

MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA., USA 92253 Tel : 760-564-8656 • Fax : 760-564-2414
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

1.5SMC SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE - 6.8 TO 550 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):0.05%
- Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- Typical IR less than 1mA above 10V
- High temperature soldering: 250°C/10 seconds at terminals

MECHANICAL DATA

Case: JEDEC DO214AB. Molded plastic over glass passivated junction

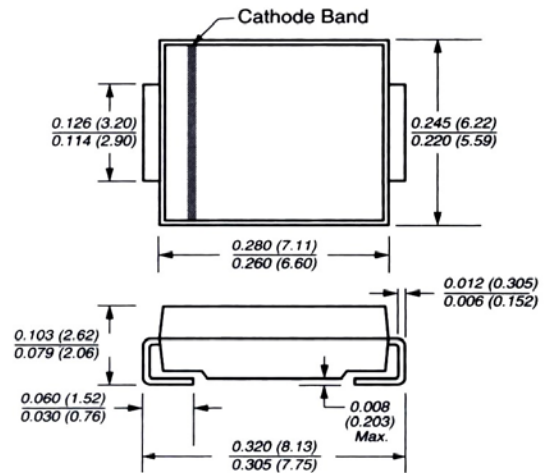
Terminal: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes positive end (cathode) except Bidirectional

Standard Packaging: 16mm tape(EIA STD RS-481)

Weight: 0.007ounce, 0.21gram

DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

DEVICES FOR BIPOLAR APPLICATION

For Bidirectional use Suffix CA for types 1.5SMC6.8CA thru types 1.5SMC550CA

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 10/1000μs waveform (Note 1,FIG.1)	P _{PPM}	Minimum 1500	Watts
Peak Pulse Current of on 10/1000μs waveform (Note 1,FIG.3)	I _{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note 3)	I _{FSM}	200	Amps
Operating junction and Storage Temperature Range	T _J , T _{STG}	-55 to + 150	°C

Notes :

- 1.Non-repetitive current pulse , per Fig. 3 and derated above,T= 25°C per Fig. 2 .
- 2.Mounted on 8.0mm² Copper Pads to each terminal
- 3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

Certified RoHS Compliant

UL File # E223026

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1.5SMC SERIES RATINGS AND CHARACTERISTIC CURVES

Ratings and

Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating Curve

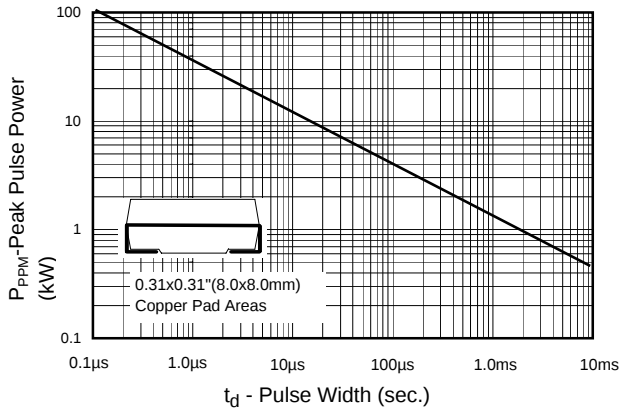


Fig. 2 - Pulse Derating

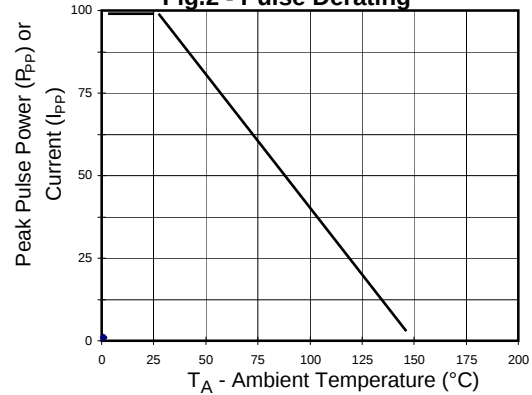


Fig. 3 - Pulse Waveform

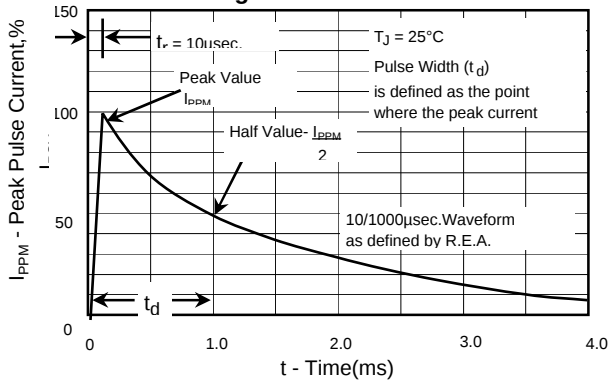


Fig. 4 - Typical Junction Capacitance
Uni-Directional

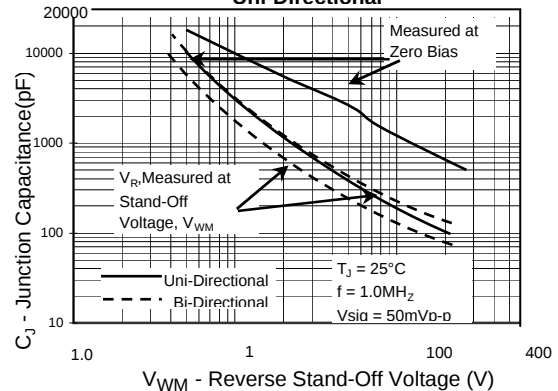


Fig. 5 - Typ. Transient Thermal Impedance

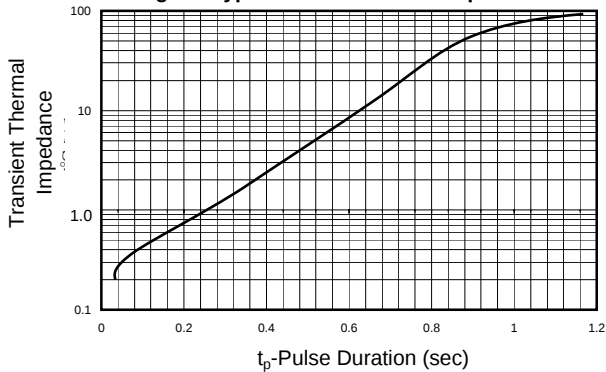
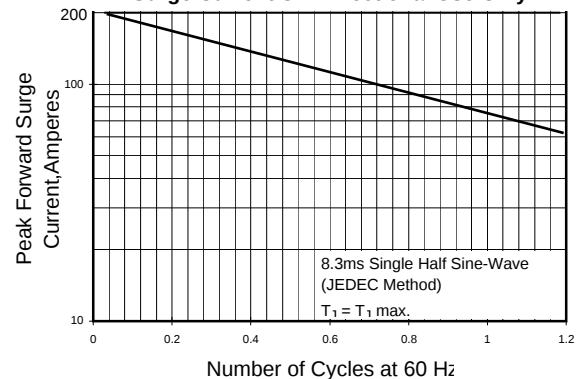


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only



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1500 Watts Peak Power

1.5SMC PART NUMBER			MARKING CODE		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)	MAXIMUM CLAMPING VOLTAGE @I_{pp} V_c(V)	PEAK PULSE CURRENT I_{pp} (A)	REVERSE LEAKAGE @ VRWM IR(mA)
			UNI- POLAR	BI- POLAR							
1.5SMC	6.8A	6.8CA	6V8A	6V8C	5.80	6.45	7.14	10	10.5	144.8	1000
1.5SMC	7.5A	7.5CA	7V5A	7V5C	6.40	7.13	7.88	10	11.3	134.5	500
1.5SMC	8.2A	8.2CA	8V2A	8V2C	7.02	7.79	8.61	10	12.1	125.6	200
1.5SMC	9.1A	9.1CA	9V1A	9V1C	7.78	8.65	9.50	1	13.4	113.4	50
1.5SMC	10A	10CA	10A	10C	8.55	9.50	10.50	1	14.5	104.8	10
1.5SMC	11A	11CA	11A	11C	9.40	10.50	11.60	1	15.6	97.4	5
1.5SMC	12A	12CA	12A	12C	10.20	11.40	12.60	1	16.7	91.0	5
1.5SMC	13A	13CA	13A	13C	11.10	12.40	13.70	1	18.2	83.5	5
1.5SMC	15A	15CA	15A	15C	12.80	14.30	15.80	1	21.2	71.7	5
1.5SMC	16A	16CA	16A	16C	13.60	15.20	16.80	1	22.5	67.6	5
1.5SMC	18A	18CA	18A	18C	15.30	17.10	18.90	1	25.2	60.3	5
1.5SMC	20A	20CA	20A	20C	17.10	19.00	21.00	1	27.7	54.9	5
1.5SMC	22A	22CA	22A	22C	18.80	20.90	23.10	1	30.6	49.7	5
1.5SMC	24A	24CA	24A	24C	20.50	22.80	25.20	1	33.2	45.8	5
1.5SMC	27A	27CA	27A	27C	23.10	25.70	28.40	1	37.5	40.5	5
1.5SMC	30A	30CA	30A	30C	25.60	28.50	31.50	1	41.4	36.7	5
1.5SMC	33A	33CA	33A	33C	28.20	31.40	34.70	1	45.7	33.3	5
1.5SMC	36A	36CA	36A	36C	30.80	34.20	37.80	1	49.9	30.5	5
1.5SMC	39A	39CA	39A	39C	33.30	37.10	41.00	1	53.9	28.2	5
1.5SMC	43A	43CA	43A	43C	36.80	40.90	45.20	1	59.3	25.6	5
1.5SMC	47A	47CA	47A	47C	40.20	44.70	49.40	1	64.8	23.5	5
1.5SMC	51A	51CA	51A	51C	43.60	48.50	53.60	1	70.1	21.7	5
1.5SMC	56A	56CA	56A	56C	47.80	53.20	58.80	1	77.0	19.7	5
1.5SMC	62A	62CA	62A	62C	53.00	58.90	65.10	1	85.0	17.9	5
1.5SMC	68A	68CA	68A	68C	58.10	64.60	71.40	1	92.0	16.5	5
1.5SMC	75A	75CA	75A	75C	64.10	71.30	78.80	1	103.0	14.8	5
1.5SMC	82A	82CA	82A	82C	70.10	77.90	86.10	1	113.0	13.5	5
1.5SMC	91A	91CA	91A	91C	77.80	86.50	95.50	1	125.0	12.2	5
1.5SMC	100A	100CA	100A	100C	85.50	95.00	105.00	1	137.0	11.1	5
1.5SMC	110A	110CA	110A	110C	94.00	105.00	116.00	1	152.0	10.0	5
1.5SMC	120A	120CA	120A	120C	102.00	114.00	126.00	1	165.0	9.2	5
1.5SMC	130A	130CA	130A	130C	111.00	124.00	137.00	1	179.0	8.5	5
1.5SMC	150A	150CA	150A	150C	128.00	143.00	158.00	1	207.0	7.3	5
1.5SMC	160A	160CA	160A	160C	136.00	152.00	168.00	1	219.0	6.9	5
1.5SMC	170A	170CA	170A	170C	145.00	162.00	179.00	1	234.0	6.5	5
1.5SMC	180A	180CA	180A	180C	154.00	171.00	189.00	1	246.0	6.2	5
1.5SMC	200A	200CA	200A	200C	171.00	190.00	210.00	1	274.0	5.5	5
1.5SMC	220A	220CA	220A	220C	185.00	209.00	231.00	1	328.0	4.6	5
1.5SMC	250A	250CA	250A	250C	214.00	237.00	263.00	1	344.0	4.4	5
1.5SMC	300A	300CA	300A	300C	256.00	285.00	315.00	1	414.0	3.7	5
1.5SMC	350A	350CA	350A	350C	300.00	332.00	368.00	1	482.0	3.2	5
1.5SMC	400A	400CA	400A	400C	342.00	380.00	420.00	1	548.0	2.8	5
1.5SMC	440A	440CA	440A	440C	376.00	418.00	462.00	1	602.0	2.5	5
1.5SMC	480A	480CA	480A	480C	408.00	456.00	504.00	1	658.0	2.3	5
1.5SMC	510A	510CA	510A	510C	434.00	485.00	535.00	1	698.0	2.1	5
1.5SMC	530A	530CA	530A	530C	450.00	503.50	556.50	1	725.0	2.1	5
1.5SMC	540A	540CA	540A	540C	459.00	513.00	567.00	1	740.0	2.0	5
1.5SMC	550A	550CA	550A	550C	467.00	522.50	577.50	1	760.0	2.0	5

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

Certified RoHS Compliant

