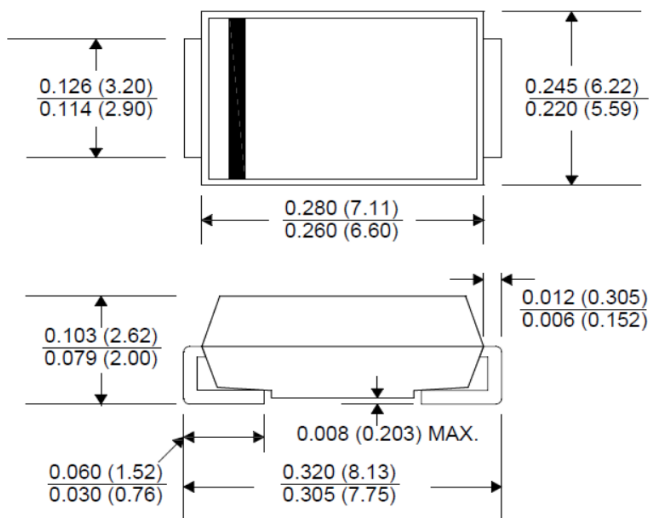



DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

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

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------------------------|
| V _{RWM} | 5.0V to 170V |
| V _{BR} | 6.4V to 209V |
| P _{PPM} | 5000W |
| 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 $\Delta V_{BR} = 0.1\% \times V_{BR} @ 25^\circ\text{C} \times \Delta T$
- 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 5.0SMDJ5.0CA thru types 5.0SMDJ85CA
- 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} | 5000 | 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} | 300 | 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.

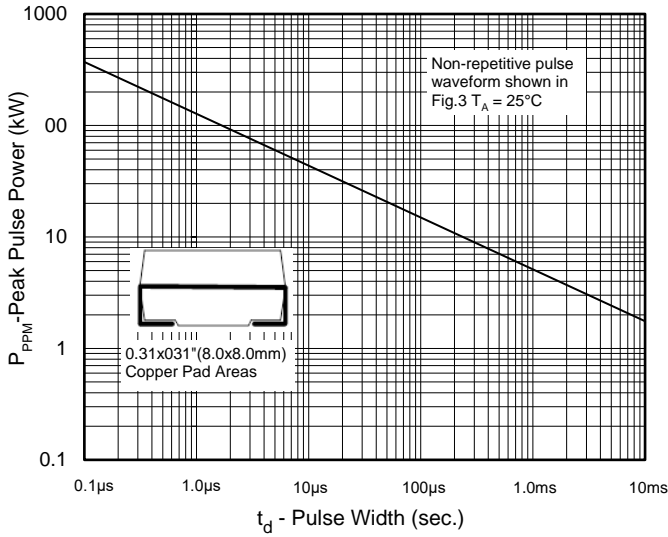
ELECTRICAL CHARACTERISTICS

| PART NUMBER | | MARKING CODE | | TEST CURRENT IT (mA) | BREAKDOWN VOLTAGE VBR(V) @IT | | REVERSE STAND-OFF VOLTAGE VRWM(V) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V) | MAXIMUM PEAK PULSE CURRENT Ipp (A) | MAXIMUM REVERSE LEAKAGE @ VRWM IR(μA) |
|-------------|--------------|--------------|------|----------------------|------------------------------|--------|-----------------------------------|-------------------------------------|------------------------------------|---------------------------------------|
| UNI- POLAR | BI-POLAR | UNI | BI | | MIN | MAX | | | | |
| 5.0SMDJ5.0A | 5.0SMDJ5.0CA | 5RDE | 5DDE | 10 | 6.40 | 7.00 | 5.0 | 9.2 | 543.6 | 1050.0 |
| 5.0SMDJ6.0A | 5.0SMDJ6.0CA | 5RDG | 5DDG | 10 | 6.67 | 7.37 | 6.0 | 10.3 | 485.5 | 1050.0 |
| 5.0SMDJ6.5A | 5.0SMDJ6.5CA | 5RDK | 5DDK | 10 | 7.22 | 7.98 | 6.5 | 11.2 | 446.5 | 750.0 |
| 5.0SMDJ7.0A | 5.0SMDJ7.0CA | 5PDM | 5DDM | 10 | 7.78 | 8.60 | 7.0 | 12.0 | 416.8 | 300.0 |
| 5.0SMDJ7.5A | 5.0SMDJ7.5CA | 5PDP | 5DDP | 1 | 8.33 | 9.21 | 7.5 | 12.9 | 387.7 | 150.0 |
| 5.0SMDJ8.0A | 5.0SMDJ8.0CA | 5PDR | 5DDR | 1 | 8.89 | 9.83 | 8.0 | 13.6 | 367.7 | 70.0 |
| 5.0SMDJ8.5A | 5.0SMDJ8.5CA | 5PDT | 5DDT | 1 | 9.44 | 10.40 | 8.5 | 14.4 | 347.3 | 30.0 |
| 5.0SMDJ9.0A | 5.0SMDJ9.0CA | 5PDV | 5DDV | 1 | 10.00 | 11.10 | 9.0 | 15.4 | 324.8 | 12.0 |
| 5.0SMDJ10A | 5.0SMDJ10CA | 5PDX | 5DDX | 1 | 11.10 | 12.30 | 10.0 | 17.0 | 294.2 | 6.0 |
| 5.0SMDJ11A | 5.0SMDJ11CA | 5PDZ | 5DDZ | 1 | 12.20 | 13.50 | 11.0 | 18.2 | 274.8 | 2.0 |
| 5.0SMDJ12A | 5.0SMDJ12CA | 5PEP | 5BEP | 1 | 13.30 | 14.70 | 12.0 | 19.9 | 252.0 | 2.0 |
| 5.0SMDJ13A | 5.0SMDJ13CA | 5PEQ | 5BEQ | 1 | 14.40 | 15.90 | 13.0 | 21.5 | 233.0 | 2.0 |
| 5.0SMDJ14A | 5.0SMDJ14CA | 5PER | 5BER | 1 | 15.60 | 17.20 | 14.0 | 23.2 | 216.0 | 2.0 |
| 5.0SMDJ15A | 5.0SMDJ15CA | 5PES | 5BES | 1 | 16.70 | 18.50 | 15.0 | 24.4 | 205.0 | 2.0 |
| 5.0SMDJ16A | 5.0SMDJ16CA | 5PET | 5BET | 1 | 17.80 | 19.70 | 16.0 | 26.0 | 193.0 | 2.0 |
| 5.0SMDJ17A | 5.0SMDJ17CA | 5PEU | 5BEU | 1 | 18.90 | 20.90 | 17.0 | 27.6 | 181.5 | 2.0 |
| 5.0SMDJ18A | 5.0SMDJ18CA | 5PEV | 5BEV | 1 | 20.00 | 22.10 | 18.0 | 29.2 | 172.0 | 2.0 |
| 5.0SMDJ20A | 5.0SMDJ20CA | 5PEW | 5BEW | 1 | 22.20 | 24.50 | 20.0 | 32.4 | 159.0 | 2.0 |
| 5.0SMDJ22A | 5.0SMDJ22CA | 5PEX | 5BEX | 1 | 24.40 | 26.90 | 22.0 | 35.5 | 145.1 | 2.0 |
| 5.0SMDJ24A | 5.0SMDJ24CA | 5PEZ | 5BEZ | 1 | 26.70 | 29.50 | 24.0 | 38.9 | 132.4 | 2.0 |
| 5.0SMDJ26A | 5.0SMDJ26CA | 5PFE | 5BFE | 1 | 28.90 | 31.90 | 26.0 | 42.1 | 122.3 | 2.0 |
| 5.0SMDJ28A | 5.0SMDJ28CA | 5PFG | 5BFG | 1 | 31.10 | 34.40 | 28.0 | 45.4 | 113.4 | 2.0 |
| 5.0SMDJ30A | 5.0SMDJ30CA | 5PFK | 5BFK | 1 | 33.30 | 36.80 | 30.0 | 48.4 | 106.4 | 2.0 |
| 5.0SMDJ33A | 5.0SMDJ33CA | 5PFM | 5BFM | 1 | 36.70 | 40.60 | 33.0 | 53.3 | 96.6 | 2.0 |
| 5.0SMDJ36A | 5.0SMDJ36CA | 5PFP | 5BFP | 1 | 40.00 | 44.20 | 36.0 | 58.1 | 88.6 | 2.0 |
| 5.0SMDJ40A | 5.0SMDJ40CA | 5PFR | 5BFR | 1 | 44.40 | 49.10 | 40.0 | 64.5 | 79.8 | 2.0 |
| 5.0SMDJ43A | 5.0SMDJ43CA | 5PFT | 5BFT | 1 | 47.80 | 52.80 | 43.0 | 69.4 | 74.2 | 2.0 |
| 5.0SMDJ45A | 5.0SMDJ45CA | 5PFV | 5BFV | 1 | 50.00 | 55.30 | 45.0 | 72.7 | 70.8 | 2.0 |
| 5.0SMDJ48A | 5.0SMDJ48CA | 5PFX | 5BFX | 1 | 53.30 | 58.90 | 48.0 | 77.4 | 66.5 | 2.0 |
| 5.0SMDJ51A | 5.0SMDJ51CA | 5PFZ | 5BFZ | 1 | 56.70 | 62.70 | 51.0 | 82.4 | 62.5 | 2.0 |
| 5.0SMDJ54A | 5.0SMDJ54CA | 5RGE | 5BGE | 1 | 60.00 | 66.30 | 54.0 | 87.1 | 59.1 | 2.0 |
| 5.0SMDJ58A | 5.0SMDJ58CA | 5PGG | 5BGG | 1 | 64.40 | 71.20 | 58.0 | 93.6 | 55.0 | 2.0 |
| 5.0SMDJ60A | 5.0SMDJ60CA | 5PGK | 5BGK | 1 | 66.70 | 73.70 | 60.0 | 96.8 | 53.2 | 2.0 |
| 5.0SMDJ64A | 5.0SMDJ64CA | 5PGM | 5BGM | 1 | 71.10 | 78.60 | 64.0 | 103.0 | 50.0 | 2.0 |
| 5.0SMDJ70A | 5.0SMDJ70CA | 5PGP | 5BGP | 1 | 77.80 | 86.00 | 70.0 | 113.0 | 45.6 | 2.0 |
| 5.0SMDJ75A | 5.0SMDJ75CA | 5PGR | 5BGR | 1 | 83.30 | 92.10 | 75.0 | 121.0 | 42.6 | 2.0 |
| 5.0SMDJ78A | 5.0SMDJ78CA | 5PGT | 5BGT | 1 | 86.70 | 95.80 | 78.0 | 126.0 | 40.9 | 2.0 |
| 5.0SMDJ85A | 5.0SMDJ85CA | 5PGV | 5BGV | 1 | 94.40 | 104.00 | 85.0 | 137.0 | 37.6 | 2.0 |
| 5.0SMDJ90A | - | 5PGX | - | 1 | 100.00 | 111.00 | 90.0 | 146.0 | 35.3 | 2.0 |
| 5.0SMDJ100A | - | 5PGZ | - | 1 | 111.00 | 123.00 | 100.0 | 162.0 | 31.8 | 2.0 |
| 5.0SMDJ110A | - | 5PHE | - | 1 | 122.00 | 135.00 | 110.0 | 177.0 | 29.1 | 2.0 |
| 5.0SMDJ120A | - | 5PHG | - | 1 | 133.00 | 147.00 | 120.0 | 193.0 | 26.7 | 2.0 |
| 5.0SMDJ130A | - | 5PHK | - | 1 | 144.00 | 159.00 | 130.0 | 209.0 | 24.6 | 2.0 |
| 5.0SMDJ150A | - | 5PHM | - | 1 | 167.00 | 185.00 | 150.0 | 243.0 | 21.2 | 2.0 |
| 5.0SMDJ160A | - | 5PHP | - | 1 | 178.00 | 197.00 | 160.0 | 259.0 | 19.9 | 2.0 |
| 5.0SMDJ170A | - | 5PHR | - | 1 | 189.00 | 209.00 | 170.0 | 275.0 | 18.7 | 2.0 |

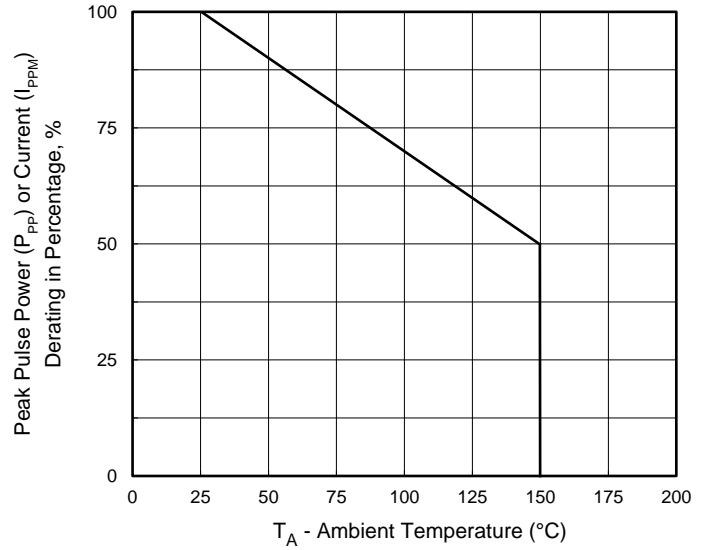
For bidirectional type having Vrwm of 10 volts and less, the IR limit is double

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

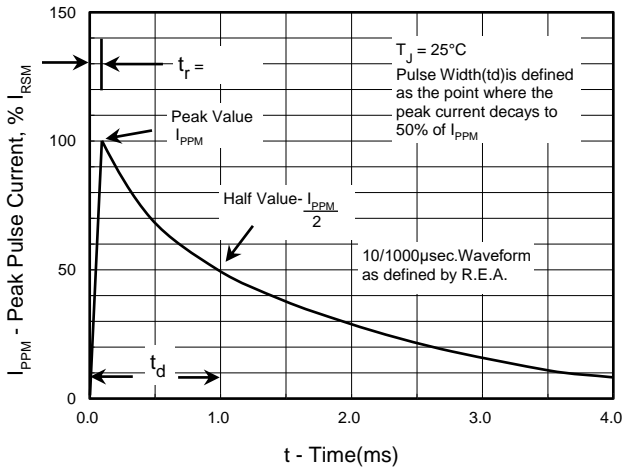
Peak Pulse Power Rating



Pulse Derating Curve



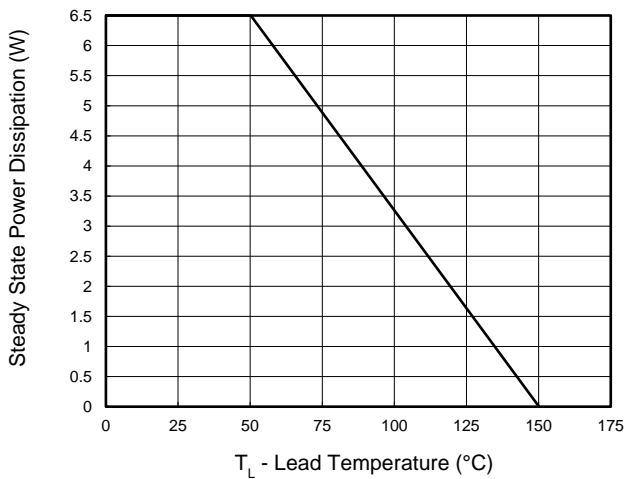
Pulse Waveform



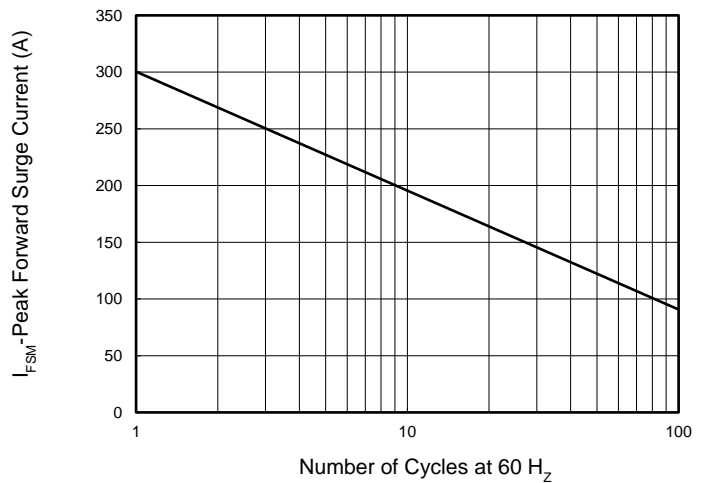
Typical Junction Capacitance



Steady State Power Derating Curve



Maximum Non-repetitive Forward Surge current uni-directional only



Ordering Information

| Part Number | Quantity | Packing Option | Component Package | Packing Specification |
|-------------|----------|-----------------------------|-------------------|-----------------------|
| 5.0SMDJxxxA | 3000 | Tape & Reel - 16mm/13" tape | DO-214AB | EIA STD RS-481 |



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant. Please visit www.aosmd.com/media/AOSGreenPolicy.pdf for additional information.

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

| Part Number | Part Marking |
|-------------------------------|--------------|
| <p>5.0SMDJ XXX C A</p> | |

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