

Description

The SMCJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.



Features

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-0
- Typical IR less than 5uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to V_{BR} min

Maximum Ratings And Electrical Characteristics

| Part Number (BI) | Reverse Stand Off Voltage V_R (Volts) | Breakdown Voltage V_{BR} (Volts)@ I_T | | Test Current I_T (mA) | Maximun Clamping Voltage V_C @ I_{PP} (V) | Maximun Peak Pulse Current I_{PP} (A) | Maximun Reverse Leakage I_R @ V_R (μ A) |
|---------------------|---|--|--------|----------------------------|--|---|--|
| | | MIN | MAX | | | | |
| SMCJ350CA | 350.0 | 391.00 | 432.00 | 1 | 567.0 | 2.6 | 5 |

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.
For parts without A (V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts).

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|--------------------|
| Peak Pulse Power Dissipation at $T_A=25^\circ\text{C}$ by 10x1000 μ s waveform (Fig.1)(Note 1), (Note 2) | P_{PPM} | 1500 | W |
| Power Dissipation on infinite heat sink at $T_A=50^\circ\text{C}$ | $P_{M(AV)}$ | 6.5 | W |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3) | I_{FSM} | 200 | A |
| Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4) | V_F | 3.5V/5 | V |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -65 to 150 | $^\circ\text{C}$ |
| Typical Thermal Resistance Junction to Lead | $R_{\theta JL}$ | 15 | $^\circ\text{C/W}$ |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 75 | $^\circ\text{C/W}$ |

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.
4. $V_F < 3.5\text{V}$ for $V_{BR} \leq 200\text{V}$ and $V_F < 6.5\text{V}$ for $V_{BR} \geq 201\text{V}$.

Rating And Characteristic Curves

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

Figure 1 - Peak Pulse Power Rating

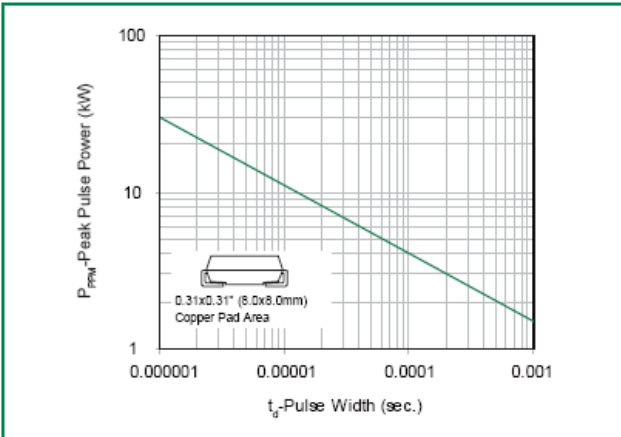


Figure 2 - Pulse Derating Curve

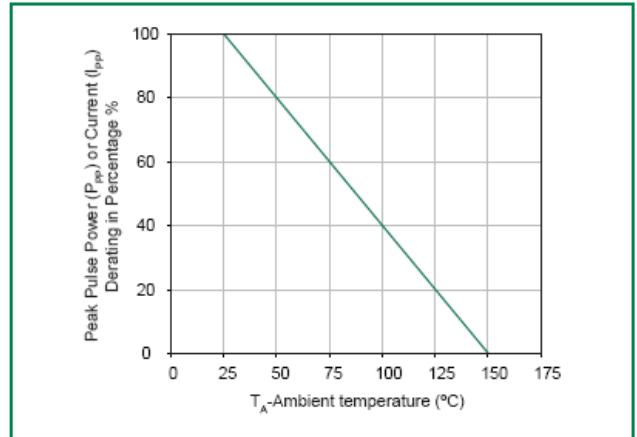


Figure 3 - Pulse Waveform

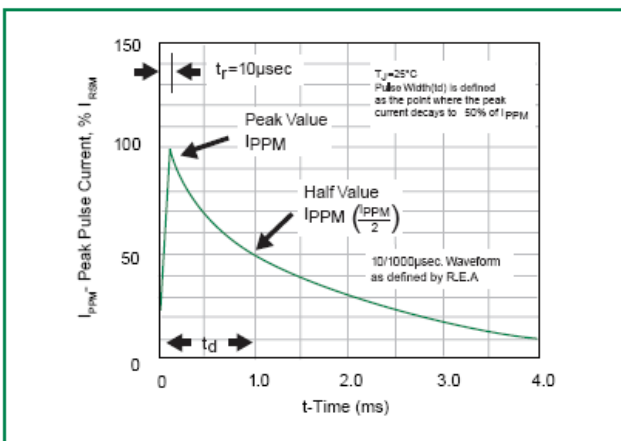


Figure 4 - Typical Junction Capacitance

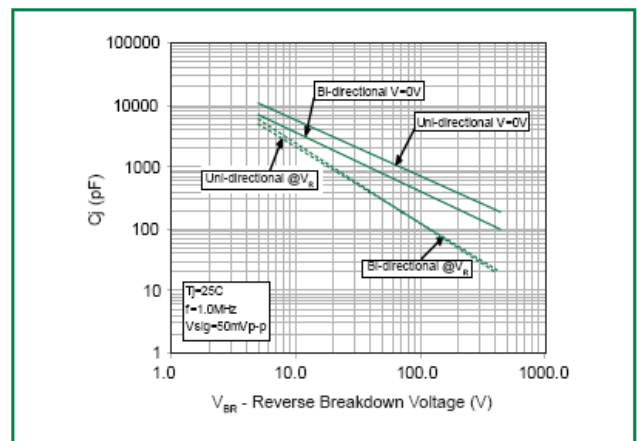


Figure 5 - Steady State Power Dissipation Derating Curve

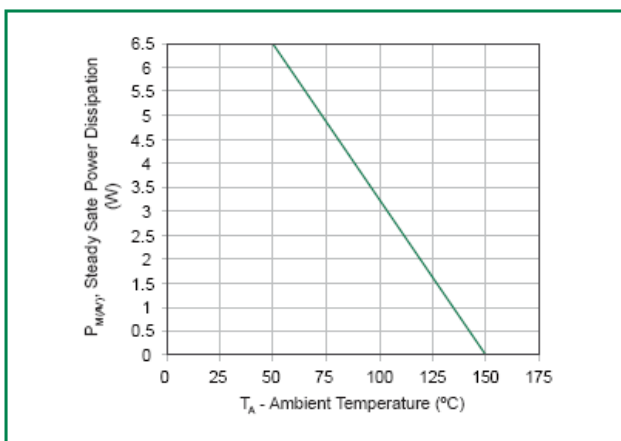
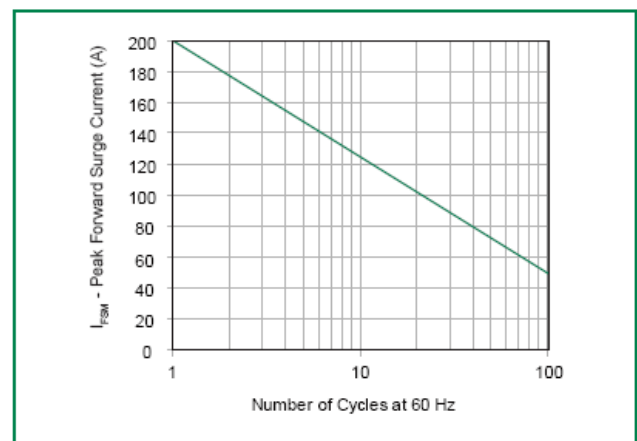
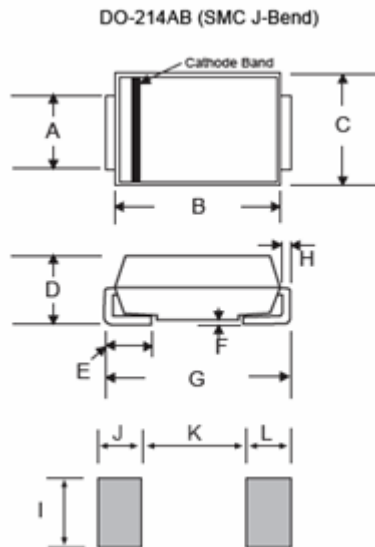



Figure 6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only



Dimensions


| Dimension | Inches | | Millimeters | |
|-----------|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.114 | 0.126 | 2.900 | 3.200 |
| B | 0.260 | 0.280 | 6.600 | 7.110 |
| C | 0.220 | 0.245 | 5.590 | 6.220 |
| D | 0.079 | 0.103 | 2.060 | 2.620 |
| E | 0.030 | 0.060 | 0.760 | 1.520 |
| F | - | 0.008 | - | 0.203 |
| G | 0.305 | 0.320 | 7.750 | 8.130 |
| H | 0.006 | 0.012 | 0.152 | 0.305 |
| I | 0.129 | - | 3.300 | - |
| J | 0.094 | - | 2.400 | - |
| K | - | 0.165 | - | 4.200 |
| L | 0.094 | - | 2.400 | - |

Summary of Packing Options

| Package Type | Description | Packing Quantity | Industry Standard |
|---|----------------------------|------------------|-------------------|
| DO-214AB  | Embossed Carrier Reel Pack | 500 PCS | EIA-481-1 |