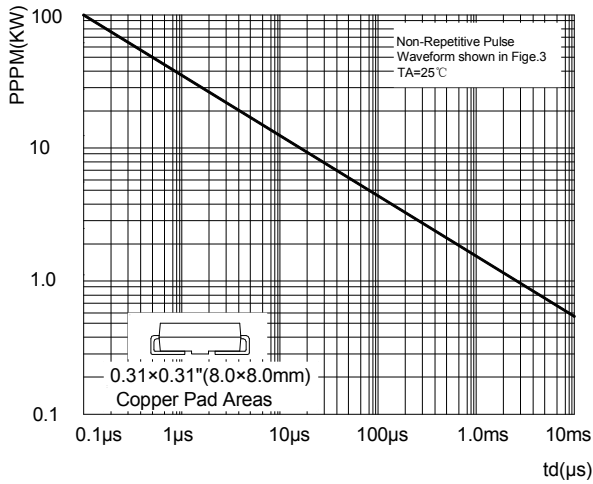


FIG2: Pulse Power or Current vs. Initial Junction Temperature

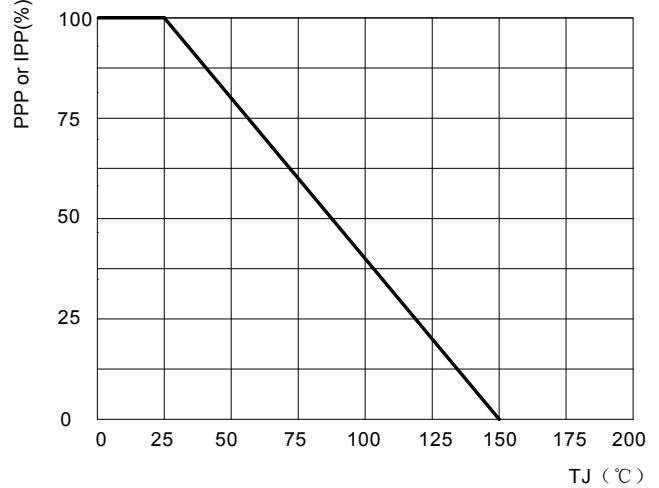


FIG3: Pulse Waveform

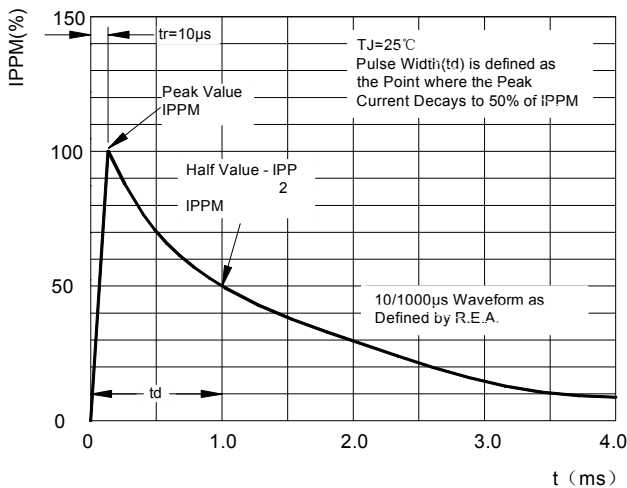


FIG4: Typical Transient Thermal Impedance

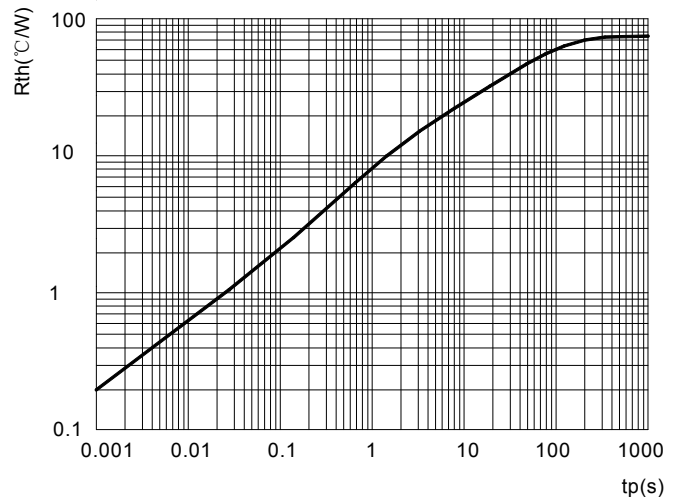


FIG5: Maximum Non-Repetitive Surge Current

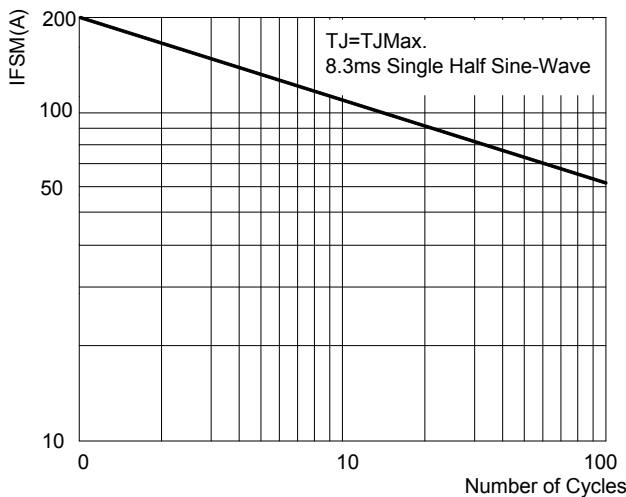
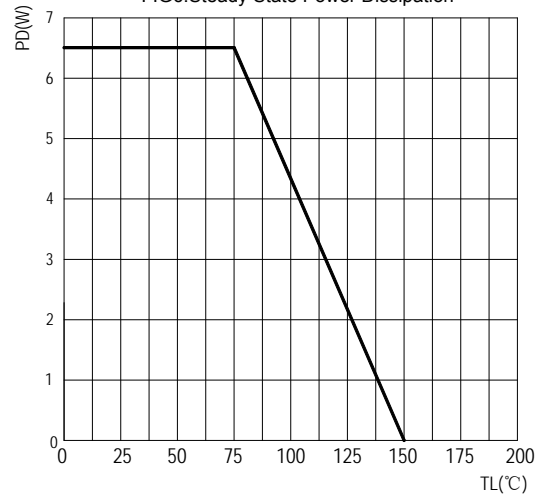


FIG6: Steady State Power Dissipation

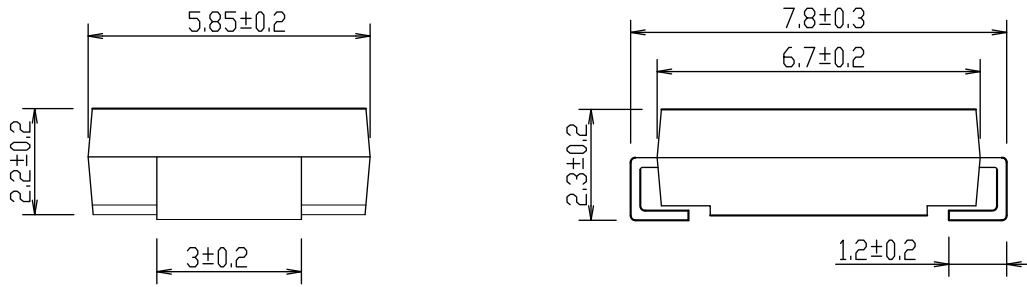


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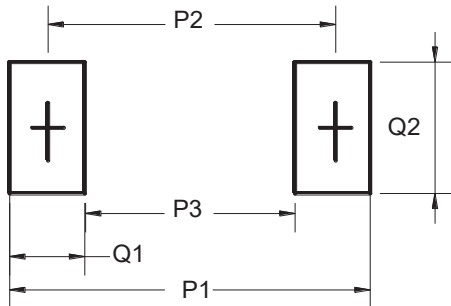
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Package Outline Dimensions(unit:mm)

DO-214AB (SMC)



Mounting Pad Layout(unit:mm)



Dim	Millimeters
P1	9.80
P2	6.80
P3	3.80
Q1	3.00
Q2	4.00

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