

### FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Built-in strain relief
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps from 0 volt to BV min
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition AEC-Q101 qualified

### MECHANICAL DATA

**Case:** DO-214AA (SMB)

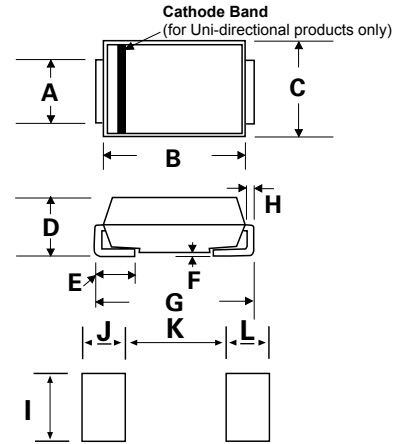
Molding compound, UL flammability classification rating 94V-0 Moisture sensitivity level: level 1, per J-STD-020 Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102 Meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.11 g (approximately)

**DO-214AA (SMB J-Bend)**



| Dimensions | Inches |       | Millimeters |       |
|------------|--------|-------|-------------|-------|
|            | Min    | Max   | Min         | Max   |
| A          | 0.077  | 0.086 | 1.950       | 2.200 |
| B          | 0.160  | 0.180 | 4.060       | 4.570 |
| C          | 0.130  | 0.155 | 3.300       | 3.940 |
| D          | 0.084  | 0.096 | 2.130       | 2.440 |
| E          | 0.030  | 0.060 | 0.760       | 1.520 |
| F          | -      | 0.008 | -           | 0.203 |
| G          | 0.205  | 0.220 | 5.210       | 5.590 |
| H          | 0.006  | 0.012 | 0.152       | 0.305 |
| I          | 0.089  | -     | 2.260       | -     |
| J          | 0.085  | -     | 2.160       | -     |
| K          | -      | 0.107 | -           | 2.740 |
| L          | 0.085  | -     | 2.160       | -     |

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                                                                                            | SYMBOL           | VALUE        | UNIT  |
|------------------------------------------------------------------------------------------------------|------------------|--------------|-------|
| Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10/1000µs Waveform (Fig.2)(Note 1), (Note 2) | P <sub>PPM</sub> | 1000         | Watts |
| Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =50°C                                      | P <sub>D</sub>   | 5            | Watts |
| Peak forward surge current, 8.3 ms single half sine-wave(note3)                                      | I <sub>FSM</sub> | 120          | A     |
| Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only                                 | V <sub>F</sub>   | 3.5          | Volts |
| Typical Thermal Resistance Junction to Lead                                                          | R <sub>θJL</sub> | 20           | °C/W  |
| Typical Thermal Resistance Junction to Ambient                                                       | R <sub>θJA</sub> | 100          | °C/W  |
| Operating Temperature Range                                                                          | T <sub>J</sub>   | - 65 to +150 | °C    |
| Storage Temperature Range                                                                            | T <sub>STG</sub> | - 65 to +175 | °C    |

#### Note:

- 1.Non-repetitive current pulse , per Fig. 4 and derated above T<sub>J</sub> (initial) =25°C per Fig. 3.
- 2.Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.
- 3.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

### Electrical Characteristics

| Part Number<br>(Uni)<br>型号 (单向) | Part Number<br>(Bi)<br>型号 (双向) | Reverse Stand off<br>Voltage $V_R$<br>(Volts)<br>反向对峙电压 | Breakdown<br>Voltage $V_{BR}$<br>(Volts) @ $I_T$<br>崩溃电压 |        | Test Current<br>$I_T$<br>(mA)<br>测试电流 | Maximum<br>Clamping<br>Voltage $V_C$<br>@ $I_{PP}(V)$<br>最大嵌位电压 | Maximum<br>Peak Pulse<br>Current<br>$I_{PP}(A)$<br>最大峰值脉冲电流 | Maximum<br>Reverse<br>Leakage $I_R$<br>@ $V_R$ ( $\mu A$ )<br>最大反向漏电 |
|---------------------------------|--------------------------------|---------------------------------------------------------|----------------------------------------------------------|--------|---------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|
|                                 |                                |                                                         | MIN                                                      | MAX    |                                       |                                                                 |                                                             |                                                                      |
| 1KSMB6.8A                       | 1KSMB6.8CA                     | 5.80                                                    | 6.45                                                     | 7.14   | 10                                    | 10.5                                                            | 95.2                                                        | 900                                                                  |
| 1KSMB7.5A                       | 1KSMB7.5CA                     | 6.40                                                    | 7.13                                                     | 7.88   | 10                                    | 11.3                                                            | 88.5                                                        | 400                                                                  |
| 1KSMB8.2A                       | 1KSMB8.2CA                     | 7.02                                                    | 7.79                                                     | 8.61   | 10                                    | 12.1                                                            | 82.6                                                        | 180                                                                  |
| 1KSMB9.1A                       | 1KSMB9.1CA                     | 7.78                                                    | 8.65                                                     | 9.55   | 1                                     | 13.4                                                            | 74.6                                                        | 45                                                                   |
| 1KSMB10A                        | 1KSMB10CA                      | 8.55                                                    | 9.50                                                     | 10.50  | 1                                     | 14.5                                                            | 69.0                                                        | 8                                                                    |
| 1KSMB11A                        | 1KSMB11CA                      | 9.40                                                    | 10.50                                                    | 11.60  | 1                                     | 15.6                                                            | 64.1                                                        | 4                                                                    |
| 1KSMB12A                        | 1KSMB12CA                      | 10.20                                                   | 11.40                                                    | 12.60  | 1                                     | 16.7                                                            | 59.9                                                        | 1                                                                    |
| 1KSMB13A                        | 1KSMB13CA                      | 11.10                                                   | 12.40                                                    | 13.70  | 1                                     | 18.2                                                            | 54.9                                                        | 1                                                                    |
| 1KSMB15A                        | 1KSMB15CA                      | 12.80                                                   | 14.30                                                    | 15.80  | 1                                     | 21.2                                                            | 47.2                                                        | 1                                                                    |
| 1KSMB16A                        | 1KSMB16CA                      | 13.60                                                   | 15.20                                                    | 16.80  | 1                                     | 22.5                                                            | 44.4                                                        | 1                                                                    |
| 1KSMB18A                        | 1KSMB18CA                      | 15.30                                                   | 17.10                                                    | 18.90  | 1                                     | 25.5                                                            | 39.2                                                        | 1                                                                    |
| 1KSMB20A                        | 1KSMB20CA                      | 17.10                                                   | 19.00                                                    | 21.00  | 1                                     | 27.7                                                            | 36.1                                                        | 1                                                                    |
| 1KSMB22A                        | 1KSMB22CA                      | 18.80                                                   | 20.90                                                    | 23.10  | 1                                     | 30.6                                                            | 32.7                                                        | 1                                                                    |
| 1KSMB24A                        | 1KSMB24CA                      | 20.50                                                   | 22.80                                                    | 25.20  | 1                                     | 33.2                                                            | 30.1                                                        | 1                                                                    |
| 1KSMB27A                        | 1KSMB27CA                      | 23.10                                                   | 25.70                                                    | 28.40  | 1                                     | 37.5                                                            | 26.7                                                        | 1                                                                    |
| 1KSMB30A                        | 1KSMB30CA                      | 25.60                                                   | 28.50                                                    | 31.50  | 1                                     | 41.4                                                            | 24.2                                                        | 1                                                                    |
| 1KSMB33A                        | 1KSMB33CA                      | 28.20                                                   | 31.40                                                    | 34.70  | 1                                     | 45.7                                                            | 21.9                                                        | 1                                                                    |
| 1KSMB36A                        | 1KSMB36CA                      | 30.80                                                   | 34.20                                                    | 37.80  | 1                                     | 49.9                                                            | 20.0                                                        | 1                                                                    |
| 1KSMB39A                        | 1KSMB39CA                      | 33.30                                                   | 37.10                                                    | 41.00  | 1                                     | 53.9                                                            | 18.6                                                        | 1                                                                    |
| 1KSMB43A                        | 1KSMB43CA                      | 36.80                                                   | 40.90                                                    | 45.20  | 1                                     | 59.3                                                            | 16.9                                                        | 1                                                                    |
| 1KSMB47A                        | 1KSMB47CA                      | 40.20                                                   | 44.70                                                    | 49.40  | 1                                     | 64.8                                                            | 15.4                                                        | 1                                                                    |
| 1KSMB51A                        | 1KSMB51CA                      | 43.60                                                   | 48.50                                                    | 53.60  | 1                                     | 70.1                                                            | 14.3                                                        | 1                                                                    |
| 1KSMB56A                        | 1KSMB56CA                      | 47.80                                                   | 53.20                                                    | 58.80  | 1                                     | 77.0                                                            | 13.0                                                        | 1                                                                    |
| 1KSMB62A                        | 1KSMB62CA                      | 53.00                                                   | 58.90                                                    | 65.10  | 1                                     | 85.0                                                            | 11.8                                                        | 1                                                                    |
| 1KSMB68A                        | 1KSMB68CA                      | 58.10                                                   | 64.60                                                    | 71.40  | 1                                     | 92.0                                                            | 10.9                                                        | 1                                                                    |
| 1KSMB75A                        | 1KSMB75CA                      | 64.10                                                   | 71.30                                                    | 78.80  | 1                                     | 103.0                                                           | 9.7                                                         | 1                                                                    |
| 1KSMB82A                        | 1KSMB82CA                      | 70.10                                                   | 77.90                                                    | 86.10  | 1                                     | 113.0                                                           | 8.8                                                         | 1                                                                    |
| 1KSMB91A                        | 1KSMB91CA                      | 77.80                                                   | 86.50                                                    | 95.50  | 1                                     | 125.0                                                           | 8.0                                                         | 1                                                                    |
| 1KSMB100A                       | 1KSMB100CA                     | 85.50                                                   | 95.00                                                    | 105.00 | 1                                     | 137.0                                                           | 7.3                                                         | 1                                                                    |
| 1KSMB110A                       | 1KSMB110CA                     | 94.00                                                   | 105.00                                                   | 116.00 | 1                                     | 152.0                                                           | 6.6                                                         | 1                                                                    |
| 1KSMB120A                       | 1KSMB120CA                     | 102.00                                                  | 114.00                                                   | 126.00 | 1                                     | 165.0                                                           | 6.1                                                         | 1                                                                    |
| 1KSMB130A                       | 1KSMB130CA                     | 111.00                                                  | 124.00                                                   | 137.00 | 1                                     | 179.0                                                           | 5.6                                                         | 1                                                                    |
| 1KSMB150A                       | 1KSMB150CA                     | 128.00                                                  | 143.00                                                   | 158.00 | 1                                     | 207.0                                                           | 4.8                                                         | 1                                                                    |
| 1KSMB160A                       | 1KSMB160CA                     | 136.00                                                  | 152.00                                                   | 168.00 | 1                                     | 219.0                                                           | 4.6                                                         | 1                                                                    |
| 1KSMB170A                       | 1KSMB170CA                     | 144.50                                                  | 162.00                                                   | 179.00 | 1                                     | 234.0                                                           | 4.3                                                         | 1                                                                    |
| 1KSMB180A                       | 1KSMB180CA                     | 153.00                                                  | 171.00                                                   | 189.00 | 1                                     | 246.0                                                           | 4.1                                                         | 1                                                                    |

For bidirectional type having  $V_R$  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.

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

Figure 1 - TVS Transients Clamping Waveform

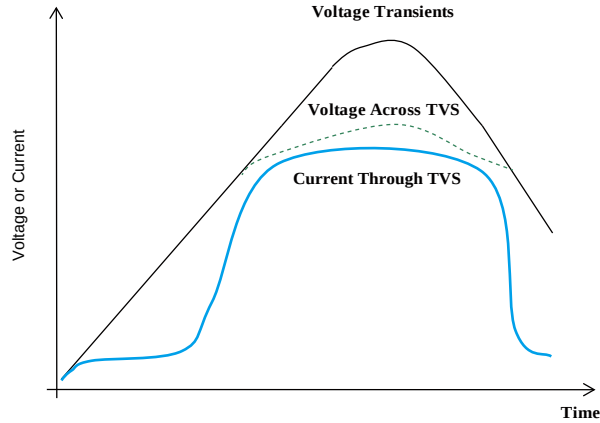


Figure 2 - Peak Pulse Power Rating Curve

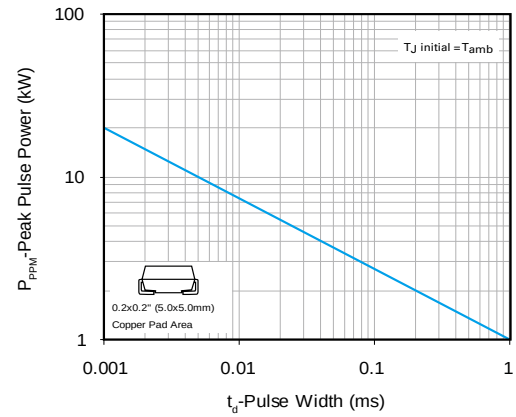


Figure 3 - Peak Pulse Power Derating Curve

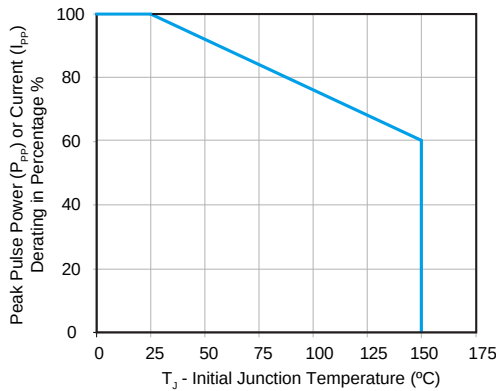


Figure 4 - Pulse Waveform

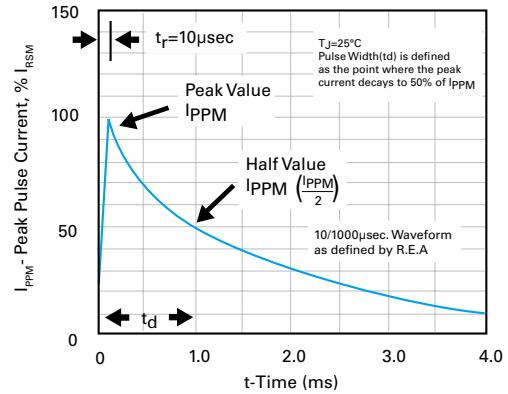


Figure 5 - Typical Junction Capacitance

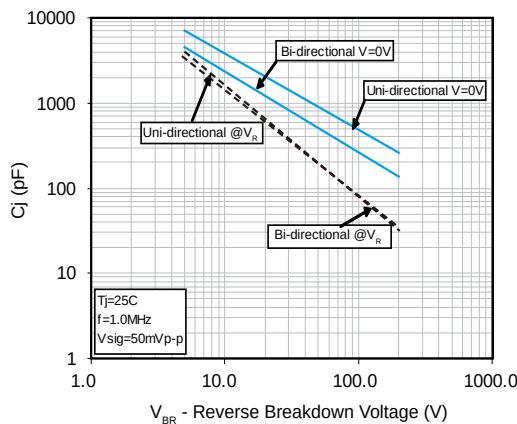
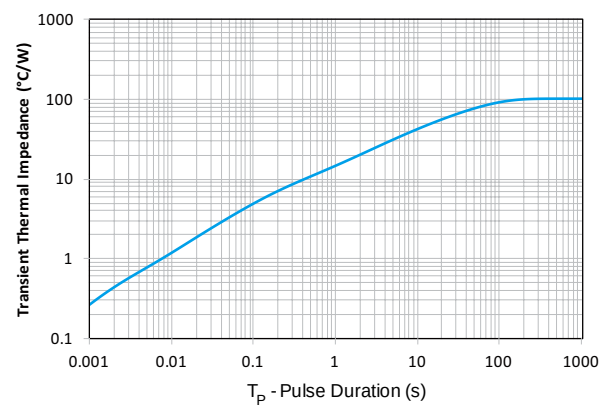
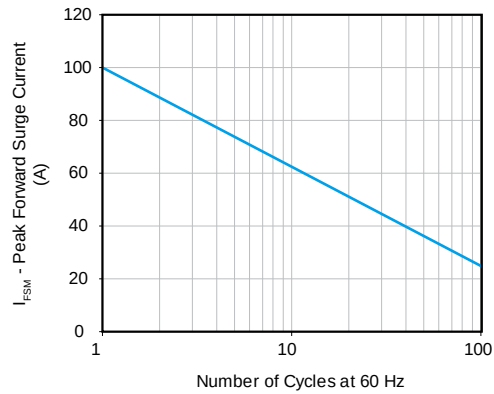


Figure 6 - Typical Transient Thermal Impedance



**Figure 7 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only**



**Figure 8 - Peak Forward Voltage Drop vs Peak Forward Current (Typical Values)**

