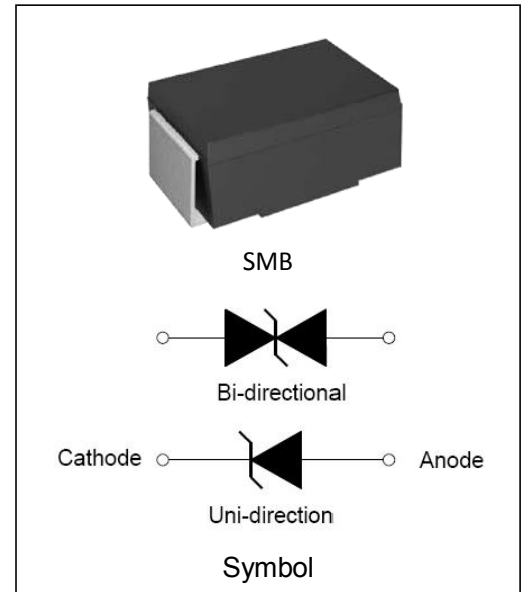


»Features

- Peak power dissipation 600W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Fast response time: typically less than 1ps from 0 Volts to BV min
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and RoHS compliant
- Lead-free finish



»Mechanical Characteristics

- CASE: SMB (DO-214AA) Molded Plastic over glass passivated junction.
- Mounting Position: Any
- Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.
- Terminal: Solder plated

»Maximum Ratings And Characteristics @ 25°C Ambient Temperature

| Parameter | Symbol | Value | Units |
|--|-----------|-------------|-------------|
| Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1) | P_{PPM} | Min 600 | W |
| Power Dissipation on Infinite Heat Sink at $T_L=50^{\circ}C$ | P_D | 5 | W |
| Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3) | I_{PPM} | See Table 1 | A |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3) | I_{FSM} | 100 | A |
| Operating Junction Temperature Range | T_J | -55 to 150 | $^{\circ}C$ |
| Storage Temperature Range | T_{STG} | -55 to 150 | $^{\circ}C$ |

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^{\circ}C$ per Fig.2.

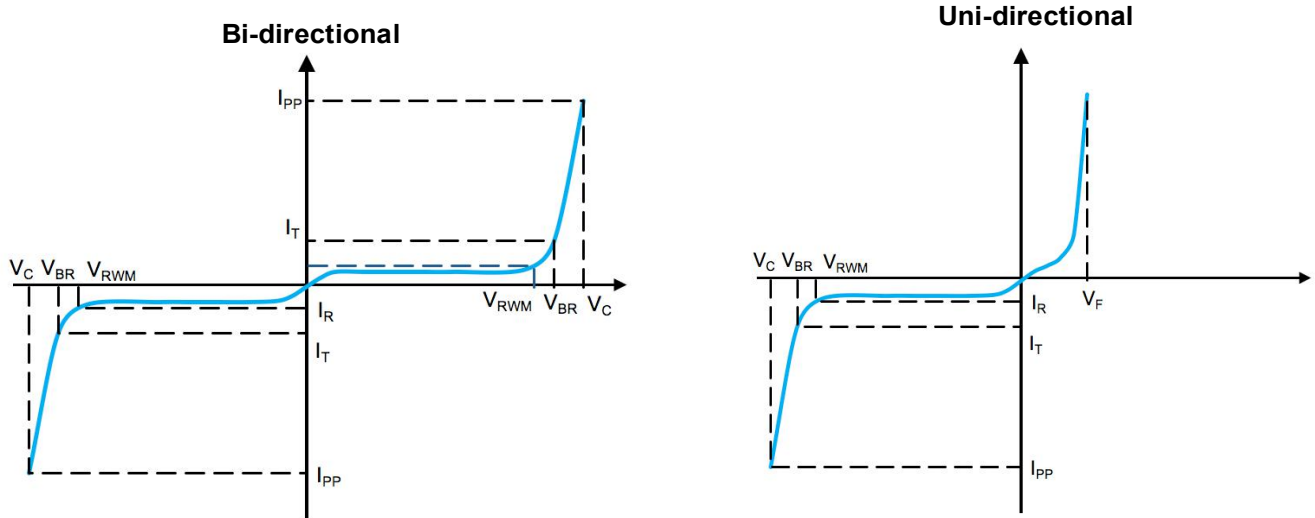
2. Mounted on $5.0 \times 5.0 \text{mm}^2$ (0.03mm thick) Copper Pads to each terminal.

3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

»Electrical Specification @ Tamb 25°C

| Type Number | | Marking | | Reverse Stand-Off Voltage | Breakdown Voltage Min. @ I_T | Breakdown Voltage Max. @ I_T | Test Current | Maximum Clamping Voltage @ I_{PP} | Peak Pulse Current | Reverse Leakage @ V_{RMW} |
|-------------|-----------|----------|-----------|---------------------------|--------------------------------|--------------------------------|--------------|-------------------------------------|--------------------|-----------------------------|
| (Uni) | (Bi) | (Uni) | (Bi) | $V_{RMW}(V)$ | $V_{BR \text{ MIN}}(V)$ | $V_{BR \text{ MAX}}(V)$ | $I_T (mA)$ | $V_C(V)$ | $I_{PP}(A)$ | $I_R(\mu A)$ |
| SMBJ6.8A | SMBJ6.8CA | SMBJ6.8A | SMBJ6.8CA | 5.8 | 6.45 | 7.14 | 10 | 10.5 | 58.1 | 500 |

»I-V Curve Characteristics



- P_{PPM}** Peak Pulse Power Dissipation - Max power dissipation
- V_{RWM}** Reverse Stand-off Voltage - Maximum voltage that can be applied to TVS without operation
- V_{BR}** Breakdown Voltage – Maximum voltage that flows though the TVS at a specified current (I_T)
- V_C** Clamping Voltage – Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)
- I_R** Reverse Leakage Current – Current measured at V_R
- V_F** Forward Voltage Drop for Uni-directional

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

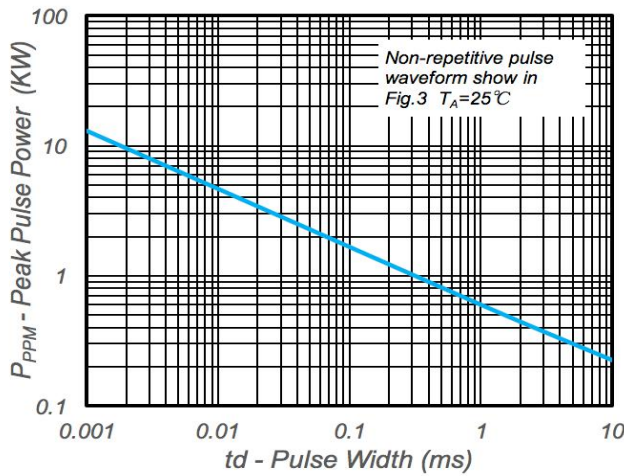


Fig. 1 - Peak Pulse Power Rating

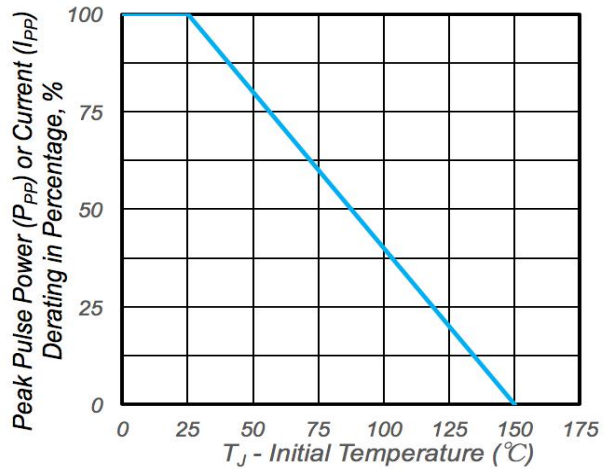


Fig. 2 - Pulse Derating Cure

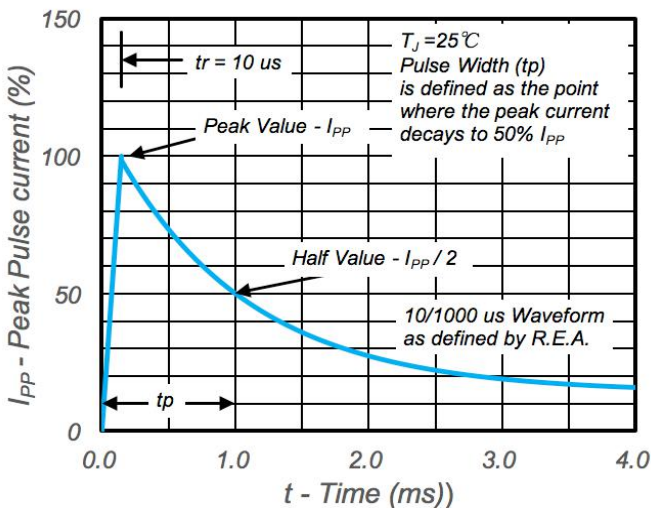


Fig. 3 – Pulse Waveform

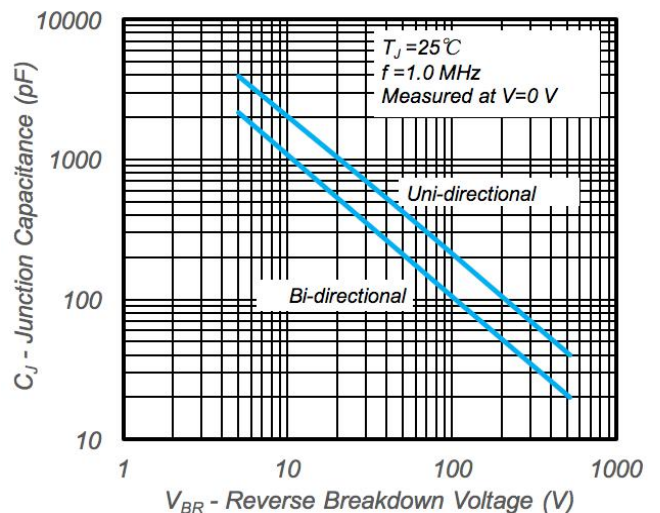
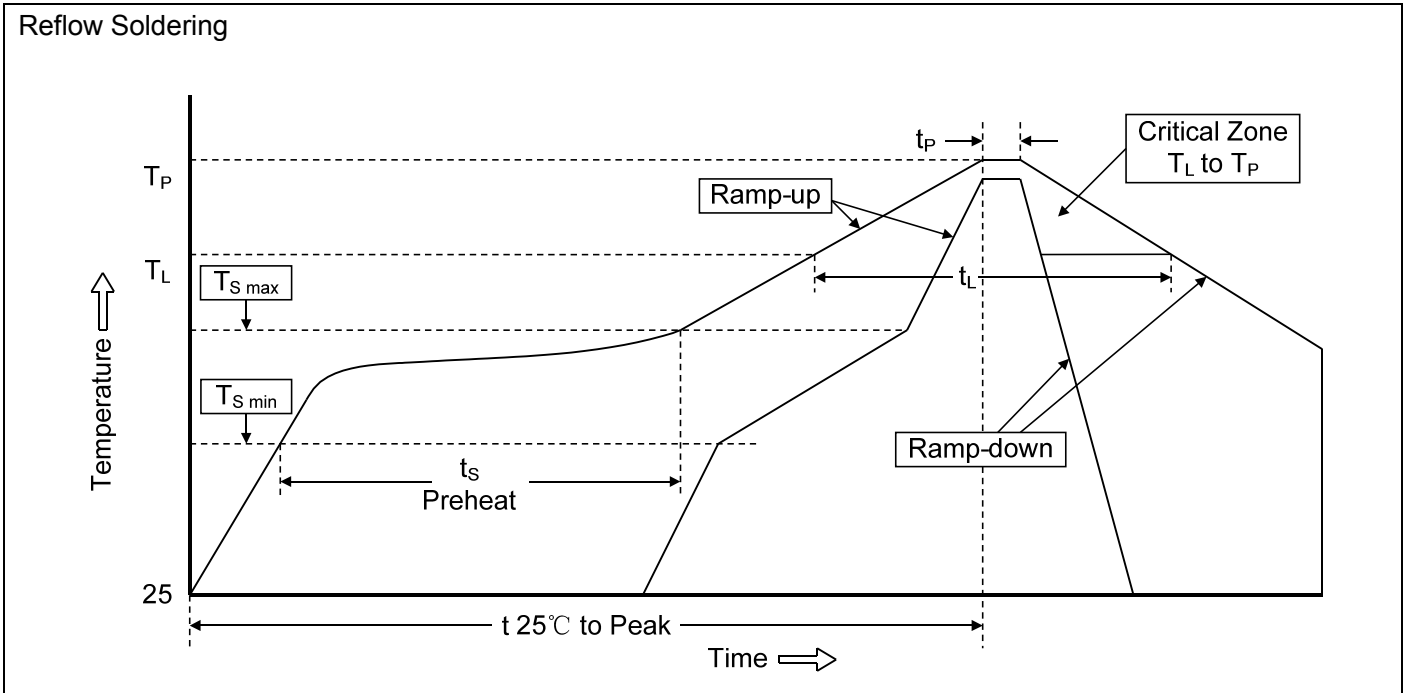


Fig. 4 - Typical Junction Capacitance

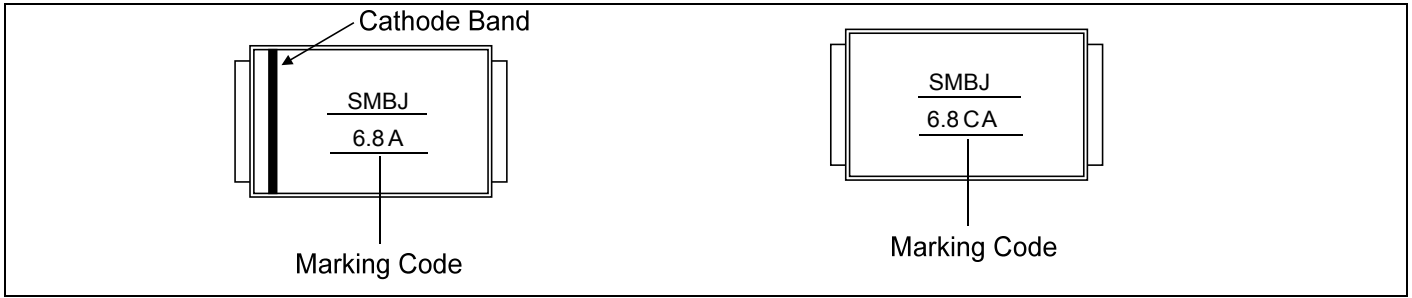
»Recommended Soldering Conditons



Recommended Conditions

| Profile Feature | Pb-Free Assembly |
|---|----------------------------------|
| Average ramp-up rate (T_L to T_P) | 3°C/second max. |
| Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s) | 150°C 200°C 60-180 seconds |
| $T_{S\ max}$ to T_L -Ramp-up Rate | 3°C/second max. |
| Time maintained above: -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds |
| Peak Temperature (T_P) | 260°C |
| Time within 5°C of actual Peak Temperature (t_p) | 20-40 seconds |
| Ramp-down Rate | 6°C/second max. |
| Time 25°C to Peak Temperature | 8 minutes max. |

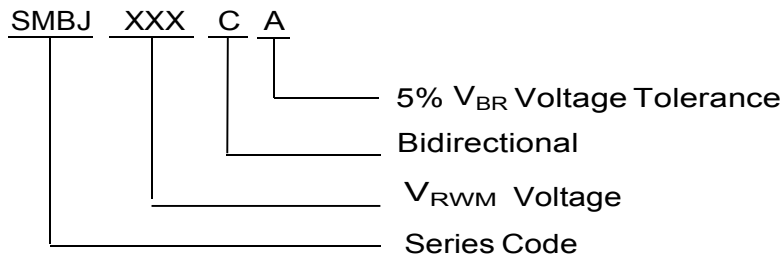
»Marking Code



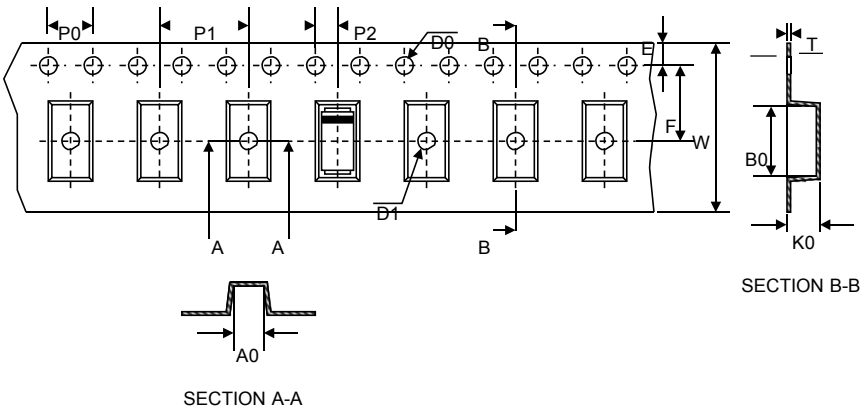
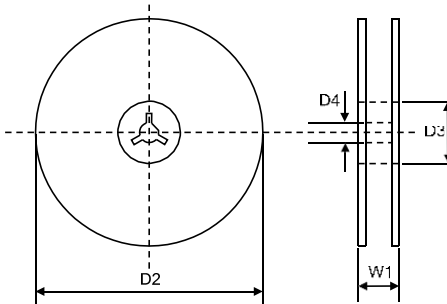
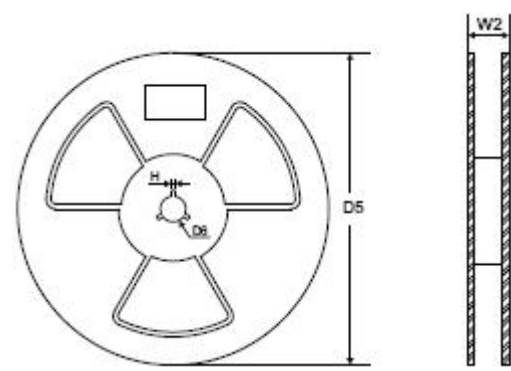
»Package Outline Dimensions and Pad Layouts (DO-214AA)

| Dim | Millimeters | | Inches | |
|-----|-------------|-------|--------|-------|
| | Min | Max | Min | Max |
| L | 4.29 | 4.70 | 0.169 | 0.186 |
| D | 3.40 | 3.79 | 0.134 | 0.150 |
| D1 | 1.85 | 2.25 | 0.073 | 0.089 |
| T | 5.10 | 5.48 | 0.201 | 0.216 |
| T1 | 0.76 | 1.52 | 0.030 | 0.060 |
| d | - | 0.203 | - | 0.008 |
| H | 2.00 | 2.50 | 0.079 | 0.098 |
| H1 | 1.98 | 2.29 | 0.078 | 0.090 |

»Ordering Information



»Packaging

| Tape | Symbol | Dimension(mm) |
|---|---|---------------|
|  | W | 12.00±0.20 |
| | P0 | 4.00±0.10 |
| | P1 | 8.00±0.10 |
| | P2 | 2.00±0.10 |
| | D0 | Φ1.55±0.10 |
| | D1 | Φ1.5±0.10 |
| | E | 1.75±0.10 |
| | F | 5.50±0.10 |
| | A0 | 3.86±0.15 |
| | B0 | 5.65±0.10 |
| | K0 | 2.75±0.15 |
| | T | 0.25±0.05 |
| | <p>7" Reel</p>  | D2 |
| D3 | | Φ50.0Min. |
| D4 | | Φ13.0±0.5 |
| W1 | | 16.0±2.0 |
| Quantity: 500PCS | | |
| <p>13" Reel</p>  | | D5 |
| | D6 | Φ13.5±0.5 |
| | H | 2.5±1.0 |
| | W2 | 16.0±2.0 |
| | Quantity: 3000PCS | |