TRANSIENT VOLTAGE SUPPRESSOR

BREAKDOWN VOLTAGE: 5.0 --- 188 V
PEAK PULSE POWER: 1500 W

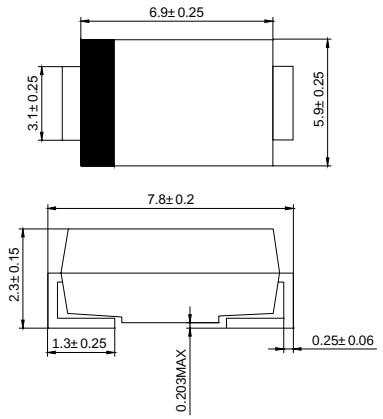
FEATURES

- ◇ Underwriters Laboratory Recognition under UL standard for safety 497B: Isolated Loop Circuit Protection
- ◇ Low profile package with built-in strain relief for surface mounted applications
- ◇ Glass passivated junction
- ◇ Low incremental surge resistance, excellent clamping capability
- ◇ 1500W peak pulse power capability with a 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- ◇ Very fast response time
- ◇ High temperature soldering guaranteed: 250°C/10 seconds at terminals

MECHANICAL DATA

- ◇ Case: JEDEC DO-214AB molded plastic over passivated junction
- ◇ Terminals: Solder plated, solderable per MIL-STD-750, method 2026
- ◇ Polarity: For uni-directional types the color band denotes the cathode, which is postitive with respect to the anode under normal TVS operation
- ◇ Weight: 0.007 ounces, 0.21 grams
- ◇ Flammability: Epoxy is rated UL 94V-0

DO-214AB(SMC)



Dimensions in millimeters

Devices for Bidirectional Applications

For bi-directional devices, use suffix C or CA (e.g. SMCJ10C, SMCJ10CA). Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000μs waveform (NOTE 1,2, FIG.1)	P_{PPM}	Minimum 1500	W
Peak pulse current with a 10/1000μs waveform (NOTE 1)	I_{PPM}	See Table Below	A
Peak forward surge current, 8.3ms single half sine-wave uni-directional only((NOTE 2)	I_{FSM}	200.0	A
Typical thermal resistance, junction to ambient((NOTE 3)	$R_{\theta JA}$	100.0	℃/W
Typical thermal resistance, junction to lead	$R_{\theta JL}$	20	℃/W
Operating junction and storage temperature range	T_J, T_{STG}	-55---+150	℃

NOTES: (1) Non-repetitive current pules, per Fig. 3 and derated above TA=25 ℃ per Fig. 2.
(2) Mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pads to each terminal.
(3) Mounted on minimum recommended pad layout.

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ELECTRICAL CHARACTERISTICS Ratings at 25℃ ambient temperature unless otherwise specified.VF=3.5V at IF=50A (uni-directional only)

Type	$V_{(BR)}$			V_{WM}	I_{RM}	I_{PPM}	V_C
	V		@I_T		@V_{WM}		@I_{PPM}
	Min	Max	mA	V	μA	A	V
SMCJ5.0	6.40	7.82	10	5.0	1000	156.3	9.6
SMCJ5.0A	6.40	7.07	10	5.0	1000	163.0	9.2
SMCJ6.0	6.67	8.15	10	5.0	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	5.0	79.8	18.8
SMCJ10A	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11	12.2	14.9	1.0	11	5.0	74.6	20.1
SMCJ11A	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12	13.3	16.3	1.0	12	5.0	68.2	22.0
SMCJ12A	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13	14.4	17.6	1.0	13	5.0	63.0	23.8
SMCJ13A	14.4	15.9	1.0	13	5.0	69.8	21.5
SMCJ14	15.6	19.1	1.0	14	5.0	58.1	25.8
SMCJ14A	15.6	17.2	1.0	14	5.0	64.7	23.2
SMCJ15	16.7	20.4	1.0	15	5.0	55.8	26.9
SMCJ15A	16.7	18.5	1.0	15	5.0	61.5	24.4
SMCJ16	17.8	21.8	1.0	16	5.0	52.1	28.8
SMCJ16A	17.8	19.7	1.0	16	5.0	57.7	26.0
SMCJ17	18.9	23.1	1.0	17	5.0	49.2	30.5
SMCJ17A	18.9	20.9	1.0	17	5.0	54.3	27.6
SMCJ18	20.0	24.4	1.0	18	5.0	46.6	32.2
SMCJ18A	20.0	22.1	1.0	18	5.0	51.4	29.2
SMCJ20	22.2	27.1	1.0	20	5.0	41.9	35.8
SMCJ20A	22.2	24.5	1.0	20	5.0	46.3	32.4
SMCJ22	24.4	29.8	1.0	22	5.0	38.1	39.4
SMCJ22A	24.4	26.9	1.0	22	5.0	42.3	35.5
SMCJ24	26.7	32.6	1.0	24	5.0	34.9	43.0
SMCJ24A	26.7	29.5	1.0	24	5.0	38.6	38.9
SMCJ26	28.9	35.3	1.0	26	5.0	32.2	46.6
SMCJ26A	28.9	31.9	1.0	26	5.0	35.6	42.1
SMCJ28	31.1	38.0	1.0	28	5.0	30.0	50.0
SMCJ28A	31.1	34.4	1.0	28	5.0	33.0	45.4
SMCJ30	33.3	40.7	1.0	30	5.0	28.0	53.5
SMCJ30A	33.3	36.8	1.0	30	5.0	31.0	48.4
SMCJ33	36.7	44.9	1.0	33	5.0	25.4	59.0
SMCJ33A	36.7	40.6	1.0	33	5.0	28.1	53.3

ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.VF=3.5V at IF=50A (uni-directional only)

Type	$V_{(BR)}$			V_{WM}	I_{RM}	I_{PPM}	V_C
	V		@I_T		@V_{WM}		@I_{PPM}
	Min	Max	mA	V	μA	A	V
SMCJ36	40.0	48.9	1.0	36	5.0	23.3	64.3
SMCJ36A	40.0	44.2	1.0	36	5.0	25.8	58.1
SMCJ40	44.4	54.3	1.0	40	5.0	21.0	71.4
SMCJ40A	44.4	49.1	1.0	40	5.0	23.3	64.5
SMCJ43	47.8	58.4	1.0	43	5.0	19.6	76.7
SMCJ43A	47.8	52.8	1.0	43	5.0	21.6	69.4
SMCJ45	50.0	61.1	1.0	45	5.0	18.7	80.3
SMCJ45A	50.0	55.3	1.0	45	5.0	20.6	72.7
SMCJ48	53.3	65.1	1.0	48	5.0	17.5	85.5
SMCJ48A	53.3	58.9	1.0	48	5.0	19.4	77.4
SMCJ51	56.7	69.3	1.0	51	5.0	16.5	91.1
SMCJ51A	56.7	62.7	1.0	51	5.0	18.2	82.4
SMCJ54	60.0	73.3	1.0	54	5.0	15.6	96.3
SMCJ54A	60.0	66.3	1.0	54	5.0	17.2	87.1
SMCJ58	64.4	78.7	1.0	58	5.0	14.6	103
SMCJ58A	64.4	71.2	1.0	58	5.0	16.0	93.6
SMCJ60	66.7	81.5	1.0	60	5.0	14.0	107
SMCJ60A	66.7	73.7	1.0	60	5.0	15.5	96.8
SMCJ64	71.1	86.9	1.0	64	5.0	13.2	114
SMCJ64A	71.1	78.6	1.0	64	5.0	14.6	103
SMCJ70	77.8	95.1	1.0	70	5.0	12.0	125
SMCJ70A	77.8	86.0	1.0	70	5.0	13.3	113
SMCJ75	83.3	102	1.0	75	5.0	11.2	134
SMCJ75A	83.3	92.1	1.0	75	5.0	12.4	121
SMCJ78	86.7	106	1.0	78	5.0	10.8	139
SMCJ78A	86.7	95.8	1.0	78	5.0	11.9	126
SMCJ85	94.4	115	1.0	85	5.0	9.9	151
SMCJ85A	94.4	104	1.0	85	5.0	10.9	137
SMCJ90	100	122	1.0	90	5.0	9.4	160
SMCJ90A	100	111	1.0	90	5.0	10.3	146
SMCJ100	111	136	1.0	100	5.0	8.4	179
SMCJ100A	111	123	1.0	100	5.0	9.3	162
SMCJ110	122	149	1.0	110	5.0	7.7	196
SMCJ110A	122	135	1.0	110	5.0	8.5	177
SMCJ120	133	163	1.0	120	5.0	7.0	214
SMCJ120A	133	147	1.0	120	5.0	7.8	193
SMCJ130	144	176	1.0	130	5.0	6.5	231
SMCJ130A	144	159	1.0	130	5.0	7.2	209
SMCJ150	167	204	1.0	150	5.0	5.6	268
SMCJ150A	167	185	1.0	150	5.0	6.2	243
SMCJ160	178	218	1.0	160	5.0	5.2	287
SMCJ160A	178	197	1.0	160	5.0	5.8	259
SMCJ170	189	231	1.0	170	5.0	4.9	304
SMCJ170A	189	209	1.0	170	5.0	5.5	275
SMCJ188	209	255	1.0	188	5.0	4.4	344
SMCJ188A	209	231	1.0	188	5.0	4.6	328

FIG.1 -- PEAK PULSE POWER RATING CURVE

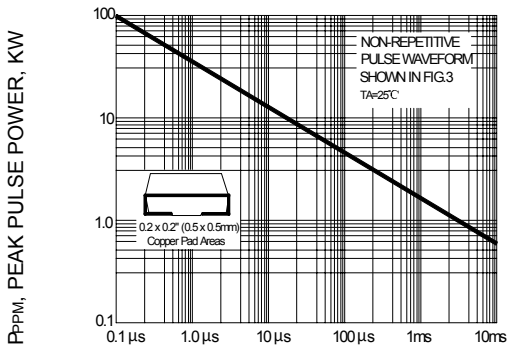

FIG.2 -- PULSE DERATING CURVE

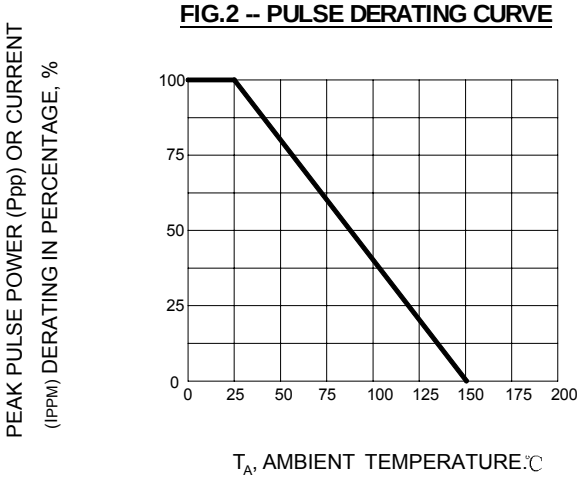

FIG.3 -- PULSE WAVEFORM

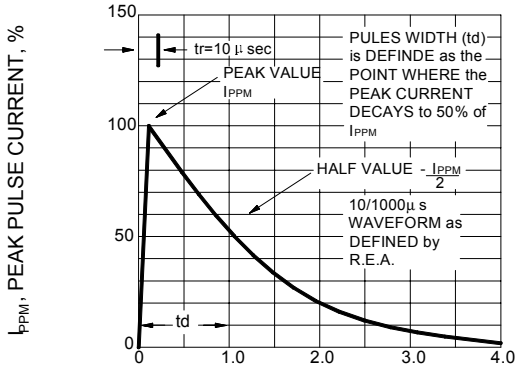

FIG.4 -- TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

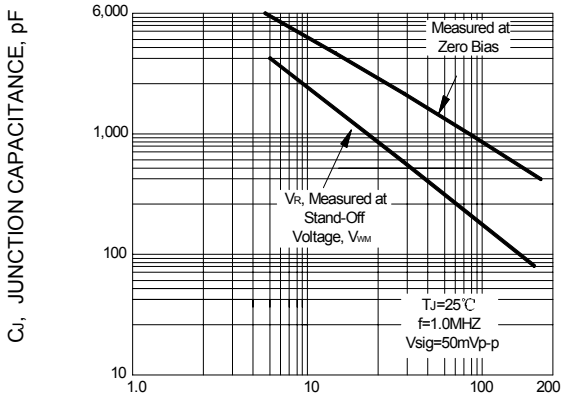

FIG.5 -- TYPICAL TRANSIENT THERMAL IMPEDANCE

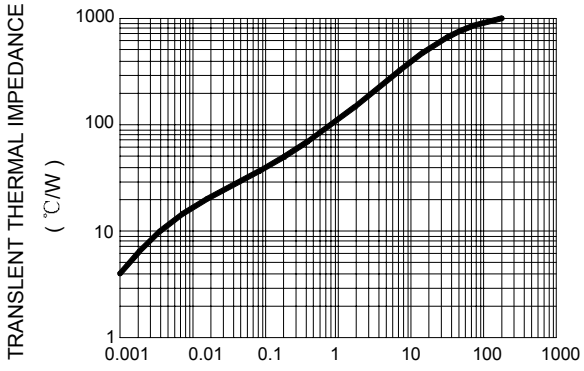

FIG.6 -- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT