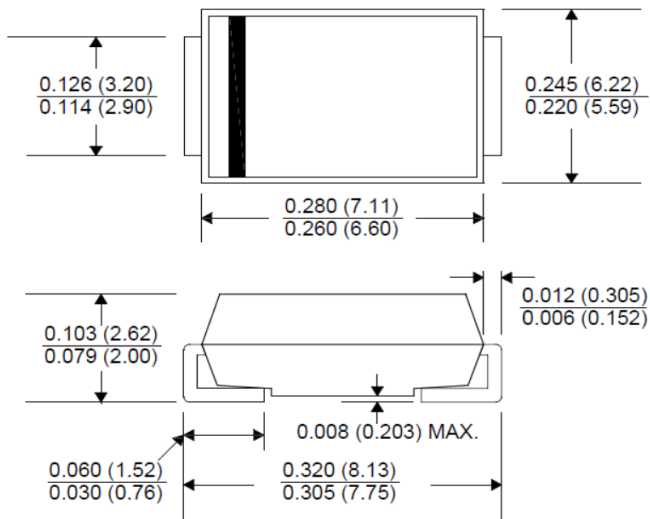


DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

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

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------------------------|
| VRWM | 5.0V to 250V |
| VBR | 6.4V to 309V |
| PPPM | 3000W |
| TJ max | 150°C |
| Polarity | Uni-directional & Bi-directional |
| Package | DO-214AB |

MAXIMUM RATINGS (25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---------|----------------|-------|
| Peak Pulse Power Dissipation on 10/1000µs waveform (Note 1, 2) | PPPM | 3000 | Watts |
| Peak Pulse Current of on 10/1000µs waveform (Note 1) | IPPM | See Next Table | Amps |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2, 3) | IFSM | 300 | Amps |
| Operating junction and Storage Temperature Range | TJ TSTG | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Lead | REJL | 15 | °C/W |
| Typical Thermal Resistance Junction to Ambient | REJA | 75 | °C/W |

Note

- (1) Non-repetitive current pulse above TA = 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.

FEATURES

- For surface mounted applications in order to optimize board space
- Typical maximum temperature coefficient $\Delta VBR = 0.1\% \times VBR @ 25^\circ C \times \Delta T$
- 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 C or CA Suffix for types SMDJ5.0 thru types SMDJ250 (e.g. SMDJ5.0A , SMDJ250CA)
- Electrical characteristics apply in both directions

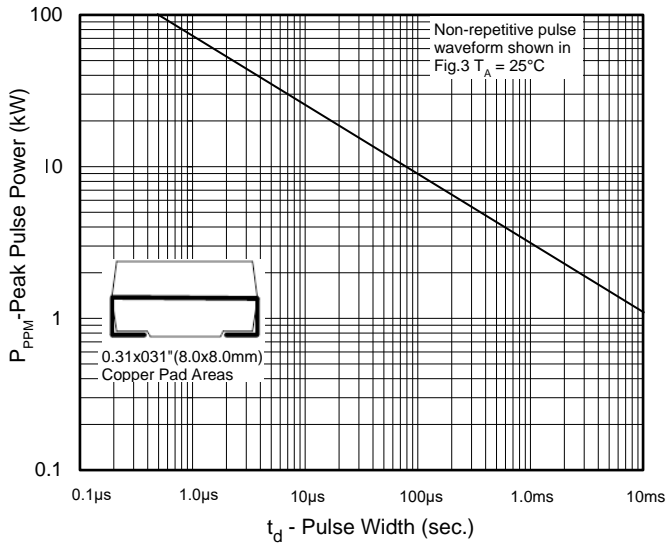
ELECTRICAL CHARACTERISTICS

| 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 | | | | |
| SMDJ5.0A | SMDJ5.0CA | RDE | DDE | 10 | 6.40 | 7.00 | 5.0 | 9.2 | 326.1 | 800.0 |
| SMDJ6.0A | SMDJ6.0CA | RDG | DDG | 10 | 6.67 | 7.37 | 6.0 | 10.3 | 291.3 | 800.0 |
| SMDJ6.5A | SMDJ6.5CA | RDK | DDK | 10 | 7.22 | 7.98 | 6.5 | 11.2 | 267.9 | 500.0 |
| SMDJ7.0A | SMDJ7.0CA | PDM | DDM | 10 | 7.78 | 8.60 | 7.0 | 12.0 | 250.0 | 200.0 |
| SMDJ7.5A | SMDJ7.5CA | PDP | DDP | 1 | 8.33 | 9.21 | 7.5 | 12.9 | 232.6 | 100.0 |
| SMDJ8.0A | SMDJ8.0CA | PDR | DDR | 1 | 8.89 | 9.83 | 8.0 | 13.6 | 220.6 | 50.0 |
| SMDJ8.5A | SMDJ8.5CA | PDT | DDT | 1 | 9.44 | 10.40 | 8.5 | 14.4 | 208.4 | 20.0 |
| SMDJ9.0A | SMDJ9.0CA | PDV | DDV | 1 | 10.00 | 11.10 | 9.0 | 15.4 | 194.9 | 10.0 |
| SMDJ10A | SMDJ10CA | PDX | DDX | 1 | 11.10 | 12.30 | 10.0 | 17.0 | 176.5 | 5.0 |
| SMDJ11A | SMDJ11CA | PDZ | DDZ | 1 | 12.20 | 13.50 | 11.0 | 18.2 | 164.9 | 2.0 |
| SMDJ12A | SMDJ12CA | PEE | DEE | 1 | 13.30 | 14.70 | 12.0 | 19.9 | 150.8 | 2.0 |
| SMDJ13A | SMDJ13CA | PEG | DEG | 1 | 14.40 | 15.90 | 13.0 | 21.5 | 139.6 | 2.0 |
| SMDJ14A | SMDJ14CA | PEK | DEK | 1 | 15.60 | 17.20 | 14.0 | 23.2 | 129.4 | 2.0 |
| SMDJ15A | SMDJ15CA | PEM | DEM | 1 | 16.70 | 18.50 | 15.0 | 24.4 | 123.0 | 2.0 |
| SMDJ16A | SMDJ16CA | PEP | DEP | 1 | 17.80 | 19.70 | 16.0 | 26.0 | 115.4 | 2.0 |
| SMDJ17A | SMDJ17CA | PER | DER | 1 | 18.90 | 20.90 | 17.0 | 27.6 | 108.7 | 2.0 |
| SMDJ18A | SMDJ18CA | PET | DET | 1 | 20.00 | 22.10 | 18.0 | 29.2 | 102.8 | 2.0 |
| SMDJ20A | SMDJ20CA | PEV | DEV | 1 | 22.20 | 24.50 | 20.0 | 32.4 | 92.6 | 2.0 |
| SMDJ21A | SMDJ21CA | PHV | DHV | 1 | 23.31 | 25.73 | 21.0 | 34.1 | 88.0 | 2.0 |
| SMDJ22A | SMDJ22CA | PEX | DEX | 1 | 24.40 | 26.90 | 22.0 | 35.5 | 84.6 | 2.0 |
| SMDJ24A | SMDJ24CA | PEZ | DEZ | 1 | 26.70 | 29.50 | 24.0 | 38.9 | 77.2 | 2.0 |
| SMDJ26A | SMDJ26CA | PFE | DFE | 1 | 28.90 | 31.90 | 26.0 | 42.1 | 71.3 | 2.0 |
| SMDJ28A | SMDJ28CA | PFG | DFG | 1 | 31.10 | 34.40 | 28.0 | 45.4 | 66.1 | 2.0 |
| SMDJ30A | SMDJ30CA | PFK | DFK | 1 | 33.30 | 36.80 | 30.0 | 48.4 | 62.0 | 2.0 |
| SMDJ33A | SMDJ33CA | PFM | DFM | 1 | 36.70 | 40.60 | 33.0 | 53.3 | 56.3 | 2.0 |
| SMDJ36A | SMDJ36CA | PFP | DFP | 1 | 40.00 | 44.20 | 36.0 | 58.1 | 51.7 | 2.0 |
| SMDJ40A | SMDJ40CA | PFR | DFR | 1 | 44.40 | 49.10 | 40.0 | 64.5 | 46.6 | 2.0 |
| SMDJ43A | SMDJ43CA | PFT | DFT | 1 | 47.80 | 52.80 | 43.0 | 69.4 | 43.3 | 2.0 |
| SMDJ45A | SMDJ45CA | PFV | DFV | 1 | 50.00 | 55.30 | 45.0 | 72.7 | 41.3 | 2.0 |
| SMDJ48A | SMDJ48CA | PFX | DFX | 1 | 53.30 | 58.90 | 48.0 | 77.4 | 38.8 | 2.0 |
| SMDJ51A | SMDJ51CA | PFZ | DFZ | 1 | 56.70 | 62.70 | 51.0 | 82.4 | 36.5 | 2.0 |
| SMDJ54A | SMDJ54CA | RGE | DGE | 1 | 60.00 | 66.30 | 54.0 | 87.1 | 34.5 | 2.0 |
| SMDJ58A | SMDJ58CA | PGG | DGG | 1 | 64.40 | 71.20 | 58.0 | 93.6 | 32.1 | 2.0 |
| SMDJ60A | SMDJ60CA | PGK | DGK | 1 | 66.70 | 73.70 | 60.0 | 96.8 | 31.0 | 2.0 |
| SMDJ64A | SMDJ64CA | PGM | DGM | 1 | 71.10 | 78.60 | 64.0 | 103.0 | 29.2 | 2.0 |
| SMDJ70A | SMDJ70CA | PGP | DGP | 1 | 77.80 | 86.00 | 70.0 | 113.0 | 26.6 | 2.0 |
| SMDJ75A | SMDJ75CA | PGR | DGR | 1 | 83.30 | 92.10 | 75.0 | 121.0 | 24.8 | 2.0 |
| SMDJ78A | SMDJ78CA | PGT | DGT | 1 | 86.70 | 95.80 | 78.0 | 126.0 | 23.9 | 2.0 |
| SMDJ85A | SMDJ85CA | PGV | DGV | 1 | 94.40 | 104.00 | 85.0 | 137.0 | 21.9 | 2.0 |
| SMDJ90A | SMDJ90CA | PGX | DGX | 1 | 100.00 | 111.00 | 90.0 | 146.0 | 20.6 | 2.0 |
| SMDJ100A | SMDJ100CA | PGZ | DGZ | 1 | 111.00 | 123.00 | 100.0 | 162.0 | 18.6 | 2.0 |
| SMDJ110A | SMDJ110CA | PHE | DHE | 1 | 122.00 | 135.00 | 110.0 | 177.0 | 17.0 | 2.0 |
| SMDJ120A | SMDJ120CA | PHG | DHG | 1 | 133.00 | 147.00 | 120.0 | 193.0 | 15.6 | 2.0 |
| SMDJ130A | SMDJ130CA | PHK | DHK | 1 | 144.00 | 159.00 | 130.0 | 209.0 | 14.4 | 2.0 |
| SMDJ150A | SMDJ150CA | PHM | DHM | 1 | 167.00 | 185.00 | 150.0 | 243.0 | 12.4 | 2.0 |
| SMDJ160A | SMDJ160CA | PHP | DHP | 1 | 178.00 | 197.00 | 160.0 | 259.0 | 11.6 | 2.0 |
| SMDJ170A | SMDJ170CA | PHR | DHR | 1 | 189.00 | 209.00 | 170.0 | 275.0 | 11.0 | 2.0 |
| SMDJ180A | SMDJ180CA | PHT | DHT | 1 | 201.00 | 222.00 | 180.0 | 292.0 | 10.4 | 2.0 |
| SMDJ200A | SMDJ200CA | PHX | DHX | 1 | 224.00 | 247.00 | 200.0 | 324.0 | 9.3 | 2.0 |
| SMDJ220A | SMDJ220CA | PHZ | DHZ | 1 | 246.00 | 272.00 | 220.0 | 356.0 | 8.5 | 2.0 |
| SMDJ250A | SMDJ250CA | PIE | DIE | 1 | 279.00 | 309.00 | 250.0 | 405.0 | 7.5 | 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)

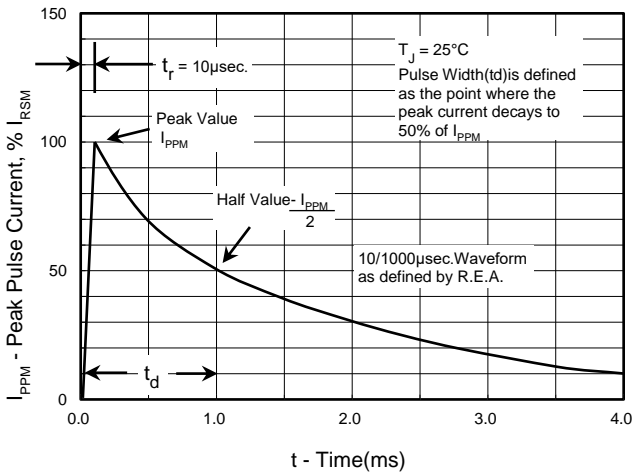
Peak Pulse Power Rating



Pulse Derating Curve



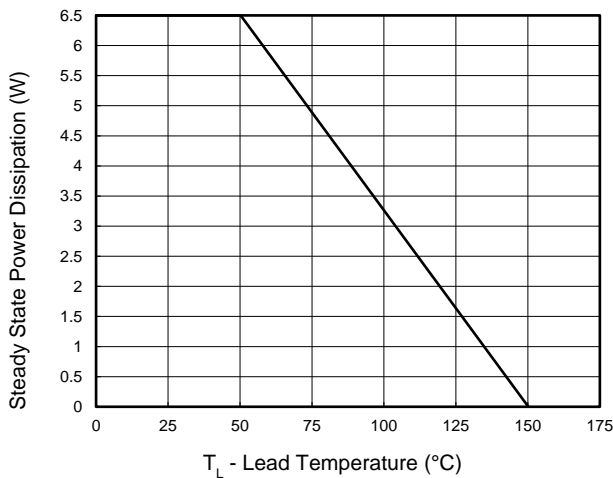
Pulse Waveform



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 |
|-------------|----------|-----------------------------|-------------------|-----------------------|
| SMDJxxxA | 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>SMDJ XXX C A</p> | |

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