DO-214AB (SMC J-Bend)

Dimensions in inches and (millimeters)

Agency | Agency File Number
--- | ---
\[\text{Agency} \] | \[\text{Agency File Number} \]
\[\text{E521119} \]

**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 1.0 ps 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

**PRIMARY CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRWM</td>
<td></td>
<td>5.0V to 440V</td>
<td></td>
</tr>
<tr>
<td>VBR</td>
<td></td>
<td>6.4V to 543V</td>
<td></td>
</tr>
<tr>
<td>PPRM</td>
<td></td>
<td>1500W</td>
<td></td>
</tr>
<tr>
<td>TJ max</td>
<td></td>
<td>150°C</td>
<td></td>
</tr>
<tr>
<td>Polarity</td>
<td></td>
<td>Uni-directional &amp; Bi-directional</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td></td>
<td>DO-214AB</td>
<td></td>
</tr>
</tbody>
</table>

**DEVICES FOR BIPOLAR APPLICATION**

- For Bidirectional use C or CA Suffix for types SMCJ5.0 thru types SMCJ440 (e.g. SMCJ5.0A, SMCJ440CA)
- Electrical characteristics apply in both directions

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1, 2)</td>
<td>PPPM</td>
<td>1500</td>
<td>Watts</td>
</tr>
<tr>
<td>Peak Pulse Current of on 10/1000μs waveform(Note 1)</td>
<td>IPPM</td>
<td>See Next Table</td>
<td>Amps</td>
</tr>
<tr>
<td>Peak Forward Surge Current, 8.3ms Single Half Sine-Wave(Note 2, 3)</td>
<td>IFSM</td>
<td>200</td>
<td>Amps</td>
</tr>
<tr>
<td>Operating junction and Storage Temperature Range</td>
<td>TJ, TSTG</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
<tr>
<td>Typical Thermal Resistance Junction to Lead</td>
<td>R_JL</td>
<td>15</td>
<td>°C/W</td>
</tr>
<tr>
<td>Typical Thermal Resistance Junction to Ambient</td>
<td>R_JA</td>
<td>75</td>
<td>°C/W</td>
</tr>
</tbody>
</table>

Note
(1) Non-repetitive current pulse above $T_A = 25$ °C
(2) Mounted on 8.0mm x 8.0mm Copper Pads to each terminal
ELECTRICAL CHARACTERISTICS

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25°C$ unless otherwise noted)

**Peak Pulse Power Rating**

- $I_{PPM}$ - Peak Pulse Current (% $I_FSM$)
- $t_d$ - Pulse Width (sec.)
- $P_{PPM}$ - Peak Pulse Power (kW)

**Pulse Derating Curve**

- $P_{PPM}$ or Current ($I_{PPM}$) Derating in Percentage%
- $T_A$ - Ambient Temperature ($°C$)

**Steady State Power Derating Curve**

- Steady State Power Dissipation (W)
- $T_L$ - Lead Temperature ($°C$)

**Typical Junction Capacitance**

- $C_J$ - Junction Capacitance (pF)
- $V_{BR}$ - Reverse Breakdown Voltage (V)

**Maximum Non-repetitive Forward Surge current uni-directional only**

- $I_{PPM}$ - Peak Forward Surge Current (A)
- Number of Cycles at 60 Hz

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### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Quantity</th>
<th>Packing Option</th>
<th>Component Package</th>
<th>Packing Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMCJxxxA</td>
<td>3000</td>
<td>Tape &amp; Reel - 16mm/13&quot; tape</td>
<td>DO-214AB</td>
<td>EIA STD RS-481</td>
</tr>
</tbody>
</table>

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

### Part Number and Part Marking

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMCJ XXX C A</td>
<td></td>
</tr>
</tbody>
</table>

- Narrow Vvs: VOLTAGE TOLERANCE
- Bi-DIRECTIONAL
- Vr: VOLTAGE
- SERIES

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