

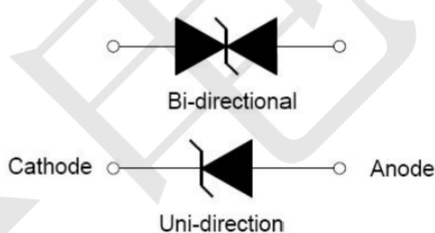
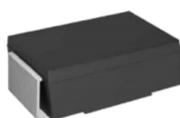
### Features

Peak power dissipation 1000W@10 x 1000 us Pluse  
Low incremental surge resistance  
Excellent clamping capability  
Glass passivated junction  
Fast response time  
Typical IR less than 1uA above 10V  
Halogen free and RoHS compliant

### Mechanical Data

CASE: SMBJ(DO-214AA) Molded Plastic  
Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device  
Mounting Position: Any

### DO-214AA(SMB)



### Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameter                                                              | Symbol    | Value       | Units              |
|------------------------------------------------------------------------|-----------|-------------|--------------------|
| Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1) | $P_{PPM}$ | Min1000     | W                  |
| Power Dissipation on Infinite Heat Sink at $T_L=50^{\circ}\text{C}$    | $P_D$     | 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  | $^{\circ}\text{C}$ |
| Storage Temperature Range                                              | $T_{STG}$ | -55 to 150  | $^{\circ}\text{C}$ |

### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

| Type Number |              | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RMW</sub> |
|-------------|--------------|---------------------------|----------------------------------------|-----------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| (Uni)       | (Bi)         | RMW(V)                    | V <sub>BR</sub> MIN(V)                 | V <sub>BR</sub> MAX(V)                  | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| 1.0SMBJ5.0A | 1.0SMBJ5.0CA | 5                         | 6.4                                    | 7                                       | 10                  | 9.2                                       | 108.7               | 500                               |
| 1.0SMBJ6.0A | 1.0SMBJ6.0CA | 6                         | 6.67                                   | 7.37                                    | 10                  | 10.3                                      | 97.1                | 500                               |
| 1.0SMBJ6.5A | 1.0SMBJ6.5CA | 6.5                       | 7.22                                   | 7.98                                    | 10                  | 11.2                                      | 89.3                | 300                               |
| 1.0SMBJ7.0A | 1.0SMBJ7.0CA | 7                         | 7.78                                   | 8.6                                     | 10                  | 12                                        | 83.3                | 200                               |
| 1.0SMBJ7.5A | 1.0SMBJ7.5CA | 7.5                       | 8.33                                   | 9.21                                    | 1                   | 12.9                                      | 77.5                | 100                               |
| 1.0SMBJ8.0A | 1.0SMBJ8.0CA | 8                         | 8.89                                   | 9.83                                    | 1                   | 13.6                                      | 73.5                | 50                                |
| 1.0SMBJ8.5A | 1.0SMBJ8.5CA | 8.5                       | 9.44                                   | 10.4                                    | 1                   | 14.4                                      | 69.4                | 20                                |
| 1.0SMBJ9.0A | 1.0SMBJ9.0CA | 9                         | 10                                     | 11.1                                    | 1                   | 15.4                                      | 64.9                | 10                                |
| 1.0SMBJ10A  | 1.0SMBJ10CA  | 10                        | 11.1                                   | 12.3                                    | 1                   | 17                                        | 58.8                | 5                                 |
| 1.0SMBJ11A  | 1.0SMBJ11CA  | 11                        | 12.2                                   | 13.5                                    | 1                   | 18.2                                      | 54.9                | 1                                 |
| 1.0SMBJ12A  | 1.0SMBJ12CA  | 12                        | 13.3                                   | 14.7                                    | 1                   | 19.9                                      | 50.3                | 1                                 |
| 1.0SMBJ13A  | 1.0SMBJ13CA  | 13                        | 14.4                                   | 15.9                                    | 1                   | 21.5                                      | 46.5                | 1                                 |
| 1.0SMBJ14A  | 1.0SMBJ14CA  | 14                        | 15.6                                   | 17.2                                    | 1                   | 23.2                                      | 43.1                | 1                                 |
| 1.0SMBJ15A  | 1.0SMBJ15CA  | 15                        | 16.7                                   | 18.5                                    | 1                   | 24.4                                      | 41.0                | 1                                 |
| 1.0SMBJ16A  | 1.0SMBJ16CA  | 16                        | 17.8                                   | 19.7                                    | 1                   | 26                                        | 38.5                | 1                                 |
| 1.0SMBJ17A  | 1.0SMBJ17CA  | 17                        | 18.9                                   | 20.9                                    | 1                   | 27.6                                      | 36.2                | 1                                 |
| 1.0SMBJ18A  | 1.0SMBJ18CA  | 18                        | 20                                     | 22.1                                    | 1                   | 29.2                                      | 34.2                | 1                                 |
| 1.0SMBJ20A  | 1.0SMBJ20CA  | 20                        | 22.2                                   | 24.5                                    | 1                   | 32.4                                      | 30.9                | 1                                 |
| 1.0SMBJ22A  | 1.0SMBJ22CA  | 22                        | 24.4                                   | 26.9                                    | 1                   | 35.5                                      | 28.2                | 1                                 |
| 1.0SMBJ24A  | 1.0SMBJ24CA  | 24                        | 26.7                                   | 29.5                                    | 1                   | 38.9                                      | 25.7                | 1                                 |
| 1.0SMBJ26A  | 1.0SMBJ26CA  | 26                        | 28.9                                   | 31.9                                    | 1                   | 42.1                                      | 23.8                | 1                                 |
| 1.0SMBJ28A  | 1.0SMBJ28CA  | 28                        | 31.1                                   | 34.4                                    | 1                   | 45.4                                      | 22.0                | 1                                 |
| 1.0SMBJ30A  | 1.0SMBJ30CA  | 30                        | 33.3                                   | 36.8                                    | 1                   | 48.4                                      | 20.7                | 1                                 |
| 1.0SMBJ33A  | 1.0SMBJ33CA  | 33                        | 36.7                                   | 40.6                                    | 1                   | 53.3                                      | 18.8                | 1                                 |
| 1.0SMBJ36A  | 1.0SMBJ36CA  | 36                        | 40                                     | 44.2                                    | 1                   | 58.1                                      | 17.2                | 1                                 |
| 1.0SMBJ40A  | 1.0SMBJ40CA  | 40                        | 44.4                                   | 49.1                                    | 1                   | 64.5                                      | 15.5                | 1                                 |
| 1.0SMBJ43A  | 1.0SMBJ43CA  | 43                        | 47.8                                   | 52.8                                    | 1                   | 69.4                                      | 14.4                | 1                                 |
| 1.0SMBJ45A  | 1.0SMBJ45CA  | 45                        | 50                                     | 55.3                                    | 1                   | 72.7                                      | 13.8                | 1                                 |
| 1.0SMBJ48A  | 1.0SMBJ48CA  | 48                        | 53.3                                   | 58.9                                    | 1                   | 77.4                                      | 12.9                | 1                                 |
| 1.0SMBJ51A  | 1.0SMBJ51CA  | 51                        | 56.7                                   | 62.7                                    | 1                   | 82.4                                      | 12.1                | 1                                 |
| 1.0SMBJ54A  | 1.0SMBJ54CA  | 54                        | 60                                     | 66.3                                    | 1                   | 87.1                                      | 11.5                | 1                                 |
| 1.0SMBJ58A  | 1.0SMBJ58CA  | 58                        | 64.4                                   | 71.2                                    | 1                   | 93.6                                      | 10.7                | 1                                 |
| 1.0SMBJ60A  | 1.0SMBJ60CA  | 60                        | 66.7                                   | 73.7                                    | 1                   | 96.8                                      | 10.3                | 1                                 |
| 1.0SMBJ64A  | 1.0SMBJ64CA  | 64                        | 71.1                                   | 78.6                                    | 1                   | 103                                       | 9.7                 | 1                                 |
| 1.0SMBJ70A  | 1.0SMBJ70CA  | 70                        | 77.8                                   | 86                                      | 1                   | 113                                       | 8.8                 | 1                                 |
| 1.0SMBJ75A  | 1.0SMBJ75CA  | 75                        | 83.3                                   | 92.1                                    | 1                   | 121                                       | 8.3                 | 1                                 |
| 1.0SMBJ78A  | 1.0SMBJ78CA  | 78                        | 86.7                                   | 95.8                                    | 1                   | 126                                       | 7.9                 | 1                                 |
| 1.0SMBJ85A  | 1.0SMBJ85CA  | 85                        | 94.4                                   | 104                                     | 1                   | 137                                       | 7.3                 | 1                                 |
| 1.0SMBJ90A  | 1.0SMBJ90CA  | 90                        | 100                                    | 111                                     | 1                   | 146                                       | 6.8                 | 1                                 |
| 1.0SMBJ100A | 1.0SMBJ100CA | 100                       | 111                                    | 123                                     | 1                   | 162                                       | 6.2                 | 1                                 |
| 1.0SMBJ110A | 1.0SMBJ110CA | 110                       | 122                                    | 135                                     | 1                   | 177                                       | 5.6                 | 1                                 |
| 1.0SMBJ120A | 1.0SMBJ120CA | 120                       | 133                                    | 147                                     | 1                   | 193                                       | 5.2                 | 1                                 |
| 1.0SMBJ130A | 1.0SMBJ130CA | 130                       | 144                                    | 159                                     | 1                   | 209                                       | 4.8                 | 1                                 |
| 1.0SMBJ150A | 1.0SMBJ150CA | 150                       | 167                                    | 185                                     | 1                   | 243                                       | 4.1                 | 1                                 |
| 1.0SMBJ160A | 1.0SMBJ160CA | 160                       | 178                                    | 197                                     | 1                   | 259                                       | 3.9                 | 1                                 |
| 1.0SMBJ170A | 1.0SMBJ170CA | 170                       | 189                                    | 209                                     | 1                   | 275                                       | 3.6                 | 1                                 |
| 1.0SMBJ180A | 1.0SMBJ180CA | 180                       | 201                                    | 222                                     | 1                   | 292                                       | 3.5                 | 1                                 |
| 1.0SMBJ190A | 1.0SMBJ190CA | 190                       | 211                                    | 234                                     | 1                   | 307                                       | 3.3                 | 1                                 |
| 1.0SMBJ200A | 1.0SMBJ200CA | 200                       | 224                                    | 247                                     | 1                   | 324                                       | 3.1                 | 1                                 |

### Ratings and Characteristic Curves

(Ratings at 25°C ambient temperature unless otherwise specified).

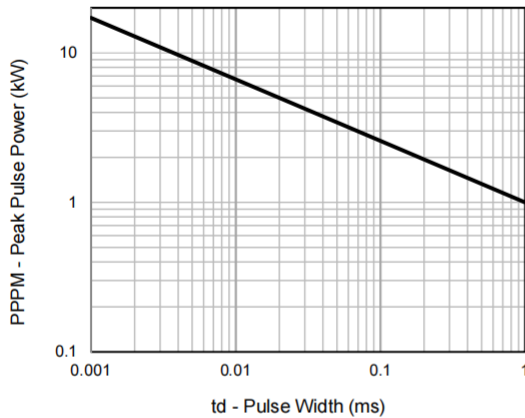


Fig. 1 - Peak Pulse Power Rating

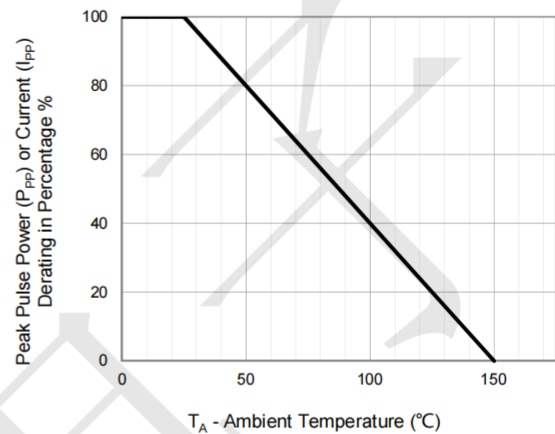


Fig. 2 - Pulse Derating Cure

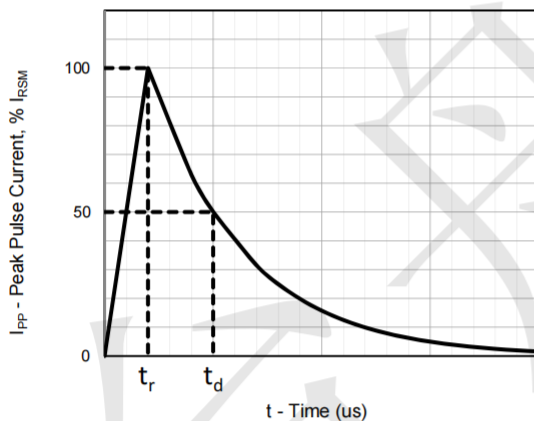


Fig. 3 - Pulse Waveform

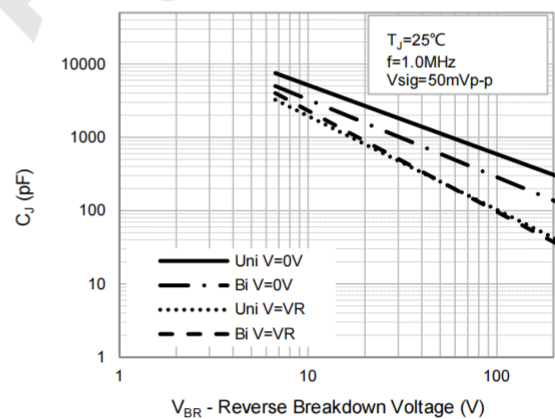


Fig. 4 - Typical Junction Capacitance

**Package Outline Dimensions: SMB(DO-214AA)**

| Dim | Millimeters |      | Inches |       |
|-----|-------------|------|--------|-------|
|     | Min         | Max  | Min    | Max   |
| L   | 4.4         | 4.6  | 0.173  | 0.181 |
| D   | 3.5         | 3.7  | 0.138  | 0.146 |
| D1  | 1.9         | 2.1  | 0.075  | 0.083 |
| T   | 5.1         | 5.48 | 0.201  | 0.216 |
| T1  | 1.0         | 1.6  | 0.039  | 0.063 |
| d   | -           | 0.2  | -      | 0.008 |
| H   | 2.2         | 2.45 | 0.087  | 0.096 |
| H1  | 2.15        | 2.35 | 0.085  | 0.093 |