MDE Semiconductor, Inc.

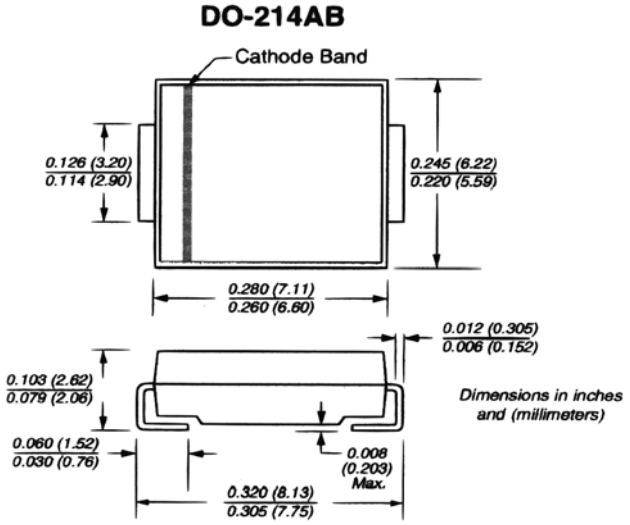
78-150 Calle Tampico, Unit 210, La Quinta, CA. U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414

SMCJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR
VOLTAGE-5.0 TO 170 Volts
1500 Watt Peak Pulse Power

FEATURES

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition rate (duty cycle):0.01%
- Fast response time: typically less than 1.0 ps from 0 volts to BV for unidirectional types
- Typical IR less than 1µA above 10V
- High temperature soldering: 250°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O



MECHANICAL DATA

Case: JEDEC DO214AB. Molded plastic over glass passivated junction
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
Polarity: Color band denoted positive end (cathode) except Bidirectional
Standard Packaging: 12mm tape (EIA STD RS-481)
Weight: 0.007 ounces, 0.021 grams)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMCJ5.0 thru types SMCJ170 (e.g. SMCJ5.0C, SMCJ170CA)
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 µs waveform (NOTE 1, 2, Fig.1)	P_{ppm}	Minimum 1500	Watts
Peak Pulse Current of on 10/1000 µs waveform (Note 1,Fig 3)	Ippm	SEE TABLE 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note2, 3)	I_{FSM}	200	Amps
Operatings and Storage Temperature Range	Tj, Tstg	-55 +150	°C

NOTES:
1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25 °C per Fig.2.
2. Mounted on Copper Pad area of 0.8x0.8" (20x20mm) per Fig.5.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum.

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RATING AND CHARACTERISTIC CURVES SMCJ SERIES

Fig. 1 – Peak Pulse Power Rating Curve

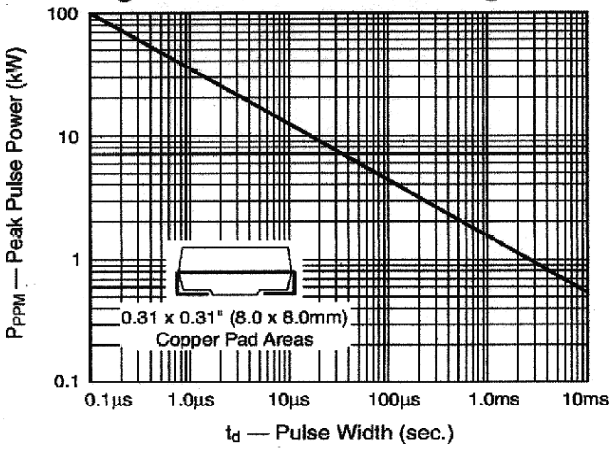


Fig. 2 – Pulse Derating Curve

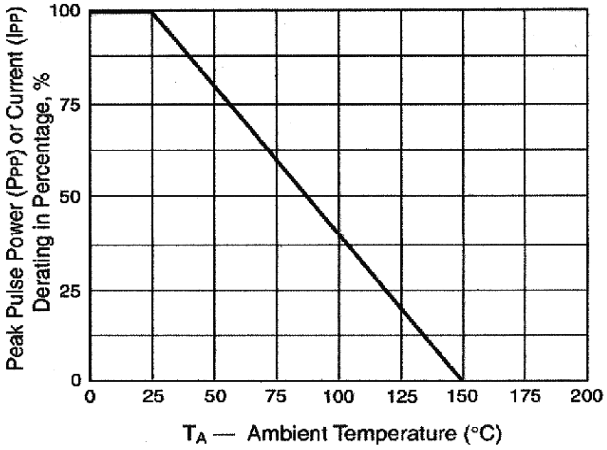


Fig. 3 – Pulse Waveform

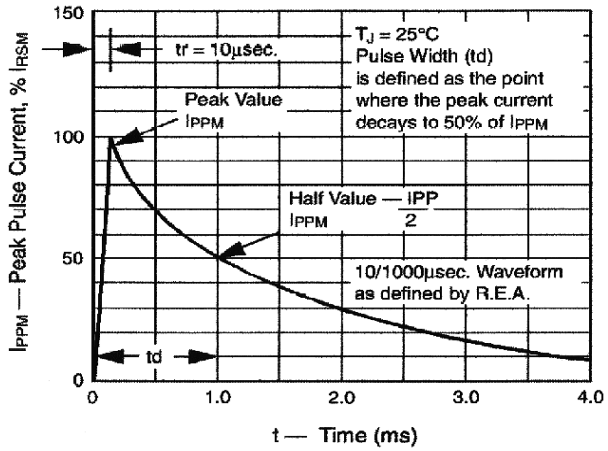


Fig. 4 – Typical Junction Capacitance Uni-Directional

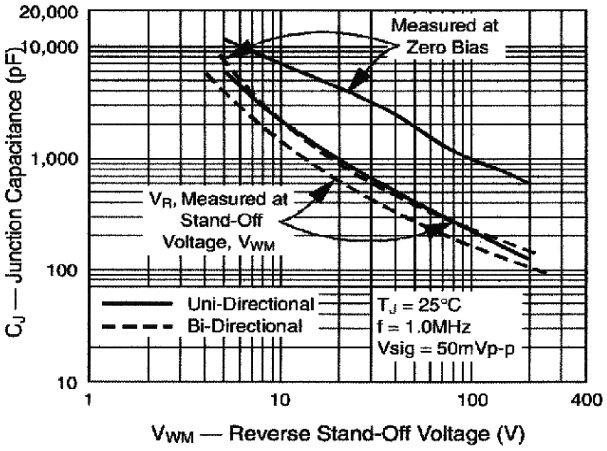


Fig. 5 – Typical Transient Thermal Impedance

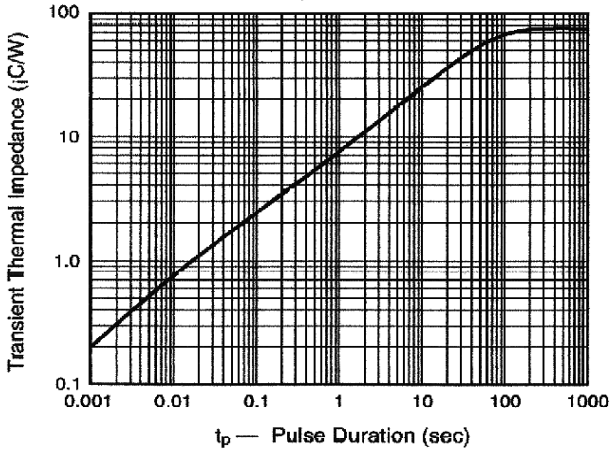
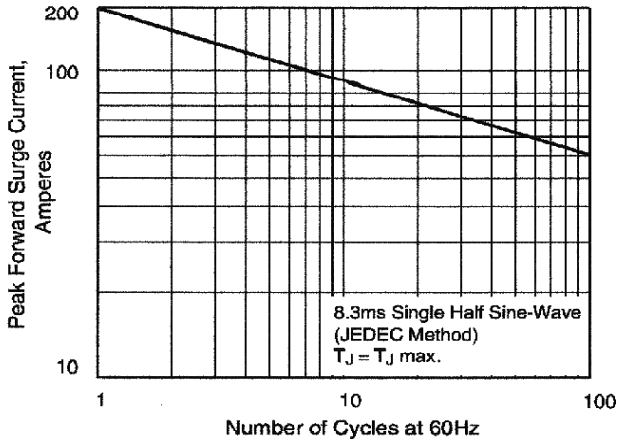


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only



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1500 Watt Surface Mount TVS

UNI-DIRECTIONAL PART NUMBER	DEVICE MARKING CODE UNI-POLAR	DEVICE MARKING CODE BI-POLAR	REVERSE STANDOFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @ IT	BREAKDOWN VOLTAGE VBR (V) MAX. @ IT	TEST CURRENT (It) mA	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR (µA)
SMCJ5.0	GDD	BDD	5.00	6.40	7.30	10	9.6	156.3	800
SMCJ5.0A	GDE	BDE	5.00	6.40	7.00	10	9.2	163.0	800
SMCJ6.0	GDF	BDF	6.00	6.67	8.15	10	11.4	131.6	800
SMCJ6.0A	GDG	BDG	6.00	6.67	7.37	10	10.3	145.7	800
SMCJ6.5	GDH	BDH	6.50	7.22	8.82	10	12.3	122.0	500
SMCJ6.5A	GDK	BDK	6.50	7.22	7.98	10	11.2	134.0	500
SMCJ7.0	GDL	BDL	7.00	7.78	9.51	10	13.3	112.8	200
SMCJ7.0A	GDM	BDM	7.00	7.78	8.60	10	12.0	125.0	200
SMCJ7.5	GDN	BDN	7.50	8.33	10.20	1	14.3	104.9	100
SMCJ7.5A	GDP	BDP	7.50	8.33	9.21	1	12.9	116.3	100
SMCJ8.0	GDQ	BDQ	8.00	8.89	10.90	1	15.0	100.0	50
SMCJ8.0A	GDR	BDR	8.00	8.89	9.83	1	13.6	110.3	50
SMCJ8.5	GDS	BDS	8.50	9.44	11.50	1	15.9	94.4	20
SMCJ8.5A	GDT	BDT	8.50	9.44	10.40	1	14.4	104.2	20
SMCJ9.0	GDU	BDU	9.00	10.00	12.20	1	16.9	88.7	10
SMCJ9.0A	GDV	BDV	9.00	10.00	11.10	1	15.4	97.4	10
SMCJ10	GDW	BDW	10.00	11.10	13.60	1	18.8	79.8	5
SMCJ10A	GDX	BDX	10.00	11.10	12.30	1	17.0	88.3	5
SMCJ11	GDY	BDY	11.00	12.20	14.90	1	20.1	74.7	5
SMCJ11A	GDZ	BDZ	11.00	12.20	13.50	1	18.2	82.5	5
SMCJ12	GED	BED	12.00	13.30	16.30	1	22.0	68.2	5
SMCJ12A	GEE	BEE	12.00	13.30	14.70	1	19.9	75.4	5
SMCJ13	GEF	BEF	13.00	14.40	17.60	1	23.8	63.0	5
SMCJ13A	GEG	BEG	13.00	14.40	15.90	1	21.5	69.8	5
SMCJ14	GEH	BEH	14.00	15.60	19.10	1	25.8	58.2	5
SMCJ14A	GEK	BEK	14.00	15.60	17.20	1	23.2	64.7	5
SMCJ15	GEL	BEL	15.00	16.70	20.40	1	26.9	55.8	5
SMCJ15A	GEM	BEM	15.00	16.70	18.50	1	24.4	61.5	5
SMCJ16	GEN	BEN	16.00	17.80	21.80	1	28.8	52.1	5
SMCJ16A	GEP	BEP	16.00	17.80	19.70	1	26.0	57.7	5
SMCJ17	GEQ	BEQ	17.00	18.90	23.10	1	30.5	49.2	5
SMCJ17A	GER	BER	17.00	18.90	20.90	1	27.6	54.4	5
SMCJ18	GES	BES	18.00	20.00	24.40	1	32.2	46.6	5
SMCJ18A	GET	BET	18.00	20.00	22.10	1	29.2	51.4	5
SMCJ20	GEU	BEU	20.00	22.20	27.10	1	35.8	41.9	5
SMCJ20A	GEV	BEV	20.00	22.20	24.50	1	32.4	46.3	5
SMCJ22	GEW	BEW	22.00	24.40	29.80	1	39.4	38.1	5
SMCJ22A	GEX	BEX	22.00	24.40	26.90	1	35.5	42.3	5
SMCJ24	GEY	BEY	24.00	26.70	32.60	1	43.0	34.9	5
SMCJ24A	GEZ	BEZ	24.00	26.70	29.50	1	38.9	38.6	5
SMCJ26	GFD	BFD	26.00	28.90	35.30	1	46.6	32.2	5
SMCJ26A	GFE	BFE	26.00	28.90	31.90	1	42.1	35.7	5
SMCJ28	GFF	BFF	28.00	31.10	38.00	1	50.1	30.0	5
SMCJ28A	GFG	BFG	28.00	31.10	34.40	1	45.4	33.1	5
SMCJ30	GFH	BFH	30.00	33.30	40.70	1	53.5	28.1	5
SMCJ30A	GFK	BFK	30.00	33.30	36.80	1	48.4	31.0	5
SMCJ33	GFL	BFL	33.00	36.70	44.90	1	59.0	25.5	5
SMCJ33A	GFM	BFM	33.00	36.70	40.60	1	53.3	28.2	5

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SMCJ36	GFN	BFN	36.00	40.00	48.90	1	64.3	23.4	5
SMCJ36A	GFP	BFP	36.00	40.00	44.20	1	58.1	25.9	5
SMCJ40	GFQ	BFQ	40.00	44.40	54.30	1	71.4	21.0	5
SMCJ40A	GFR	BFR	40.00	44.40	49.10	1	64.5	23.3	5
SMCJ43	GFS	BFR	43.00	47.80	58.40	1	76.7	19.60	5
SMCJ43A	GFT	BFT	43.00	47.80	52.80	1	69.4	21.7	5
SMCJ45	GFU	BFU	45.00	50.00	61.10	1	80.3	18.7	5
SMCJ45A	GFV	BFV	45.00	50.00	55.30	1	72.7	20.6	5
SMCJ48	GFW	BFW	48.00	53.30	65.20	1	85.5	17.6	5
SMCJ48A	GFX	BFX	48.00	53.30	58.90	1	77.4	19.4	5
SMCJ51	GFY	BFY	51.00	56.70	69.30	1	91.1	16.5	5
SMCJ51A	GFZ	BFZ	51.00	56.70	62.70	1	82.4	18.2	5
SMCJ54A	GGD	BGD	54.00	60.00	73.30	1	96.3	15.6	5
SMCJ54A	GGE	BGE	54.00	60.00	66.30	1	87.1	17.3	5
SMCJ58	GGF	BGF	58.00	64.40	78.70	1	103.0	14.6	5
SMCJ58A	GGG	BGG	58.00	64.40	71.20	1	93.6	16.1	5
SMCJ60	GGH	BGH	60.00	66.70	81.50	1	107.0	14.0	5
SMCJ60A	GGK	BGK	60.00	66.70	73.70	1	96.8	15.5	5
SMCJ64	GGL	BGL	64.00	71.10	86.90	1	114.0	13.2	5
SMCJ64A	GGM	BGM	64.00	71.10	78.60	1	103.0	14.6	5
SMCJ70	GGN	BGN	70.00	77.80	95.10	1	125.0	12.0	5
SMCJ70A	GGP	BGP	70.00	77.80	86.00	1	113.0	13.3	5
SMCJ75	GGQ	BGQ	75.00	83.30	102.00	1	134.0	11.2	5
SMCJ75A	GGR	BGR	75.00	83.30	92.10	1	121.0	12.4	5
SMCJ78	GGS	BGS	78.00	86.70	106.00	1	139.0	10.8	5
SMCJ78A	GGT	BGT	78.00	86.70	95.80	1	126.0	11.9	5
SMCJ85	GGU	BGU	85.00	94.40	115.00	1	151.0	10.0	5
SMCJ85A	GGV	BGV	85.00	94.40	104.00	1	137.0	11.0	5
SMCJ90	GGW	BGW	90.00	100.00	122.00	1	160	9.4	5
SMCJ90A	GGX	BGX	90.00	100.00	111.00	1	146	10.3	5
SMCJ100	GGY	BGY	100.00	111.00	136.00	1	179	8.4	5
SMCJ100A	GGZ	BGZ	100.00	111.00	123.00	1	162	9.3	5
SMCJ110	GHD	BHD	110.00	122.00	149.00	1	196	7.7	5
SMCJ110A	GHE	BHE	110.00	122.00	135.00	1	177	8.5	5
SMCJ120	GHF	BHF	120.00	133.00	163.00	1	214.0	7.0	5
SMCJ120A	GHG	BHG	120.00	133.00	147.00	1	193	7.8	5
SMCJ130	GHH	BHH	130.00	144.00	176.00	1	230	6.6	5
SMCJ130A	GHK	BHK	130.00	144.00	159.00	1	209	7.2	5
SMCJ150	GHL	BHL	150.00	167.00	204.00	1	268	5.6	5
SMCJ150A	GHM	BHM	150.00	167.00	185.00	1	243	6.2	5
SMCJ160	GHN	BHN	160.00	178.00	218.00	1	287	5.3	5
SMCJ160A	GHP	BHP	160.00	178.00	197.00	1	259	5.8	5
SMCJ170	GHQ	BHQ	170.00	189.00	231.00	1	304.0	5.0	5
SMCJ170A	GHR	BHR	170.00	189.00	209.00	1	275	5.5	5

For Bidirectional type having Vrwm of 10volts and less, the IR limit is double.