

TRANSIENT VOLTAGE SUPPRESSOR

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

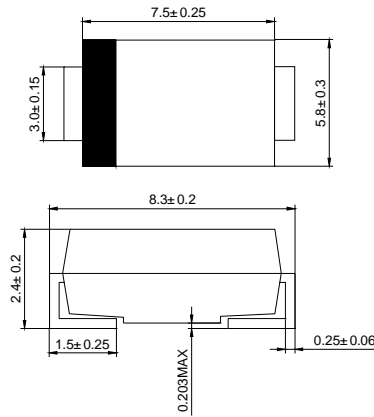
FEATURES

- ◇ 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 positive 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°C 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 _{θJA}	100.0	°C/W
Typical thermal resistance, junction to lead	R _{θJL}	20	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55---+150	°C

NOTES: (1) Non-repetitive current pulses, 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°C ambient temperature unless otherwise specified. $V_F=3.5V$ at $I_F=50A$ (uni-directional only)

Type	Device marking code		$V_{(BR)}$			V_{WM}	I_{RM}	I_{PPM}	V_C
			V		@ I_T		@ V_{WM}		@ I_{PPM}
	UNI	BI	Min	Max	mA	V	μA	A	V
SMCJ5.0	CAD	CWD	6.40	7.82	10	5.0	1000	156.3	9.6
SMCJ5.0A	CAE	CWE	6.40	7.07	10	5.0	1000	163.0	9.2
SMCJ6.0	CAF	CWF	6.67	8.15	10	5.0	1000	131.6	11.4
SMCJ6.0A	CAG	CWG	6.67	7.37	10	6.0	1000	145.6	10.3
SMCJ6.5	CAH	CWH	7.22	8.82	10	6.5	500	122.0	12.3
SMCJ6.5A	CAK	CWK	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0	CAL	CWL	7.78	9.51	10	7.0	200	112.8	13.3
SMCJ7.0A	CAM	CWM	7.78	8.60	10	7.0	200	125.0	12.0
SMCJ7.5	CAN	CWN	8.33	10.2	1.0	7.5	100	104.9	14.3
SMCJ7.5A	CAP	CWP	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0	CAQ	CWQ	8.89	10.9	1.0	8.0	50	100.0	15.0
SMCJ8.0A	CAR	CWR	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5	CAS	CWS	9.44	11.5	1.0	8.5	20	94.3	15.9
SMCJ8.5A	CAT	CWT	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0	CAU	CWU	10.0	12.2	1.0	9.0	10	88.8	16.9
SMCJ9.0A	CAV	CWV	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10	CAW	CWW	11.1	13.6	1.0	10	5.0	79.8	18.8
SMCJ10A	CAX	CWX	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11	CAY	CWY	12.2	14.9	1.0	11	5.0	74.6	20.1
SMCJ11A	CAZ	CWZ	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12	CBD	CXD	13.3	16.3	1.0	12	5.0	68.2	22.0
SMCJ12A	CBE	CXE	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13	CBF	CXF	14.4	17.6	1.0	13	5.0	63.0	23.8
SMCJ13A	CBG	CXG	14.4	15.9	1.0	13	5.0	69.8	21.5
SMCJ14	CBH	CXH	15.6	19.1	1.0	14	5.0	58.1	25.8
SMCJ14A	CBK	CXK	15.6	17.2	1.0	14	5.0	64.7	23.2
SMCJ15	CBL	CXL	16.7	20.4	1.0	15	5.0	55.8	26.9
SMCJ15A	CBM	CXM	16.7	18.5	1.0	15	5.0	61.5	24.4
SMCJ16	CBN	CXN	17.8	21.8	1.0	16	5.0	52.1	28.8
SMCJ16A	CBP	CXP	17.8	19.7	1.0	16	5.0	57.7	26.0
SMCJ17	CBQ	CXQ	18.9	23.1	1.0	17	5.0	49.2	30.5
SMCJ17A	CBR	CXR	18.9	20.9	1.0	17	5.0	54.3	27.6
SMCJ18	CBS	CXS	20.0	24.4	1.0	18	5.0	46.6	32.2
SMCJ18A	CBT	CXT	20.0	22.1	1.0	18	5.0	51.4	29.2
SMCJ20	CBU	CXU	22.2	27.1	1.0	20	5.0	41.9	35.8
SMCJ20A	CBV	CXV	22.2	24.5	1.0	20	5.0	46.3	32.4
SMCJ22	CBW	CXW	24.4	29.8	1.0	22	5.0	38.1	39.4
SMCJ22A	CBX	CXX	24.4	26.9	1.0	22	5.0	42.3	35.5
SMCJ24	CBY	CXY	26.7	32.6	1.0	24	5.0	34.9	43.0
SMCJ24A	CBZ	CXZ	26.7	29.5	1.0	24	5.0	38.6	38.9
SMCJ26	CCD	CYD	28.9	35.3	1.0	26	5.0	32.2	46.6
SMCJ26A	CCE	CYE	28.9	31.9	1.0	26	5.0	35.6	42.1
SMCJ28	CCF	CYF	31.1	38.0	1.0	28	5.0	30.0	50.0
SMCJ28A	CCG	CYG	31.1	34.4	1.0	28	5.0	33.0	45.4
SMCJ30	CCH	CYH	33.3	40.7	1.0	30	5.0	28.0	53.5
SMCJ30A	CCK	CYK	33.3	36.8	1.0	30	5.0	31.0	48.4
SMCJ33	CCL	CYL	36.7	44.9	1.0	33	5.0	25.4	59.0
SMCJ33A	CCM	CYM	36.7	40.6	1.0	33	5.0	28.1	53.3

ELECTRICAL CHARACTERISTICS

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

Type	Device marking code		V _(BR)			V _{WM}	I _{RM}	I _{PPM}	V _C
			V		@I _T		@V _{WM}		@I _{PPM}
	UNI	BI	Min	Max	mA	V	μA	A	V
SMCJ36	CCN	CYN	40.0	48.9	1.0	36	5.0	23.3	64.3
SMCJ36A	CCP	CYP	40.0	44.2	1.0	36	5.0	25.8	58.1
SMCJ40	CCQ	CYQ	44.4	54.3	1.0	40	5.0	21.0	71.4
SMCJ40A	CCR	CYR	44.4	49.1	1.0	40	5.0	23.3	64.5
SMCJ43	CCS	CYS	47.8	58.4	1.0	43	5.0	19.6	76.7
SMCJ43A	CCT	CYT	47.8	52.8	1.0	43	5.0	21.6	69.4
SMCJ45	CCU	CYU	50.0	61.1	1.0	45	5.0	18.7	80.3
SMCJ45A	CCV	CYV	50.0	55.3	1.0	45	5.0	20.6	72.7
SMCJ48	CCW	CYW	53.3	65.1	1.0	48	5.0	17.5	85.5
SMCJ48A	CCX	CYX	53.3	58.9	1.0	48	5.0	19.4	77.4
SMCJ51	CCY	CYY	56.7	69.3	1.0	51	5.0	16.5	91.1
SMCJ51A	CCZ	CYZ	56.7	62.7	1.0	51	5.0	18.2	82.4
SMCJ54	CRD	CZD	60.0	73.3	1.0	54	5.0	15.6	96.3
SMCJ54A	CRE	CZE	60.0	66.3	1.0	54	5.0	17.2	87.1
SMCJ58	CRF	CZF	64.4	78.7	1.0	58	5.0	14.6	103
SMCJ58A	CRG	CZG	64.4	71.2	1.0	58	5.0	16.0	93.6
SMCJ60	CRH	CZH	66.7	81.5	1.0	60	5.0	14.0	107
SMCJ60A	CRK	CZK	66.7	73.7	1.0	60	5.0	15.5	96.8
SMCJ64	CRL	CZL	71.1	86.9	1.0	64	5.0	13.2	114
SMCJ64A	CRM	CZM	71.1	78.6	1.0	64	5.0	14.6	103
SMCJ70	CRN	CZN	77.8	95.1	1.0	70	5.0	12.0	125
SMCJ70A	CRP	CZP	77.8	86.0	1.0	70	5.0	13.3	113
SMCJ75	CRQ	CZQ	83.3	102	1.0	75	5.0	11.2	134
SMCJ75A	CRR	CZR	83.3	92.1	1.0	75	5.0	12.4	121
SMCJ78	CRS	CZS	86.7	106	1.0	78	5.0	10.8	139
SMCJ78A	CRT	CZT	86.7	95.8	1.0	78	5.0	11.9	126
SMCJ85	CRU	CZU	94.4	115	1.0	85	5.0	9.9	151
SMCJ85A	CRV	CZV	94.4	104	1.0	85	5.0	10.9	137
SMCJ90	CRW	CZW	100	122	1.0	90	5.0	9.4	160
SMCJ90A	CRX	CZX	100	111	1.0	90	5.0	10.3	146
SMCJ100	CRY	CZY	111	136	1.0	100	5.0	8.4	179
SMCJ100A	CRZ	CZZ	111	123	1.0	100	5.0	9.3	162
SMCJ110	CSD	CVD	122	149	1.0	110	5.0	7.7	196
SMCJ110A	CSE	CVE	122	135	1.0	110	5.0	8.5	177
SMCJ120	CSF	CVF	133	163	1.0	120	5.0	7.0	214
SMCJ120A	CSG	CVG	133	147	1.0	120	5.0	7.8	193
SMCJ130	CSH	CVH	144	176	1.0	130	5.0	6.5	231
SMCJ130A	CSK	CVK	144	159	1.0	130	5.0	7.2	209
SMCJ150	CSL	CVL	167	204	1.0	150	5.0	5.6	268
SMCJ150A	CSM	CVM	167	185	1.0	150	5.0	6.2	243
SMCJ160	CSN	CVN	178	218	1.0	160	5.0	5.2	287
SMCJ160A	CSP	CVP	178	197	1.0	160	5.0	5.8	259
SMCJ170	CSQ	CVQ	189	231	1.0	170	5.0	4.9	304
SMCJ170A	CSR	CVR	189	209	1.0	170	5.0	5.5	275
SMCJ188	CST	CVT	209	255	1.0	188	5.0	4.4	344
SMCJ188A	CSS	CVS	209	231	1.0	188	5.0	4.6	328

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FIG.1 – PEAK PULSE POWER RATING CURVE

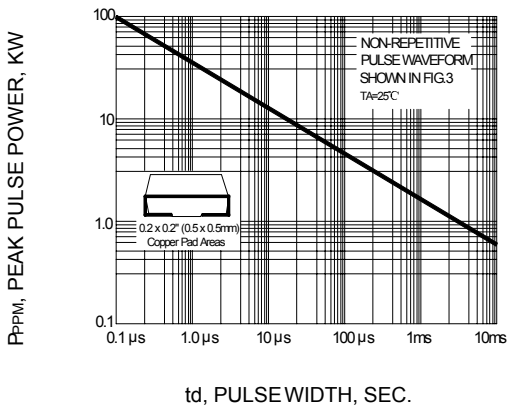


FIG.2 – PULSE DERATING CURVE

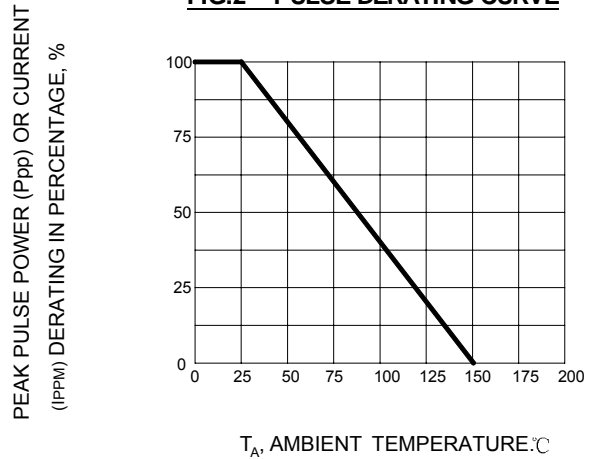


FIG.3 – PULSE WAVEFORM

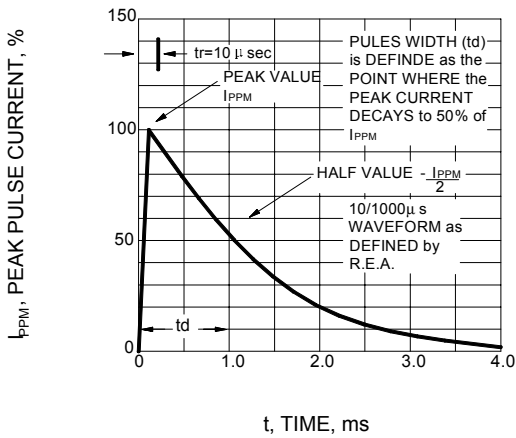


FIG.4 – TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

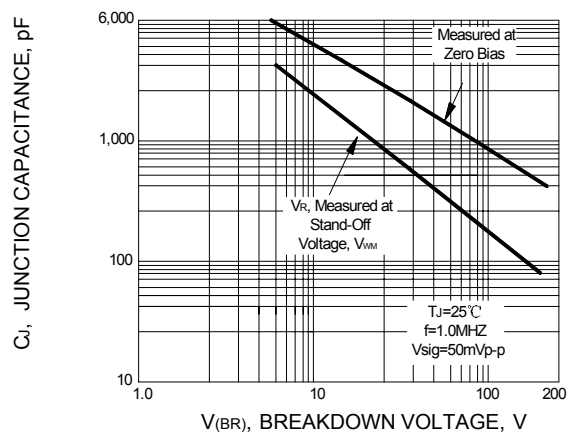


FIG.5 – TYPICAL TRANSIENT THERMAL IMPEDANCE

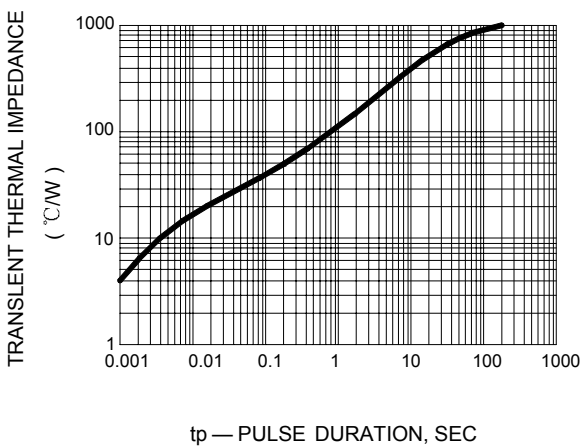


FIG.6 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

