

MDE Semiconductor, Inc.

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1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

1.5SMC SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

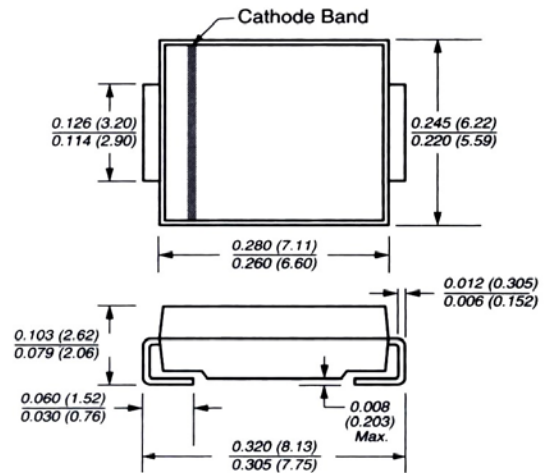
VOLTAGE - 6.8 TO 550 Volts

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

DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

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

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

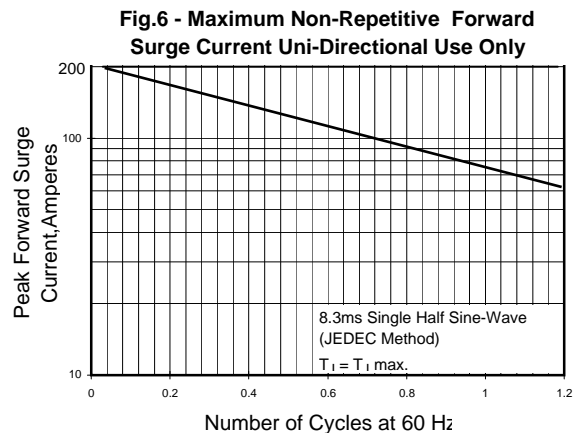
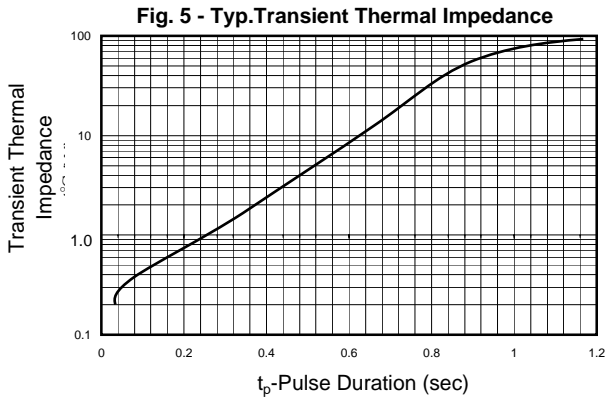
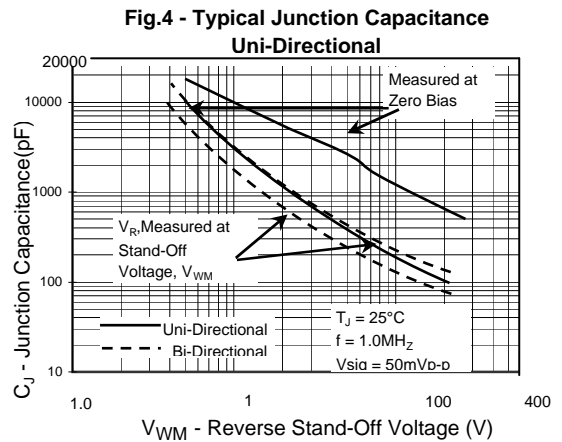
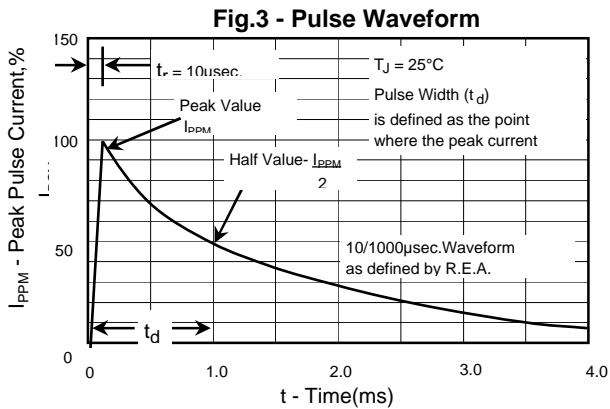
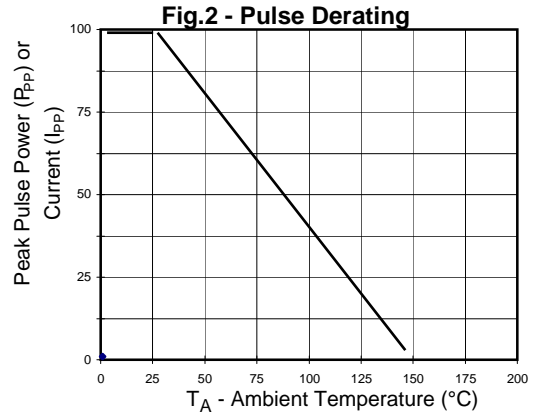
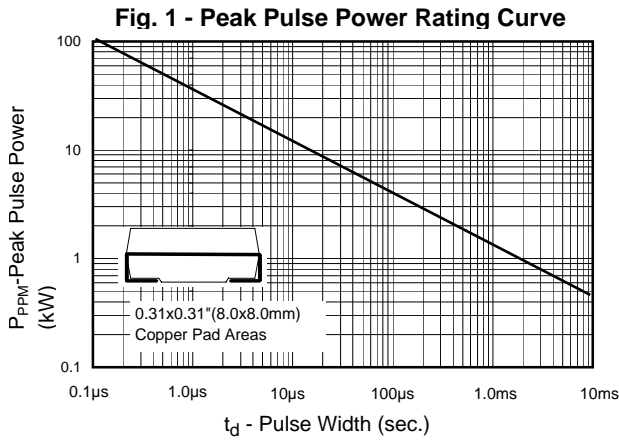
UL File # E223026

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1.5SMC SERIES RATINGS AND CHARACTERISTIC CURVES

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



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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

