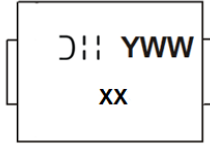
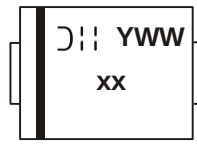


## Marking Information

Bidirectional Device



Cathode Band for Unidirectional Device



xx = Product Type Marking Code (See Page 3)

D = Manufacturers' Marking

YWW = Date Code Marking

Y = Last Digit of Year (ex: 1 for 2021)

WW = Week Code (01 to 53)

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                                                                                                  | Symbol           | Value | Unit |
|-----------------------------------------------------------------------------------------------------------------|------------------|-------|------|
| Peak Pulse Power Dissipation<br>(Non Repetitive Current Pulse Derated above T <sub>A</sub> = +25°C)<br>(Note 6) | P <sub>PK</sub>  | 600   | W    |
| Peak Power Derating Above +25°C                                                                                 | P <sub>DER</sub> | 4.8   | W/°C |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed<br>on Rated Load (Notes 6, 7 & 8)          | I <sub>FSM</sub> | 100   | A    |
| Steady State Power Dissipation @ T <sub>L</sub> = +75°C                                                         | PM(AV)           | 5.0   | W    |
| Instantaneous Forward Voltage @ I <sub>PP</sub> = 35A (Notes 6, 7 & 8)                                          | V <sub>F</sub>   | 3.5   | V    |

## Thermal Characteristics

| Characteristic              | Symbol           | Value       | Unit |
|-----------------------------|------------------|-------------|------|
| Operating Temperature Range | T <sub>J</sub>   | -55 to +150 | °C   |
| Storage Temperature Range   | T <sub>STG</sub> | -55 to +175 | °C   |

Notes:

6. Valid provided that terminals are kept at ambient temperature.

7. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.

8. Unidirectional units only.

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Part Number<br>Add C for Bi-<br>Directional<br>(Note 9) | Reverse<br>Standoff<br>Voltage<br>V <sub>RWM</sub> (V) | Breakdown<br>Voltage<br>V <sub>BR</sub> @ I <sub>T</sub> (Note 10) |         | Test<br>Current<br>I <sub>T</sub> (mA) | Max. Reverse<br>Leakage @ V <sub>RWM</sub><br>(Note 12)<br>I <sub>R</sub> (μA) | Max. Clamping<br>Voltage @ I <sub>PP</sub><br>(Note 11)<br>V <sub>C</sub> (V) | Max. Peak Pulse<br>Current<br>I <sub>PP</sub> (A) | Marking Code |      |
|---------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------|---------|----------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------|--------------|------|
|                                                         |                                                        | Min (V)                                                            | Max (V) |                                        |                                                                                |                                                                               |                                                   | BI-          | UNI- |
| SMBJ7.0(C)AQ                                            | 7.0                                                    | 7.78                                                               | 8.95    | 10                                     | 200                                                                            | 12.0                                                                          | 50.0                                              | AM           | KM   |
| SMBJ12(C)AQ                                             | 12.0                                                   | 13.30                                                              | 15.30   | 1.0                                    | 5.0                                                                            | 19.9                                                                          | 30.2                                              | BE           | LE   |
| SMBJ14(C)AQ                                             | 14.0                                                   | 15.60                                                              | 17.90   | 1.0                                    | 5.0                                                                            | 23.2                                                                          | 25.8                                              | BK           | LK   |
| SMBJ15(C)AQ                                             | 15.0                                                   | 16.70                                                              | 19.20   | 1.0                                    | 5.0                                                                            | 24.4                                                                          | 24.0                                              | BM           | LM   |
| SMBJ16(C)AQ                                             | 16.0                                                   | 17.80                                                              | 20.50   | 1.0                                    | 5.0                                                                            | 26.0                                                                          | 23.1                                              | BP           | LP   |
| SMBJ17(C)AQ                                             | 17.0                                                   | 18.90                                                              | 21.70   | 1.0                                    | 5.0                                                                            | 27.6                                                                          | 21.7                                              | BR           | LR   |
| SMBJ18(C)AQ                                             | 18.0                                                   | 20.00                                                              | 23.30   | 1.0                                    | 5.0                                                                            | 29.2                                                                          | 20.5                                              | BT           | LT   |
| SMBJ20(C)AQ                                             | 20.0                                                   | 22.20                                                              | 25.50   | 1.0                                    | 5.0                                                                            | 32.4                                                                          | 18.5                                              | BV           | LV   |
| SMBJ22(C)AQ                                             | 22.0                                                   | 24.40                                                              | 28.00   | 1.0                                    | 5.0                                                                            | 35.5                                                                          | 16.9                                              | BX           | LX   |
| SMBJ24(C)AQ                                             | 24.0                                                   | 26.70                                                              | 30.70   | 1.0                                    | 5.0                                                                            | 38.9                                                                          | 15.4                                              | BZ           | LZ   |
| SMBJ26(C)AQ                                             | 26.0                                                   | 28.90                                                              | 33.20   | 1.0                                    | 5.0                                                                            | 42.1                                                                          | 14.2                                              | CE           | ME   |
| SMBJ28(C)AQ                                             | 28.0                                                   | 31.10                                                              | 35.80   | 1.0                                    | 5.0                                                                            | 45.4                                                                          | 13.2                                              | CG           | MG   |
| SMBJ30(C)AQ                                             | 30.0                                                   | 33.30                                                              | 38.30   | 1.0                                    | 5.0                                                                            | 48.4                                                                          | 12.4                                              | CK           | MK   |
| SMBJ33(C)AQ                                             | 33.0                                                   | 36.70                                                              | 42.20   | 1.0                                    | 5.0                                                                            | 53.3                                                                          | 11.3                                              | CM           | MM   |
| SMBJ36(C)AQ                                             | 36.0                                                   | 40.00                                                              | 46.00   | 1.0                                    | 5.0                                                                            | 58.1                                                                          | 10.3                                              | CP           | MP   |
| SMBJ40(C)AQ                                             | 40.0                                                   | 44.40                                                              | 51.10   | 1.0                                    | 5.0                                                                            | 64.5                                                                          | 9.3                                               | CR           | MR   |
| SMBJ51(C)AQ                                             | 51.0                                                   | 56.70                                                              | 65.20   | 1.0                                    | 5.0                                                                            | 82.4                                                                          | 7.3                                               | CZ           | MZ   |
| SMBJ58(C)AQ                                             | 58.0                                                   | 64.40                                                              | 74.60   | 1.0                                    | 5.0                                                                            | 93.6                                                                          | 6.4                                               | DG           | NG   |
| SMBJ70(C)AQ                                             | 70.0                                                   | 77.80                                                              | 89.50   | 1.0                                    | 5.0                                                                            | 113.0                                                                         | 5.3                                               | DP           | NP   |
| SMBJ100(C)AQ                                            | 100.0                                                  | 111.0                                                              | 128.00  | 1.0                                    | 5.0                                                                            | 162.0                                                                         | 3.7                                               | DZ           | NZ   |

- Notes:
9. Suffix C denotes bidirectional device.
  10. V<sub>BR</sub> measured with I<sub>T</sub> current pulse = 10ms to 15ms.
  11. Per 10 × 1000μs waveform. See Figure 4.
  12. For Bi-Directional devices having V<sub>RWM</sub> of 10V and under, the I<sub>R</sub> is doubled.

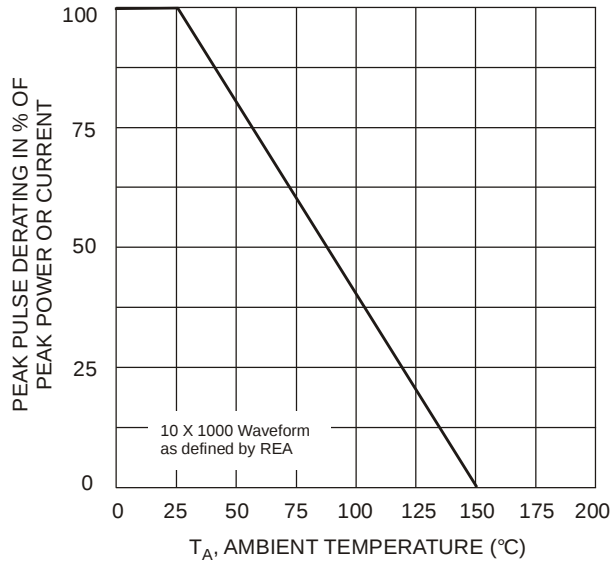


Fig. 1 Pulse Derating Curve

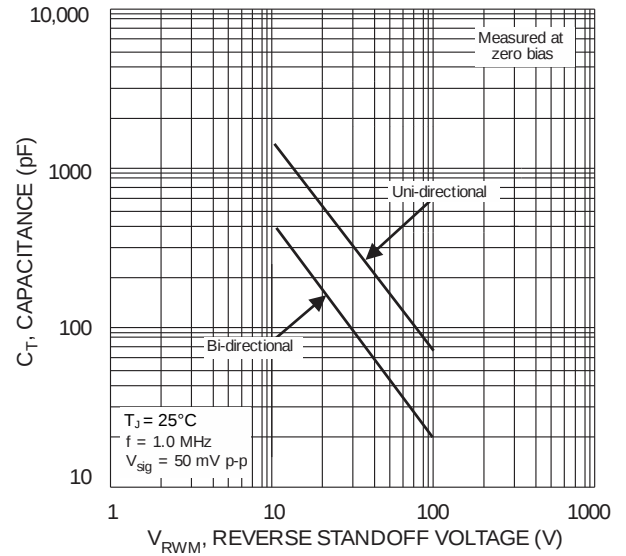


Fig. 2 Typical Total Capacitance

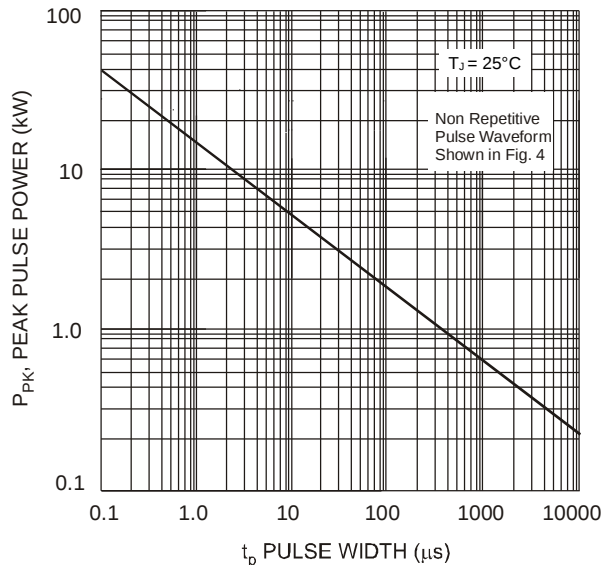


Fig. 3 Pulse Rating Curve

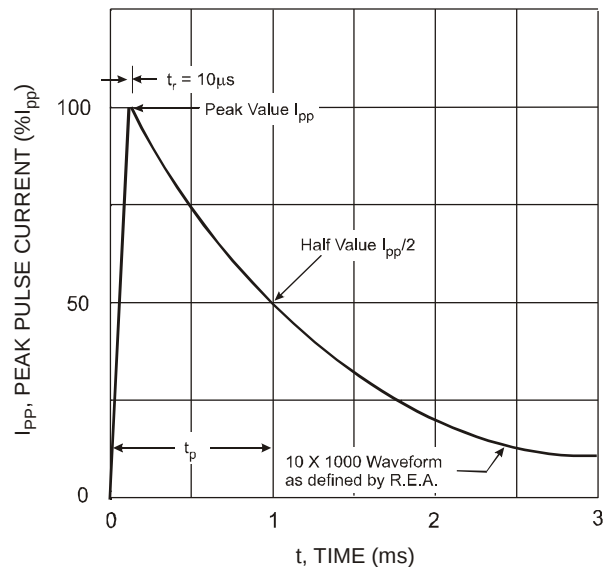


Fig. 4 Pulse Waveform

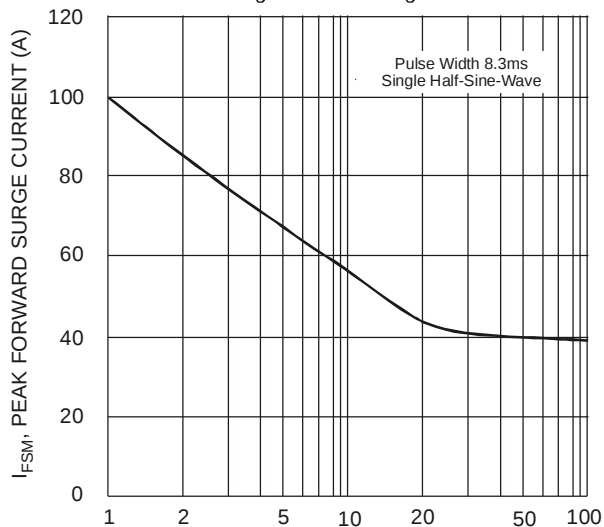


Fig. 5 Maximum Non-Repetitive Surge Current

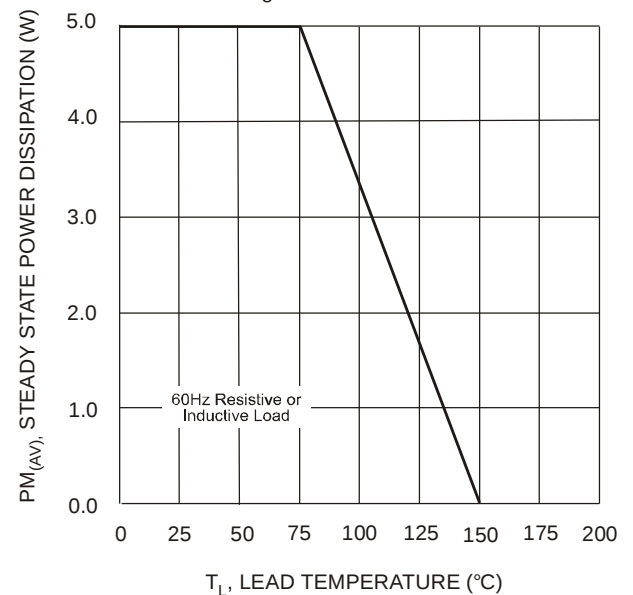
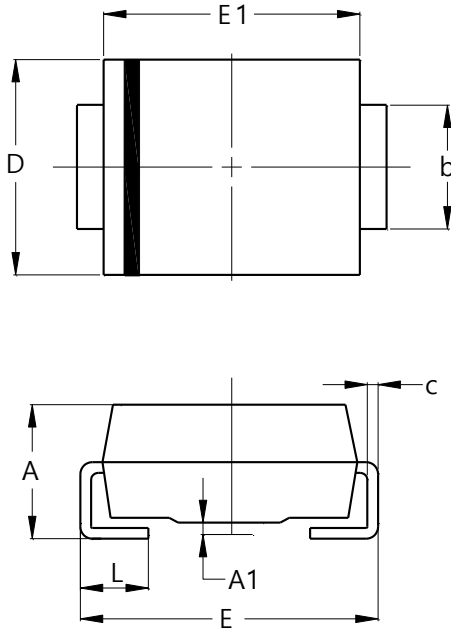


Fig. 6 Steady State Power Derating Curve

## Package Outline Dimensions (Note 13)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SMB



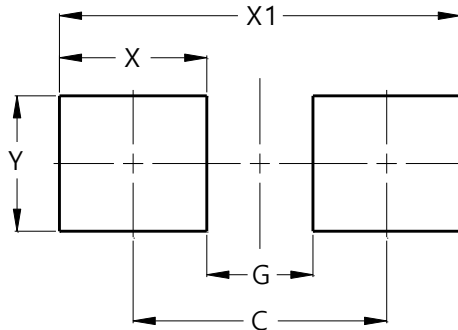
| SMB                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.00 | 2.50 |
| A1                   | 0.05 | 0.20 |
| b                    | 1.96 | 2.21 |
| c                    | 0.15 | 0.31 |
| D                    | 3.30 | 3.94 |
| E                    | 5.00 | 5.59 |
| E1                   | 4.06 | 4.57 |
| L                    | 0.76 | 1.52 |
| All Dimensions in mm |      |      |

Note: 13. The bar in the upper drawing is polarity indicator for Cathode Band. It is for unidirectional devices only. Bidirectional devices have no polarity Indicator.

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SMB



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.30          |
| G          | 1.80          |
| X          | 2.50          |
| X1         | 6.80          |
| Y          | 2.30          |

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