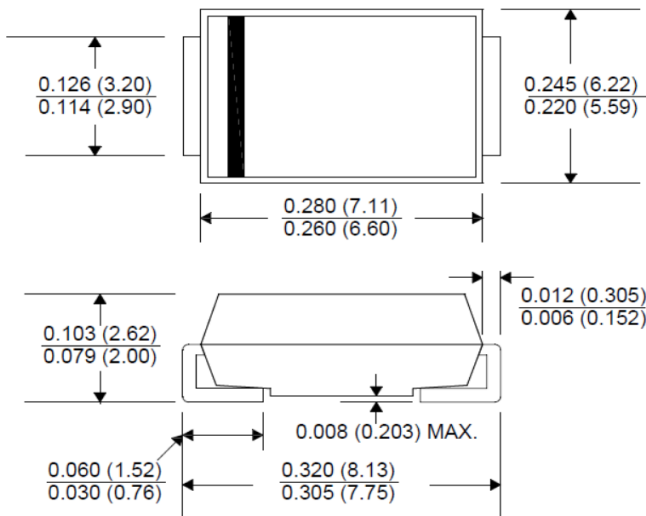



DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

| Agency | Agency File Number |
|-----------------------------------------------------------------------------------|--------------------|
|  | E521119 |

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------------------------|
| V _{RWM} | 5.8V to 495V |
| V _{BR} | 6.45V to 577.5V |
| P _{PPM} | 1500W |
| T _{J max} | 150°C |
| Polarity | Uni-directional & Bi-directional |
| Package | DO-214AB |

FEATURES

- For surface mounted applications in order to optimize board space
- Typical maximum temperature coefficient $\Delta V_{BR} = 0.1\% \times V_{BR} @ 25^\circ C \times \Delta T$
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Repetition Rate (duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to BV
- Meet MSL1 Level, per J-STD-020, LF maximum peak of 260 °C
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte Tin Lead-free plated



MECHANICAL DATA

Case: JEDEC DO-214AB. Molded plastic

Terminal: Solderable per MIL-STD-750, Method 2026

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

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 (25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---------------------------------------------------------------------|---------------------------------|----------------|-------|
| Peak Pulse Power Dissipation on 10/1000µs waveform (Note 1, 2) | P _{PPM} | 1500 | Watts |
| Peak Pulse Current of on 10/1000µs waveform (Note 1) | I _{PPM} | See Next Table | Amps |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2, 3) | I _{FSM} | 200 | Amps |
| Operating junction and Storage Temperature Range | T _J T _{STG} | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Lead | R _{θJL} | 15 | °C/W |
| Typical Thermal Resistance Junction to Ambient | R _{θJA} | 75 | °C/W |

Note

- (1) Non-repetitive current pulse above T_A = 25 °C
- (2) Mounted on 8.0mm x 8.0mm Copper Pads to each terminal
- (3) 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum

ELECTRICAL CHARACTERISTICS

| PART NUMBER | | MARKING CODE | | TEST CURRENT IT (mA) | BREAKDOWN VOLTAGE VBR(V) @IT | | REVERSE STAND-OFF VOLTAGE V _{RWM} (V) | MAXIMUM CLAMPING VOLTAGE @I _{pp} V _c (V) | MAXIMUM PEAK PULSE CURRENT I _{pp} (A) | MAXIMUM REVERSE LEAKAGE @ V _{RWM} I _r (µA) |
|-------------|-------------|--------------|------|----------------------|------------------------------|--------|------------------------------------------------|--------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------|
| UNI- POLAR | BI-POLAR | UNI | BI | | MIN | MAX | | | | |
| 1.5SMC6.8A | 1.5SMC6.8CA | 6V8A | 6V8C | 10 | 6.45 | 7.14 | 5.8 | 10.5 | 144.8 | 1000.0 |
| 1.5SMC7.5A | 1.5SMC7.5CA | 7V5A | 7V5C | 10 | 7.13 | 7.88 | 6.4 | 11.3 | 134.5 | 500.0 |
| 1.5SMC8.2A | 1.5SMC8.2CA | 8V2A | 8V2C | 10 | 7.79 | 8.61 | 7.0 | 12.1 | 125.6 | 200.0 |
| 1.5SMC9.1A | 1.5SMC9.1CA | 9V1A | 9V1C | 1 | 8.65 | 9.50 | 7.8 | 13.4 | 113.4 | 50.0 |
| 1.5SMC10A | 1.5SMC10CA | 10A | 10C | 1 | 9.50 | 10.50 | 8.6 | 14.5 | 104.8 | 10.0 |
| 1.5SMC11A | 1.5SMC11CA | 11A | 11C | 1 | 10.50 | 11.60 | 9.4 | 15.6 | 97.4 | 5.0 |
| 1.5SMC12A | 1.5SMC12CA | 12A | 12C | 1 | 11.40 | 12.60 | 10.2 | 16.7 | 91.0 | 5.0 |
| 1.5SMC13A | 1.5SMC13CA | 13A | 13C | 1 | 12.40 | 13.70 | 11.1 | 18.2 | 83.5 | 1.0 |
| 1.5SMC15A | 1.5SMC15CA | 15A | 15C | 1 | 14.30 | 15.80 | 12.8 | 21.2 | 71.7 | 1.0 |
| 1.5SMC16A | 1.5SMC16CA | 16A | 16C | 1 | 15.20 | 16.80 | 13.6 | 22.5 | 67.6 | 1.0 |
| 1.5SMC18A | 1.5SMC18CA | 18A | 18C | 1 | 17.10 | 18.90 | 15.3 | 25.2 | 60.3 | 1.0 |
| 1.5SMC20A | 1.5SMC20CA | 20A | 20C | 1 | 19.00 | 21.00 | 17.1 | 27.7 | 54.9 | 1.0 |
| 1.5SMC22A | 1.5SMC22CA | 22A | 22C | 1 | 20.90 | 23.10 | 18.8 | 30.6 | 49.7 | 1.0 |
| 1.5SMC24A | 1.5SMC24CA | 24A | 24C | 1 | 22.80 | 25.20 | 20.5 | 33.2 | 45.8 | 1.0 |
| 1.5SMC27A | 1.5SMC27CA | 27A | 27C | 1 | 25.70 | 28.40 | 23.1 | 37.5 | 40.5 | 1.0 |
| 1.5SMC30A | 1.5SMC30CA | 30A | 30C | 1 | 28.50 | 31.50 | 25.6 | 41.4 | 36.7 | 1.0 |
| 1.5SMC33A | 1.5SMC33CA | 33A | 33C | 1 | 31.40 | 34.70 | 28.2 | 45.7 | 33.3 | 1.0 |
| 1.5SMC36A | 1.5SMC36CA | 36A | 36C | 1 | 34.20 | 37.80 | 30.8 | 49.9 | 30.5 | 1.0 |
| 1.5SMC39A | 1.5SMC39CA | 39A | 39C | 1 | 37.10 | 41.00 | 33.3 | 53.9 | 28.2 | 1.0 |
| 1.5SMC43A | 1.5SMC43CA | 43A | 43C | 1 | 40.90 | 45.20 | 36.8 | 59.3 | 25.6 | 1.0 |
| 1.5SMC47A | 1.5SMC47CA | 47A | 47C | 1 | 44.70 | 49.40 | 40.2 | 64.8 | 23.5 | 1.0 |
| 1.5SMC51A | 1.5SMC51CA | 51A | 51C | 1 | 48.50 | 53.60 | 43.6 | 70.1 | 21.7 | 1.0 |
| 1.5SMC56A | 1.5SMC56CA | 56A | 56C | 1 | 53.20 | 58.80 | 47.8 | 77.0 | 19.7 | 1.0 |
| 1.5SMC62A | 1.5SMC62CA | 62A | 62C | 1 | 58.90 | 65.10 | 53.0 | 85.0 | 17.9 | 1.0 |
| 1.5SMC68A | 1.5SMC68CA | 68A | 68C | 1 | 64.60 | 71.40 | 58.1 | 92.0 | 16.5 | 1.0 |
| 1.5SMC75A | 1.5SMC75CA | 75A | 75C | 1 | 71.30 | 78.80 | 64.1 | 103.0 | 14.8 | 1.0 |
| 1.5SMC82A | 1.5SMC82CA | 82A | 82C | 1 | 77.90 | 86.10 | 70.1 | 113.0 | 13.5 | 1.0 |
| 1.5SMC91A | 1.5SMC91CA | 91A | 91C | 1 | 86.50 | 95.50 | 77.8 | 125.0 | 12.2 | 1.0 |
| 1.5SMC100A | 1.5SMC100CA | 100A | 100C | 1 | 95.00 | 105.00 | 85.5 | 137.0 | 11.1 | 1.0 |
| 1.5SMC110A | 1.5SMC110CA | 110A | 110C | 1 | 105.00 | 116.00 | 94.0 | 152.0 | 10.0 | 1.0 |
| 1.5SMC120A | 1.5SMC120CA | 120A | 120C | 1 | 114.00 | 126.00 | 102.0 | 165.0 | 9.2 | 1.0 |
| 1.5SMC130A | 1.5SMC130CA | 130A | 130C | 1 | 124.00 | 137.00 | 111.0 | 179.0 | 8.5 | 1.0 |
| 1.5SMC150A | 1.5SMC150CA | 150A | 150C | 1 | 143.00 | 158.00 | 128.0 | 207.0 | 7.3 | 1.0 |
| 1.5SMC160A | 1.5SMC160CA | 160A | 160C | 1 | 152.00 | 168.00 | 136.0 | 219.0 | 6.9 | 1.0 |
| 1.5SMC170A | 1.5SMC170CA | 170A | 170C | 1 | 162.00 | 179.00 | 145.0 | 234.0 | 6.5 | 1.0 |
| 1.5SMC180A | 1.5SMC180CA | 180A | 180C | 1 | 171.00 | 189.00 | 154.0 | 246.0 | 6.2 | 1.0 |
| 1.5SMC200A | 1.5SMC200CA | 200A | 200C | 1 | 190.00 | 210.00 | 171.0 | 274.0 | 5.5 | 1.0 |
| 1.5SMC220A | 1.5SMC220CA | 220A | 220C | 1 | 209.00 | 231.00 | 185.0 | 328.0 | 4.6 | 1.0 |
| 1.5SMC250A | 1.5SMC250CA | 250A | 250C | 1 | 237.00 | 263.00 | 214.0 | 344.0 | 4.4 | 1.0 |
| 1.5SMC300A | 1.5SMC300CA | 300A | 300C | 1 | 285.00 | 315.00 | 256.0 | 414.0 | 3.7 | 1.0 |
| 1.5SMC350A | 1.5SMC350CA | 350A | 350C | 1 | 332.00 | 368.00 | 300.0 | 482.0 | 3.2 | 1.0 |
| 1.5SMC400A | 1.5SMC400CA | 400A | 400C | 1 | 380.00 | 420.00 | 342.0 | 548.0 | 2.8 | 1.0 |
| 1.5SMC440A | 1.5SMC440CA | 440A | 440C | 1 | 418.00 | 462.00 | 376.0 | 602.0 | 2.5 | 1.0 |
| 1.5SMC480A | 1.5SMC480CA | 480A | 480C | 1 | 456.00 | 504.00 | 408.0 | 658.0 | 2.3 | 1.0 |
| 1.5SMC510A | 1.5SMC510CA | 510A | 510C | 1 | 485.00 | 535.00 | 434.0 | 698.0 | 2.1 | 1.0 |
| 1.5SMC530A | 1.5SMC530CA | 530A | 530C | 1 | 503.50 | 556.50 | 477.0 | 725.0 | 2.1 | 1.0 |
| 1.5SMC540A | 1.5SMC540CA | 540A | 540C | 1 | 513.00 | 567.00 | 486.0 | 740.0 | 2.0 | 1.0 |
| 1.5SMC550A | 1.5SMC550CA | 550A | 550C | 1 | 522.50 | 577.50 | 495.0 | 760.0 | 2.0 | 1.0 |

For bidirectional type having V_{rwm} of 10 volts and less, the IR limit is double

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating



Fig.2 - Pulse Derating Curve



Fig. 3 - Pulse Waveform

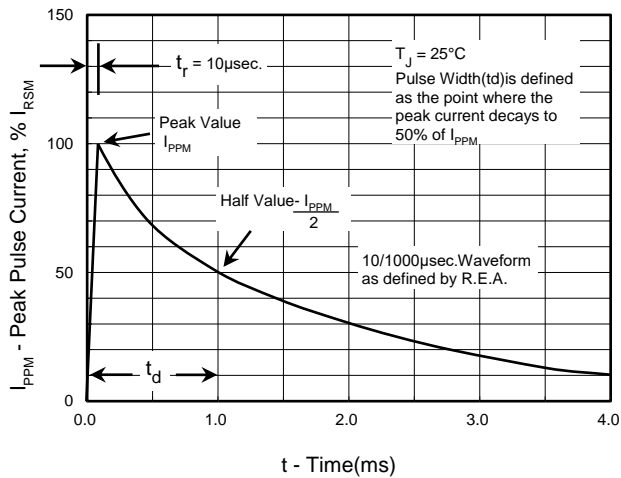


Fig. 4 - Typical Junction Capacitance



Fig. 5 - Steady State Power Derating Curve



Fig.6 - Maximum Non-repetitive Forward Surge current uni-directional only



Ordering Information

| Part Number | Quantity | Packing Option | Component Package | Packing Specification |
|-------------|----------|-----------------------------|-------------------|-----------------------|
| 1.5SMCxxxA | 3000 | Tape & Reel - 16mm/13" tape | DO-214AB | EIA STD RS-481 |



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Note: Green Product means Pb-free, RoHS and Halogens free compliant.

| Part Number | Part Marking |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <p>1.5SMC XXX C A</p> <p>Series V_{BR} VOLTAGE BI-DIRECTIONAL Narrow V_{BR} VOLTAGE TOLERANCE</p> | <p>Cathode Band Logo Marking Code Date Code</p> |

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