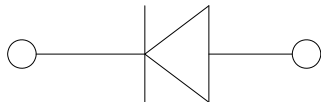
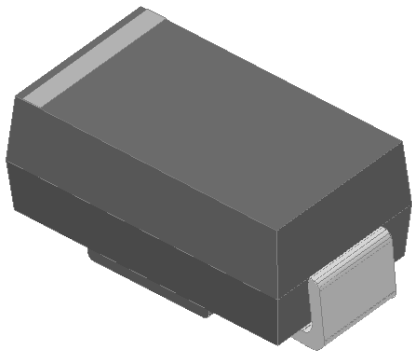


Surface Mount Zener Diodes



Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

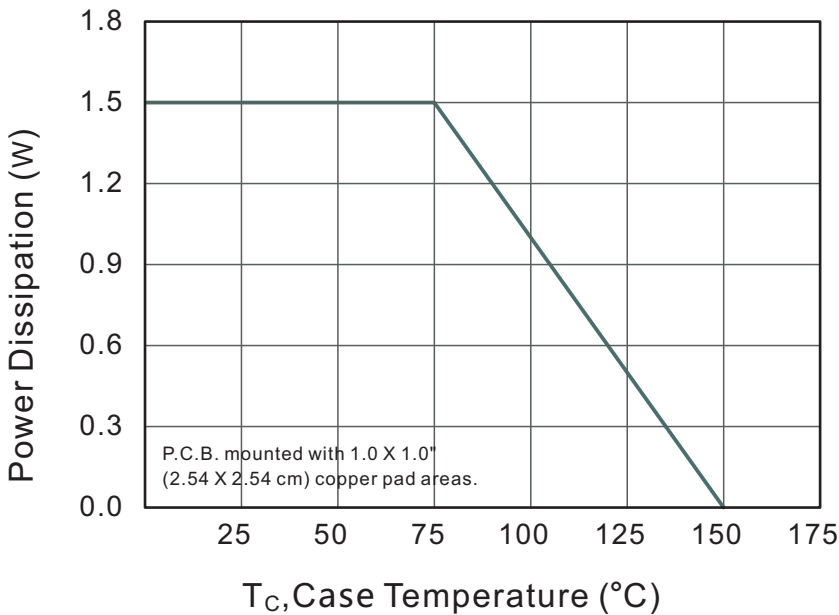
Mechanical Data

- **Package:** DO-214AC (SMA)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )

| Parameter                                  | Symbol         | Value         | Unit |
|--------------------------------------------|----------------|---------------|------|
| Power Dissipation at T <sub>L</sub> =75°C  | P <sub>D</sub> | 1.5           | W    |
| Forward Voltage at I <sub>F</sub> = 200 mA | V <sub>F</sub> | 1.5           | V    |
| Junction Temperature Range                 | T <sub>J</sub> | - 55 to + 150 | °C   |
| Storage Temperature Range                  | T <sub>s</sub> | - 55 to + 150 | °C   |

Fig.1 Maximum Continuous Power Derating



# 1SMA59XXBT3G SERIES

## ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

| TYPE         | Nominal Zener Voltage            |                 | Maximum Zener Impedance           |                                   |                 | Maximum Reverse Leakage Current |       | Maximum DC Zener Current |
|--------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|-------|--------------------------|
|              | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |       | I <sub>ZM</sub>          |
|              | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            | (V)   | (mA)                     |
| 1SMA5913BT3G | 3.3                              | 113.6           | 10                                | 500                               | 1.0             | 100                             | 1.0   | 454                      |
| 1SMA5914BT3G | 3.6                              | 104.2           | 9.0                               | 500                               | 1.0             | 75                              | 1.0   | 416                      |
| 1SMA5915BT3G | 3.9                              | 96.1            | 7.5                               | 500                               | 1.0             | 25                              | 1.0   | 384                      |
| 1SMA5916BT3G | 4.3                              | 87.2            | 6.0                               | 500                               | 1.0             | 5.0                             | 1.0   | 348                      |
| 1SMA5917BT3G | 4.7                              | 79.8            | 5.0                               | 500                               | 1.0             | 5.0                             | 1.5   | 319                      |
| 1SMA5918BT3G | 5.1                              | 73.5            | 4.0                               | 500                               | 1.0             | 5.0                             | 2.0   | 294                      |
| 1SMA5919BT3G | 5.6                              | 66.9            | 2.0                               | 250                               | 1.0             | 5.0                             | 3.0   | 267                      |
| 1SMA5920BT3G | 6.2                              | 60.5            | 2.0                               | 200                               | 1.0             | 5.0                             | 4.0   | 241                      |
| 1SMA5921BT3G | 6.8                              | 55.1            | 2.5                               | 200                               | 1.0             | 5.0                             | 5.2   | 220                      |
| 1SMA5922BT3G | 7.5                              | 50.0            | 3.0                               | 400                               | 0.5             | 5.0                             | 6.0   | 200                      |
| 1SMA5923BT3G | 8.2                              | 45.7            | 3.5                               | 400                               | 0.5             | 5.0                             | 6.5   | 182                      |
| 1SMA5924BT3G | 9.1                              | 41.2            | 4.0                               | 500                               | 0.5             | 5.0                             | 7.0   | 164                      |
| 1SMA5925BT3G | 10                               | 37.5            | 4.5                               | 500                               | 0.25            | 5.0                             | 8.0   | 150                      |
| 1SMA5926BT3G | 11                               | 34.1            | 5.5                               | 550                               | 0.25            | 5.0                             | 8.4   | 136                      |
| 1SMA5927BT3G | 12                               | 31.2            | 6.5                               | 550                               | 0.25            | 1.0                             | 9.1   | 125                      |
| 1SMA5928BT3G | 13                               | 28.8            | 7.0                               | 550                               | 0.25            | 1.0                             | 9.9   | 115                      |
| 1SMA5929BT3G | 15                               | 25.0            | 9.0                               | 600                               | 0.25            | 1.0                             | 11.4  | 100                      |
| 1SMA5930BT3G | 16                               | 23.4            | 10                                | 600                               | 0.25            | 1.0                             | 12.2  | 93                       |
| 1SMA5931BT3G | 18                               | 20.8            | 12                                | 650                               | 0.25            | 1.0                             | 13.7  | 83                       |
| 1SMA5932BT3G | 20                               | 18.7            | 14                                | 650                               | 0.25            | 1.0                             | 15.2  | 75                       |
| 1SMA5933BT3G | 22                               | 17.0            | 17.5                              | 650                               | 0.25            | 1.0                             | 16.7  | 68                       |
| 1SMA5934BT3G | 24                               | 15.6            | 19                                | 700                               | 0.25            | 1.0                             | 18.2  | 62                       |
| 1SMA5935BT3G | 27                               | 13.9            | 23                                | 700                               | 0.25            | 1.0                             | 20.6  | 55                       |
| 1SMA5936BT3G | 30                               | 12.5            | 26                                | 750                               | 0.25            | 1.0                             | 22.8  | 50                       |
| 1SMA5937BT3G | 33                               | 11.4            | 33                                | 800                               | 0.25            | 1.0                             | 25.1  | 45                       |
| 1SMA5938BT3G | 36                               | 10.4            | 38                                | 850                               | 0.25            | 1.0                             | 27.4  | 41                       |
| 1SMA5939BT3G | 39                               | 9.6             | 45                                | 900                               | 0.25            | 1.0                             | 29.7  | 38                       |
| 1SMA5940BT3G | 43                               | 8.7             | 53                                | 950                               | 0.25            | 1.0                             | 32.7  | 34                       |
| 1SMA5941BT3G | 47                               | 8.0             | 67                                | 1000                              | 0.25            | 1.0                             | 35.8  | 31                       |
| 1SMA5942BT3G | 51                               | 7.3             | 70                                | 1100                              | 0.25            | 1.0                             | 38.8  | 29                       |
| 1SMA5943BT3G | 56                               | 6.7             | 86                                | 1300                              | 0.25            | 1.0                             | 42.6  | 26                       |
| 1SMA5944BT3G | 62                               | 6.0             | 100                               | 1500                              | 0.25            | 1.0                             | 47.1  | 24                       |
| 1SMA5945BT3G | 68                               | 5.5             | 120                               | 1700                              | 0.25            | 1.0                             | 51.7  | 22                       |
| 1SMA5946BT3G | 75                               | 5.0             | 140                               | 2000                              | 0.25            | 1.0                             | 56.0  | 20                       |
| 1SMA5947BT3G | 82                               | 4.6             | 160                               | 2500                              | 0.25            | 1.0                             | 62.2  | 18                       |
| 1SMA5948BT3G | 91                               | 4.1             | 200                               | 3000                              | 0.25            | 1.0                             | 69.2  | 16                       |
| 1SMA5949BT3G | 100                              | 3.7             | 250                               | 3100                              | 0.25            | 1.0                             | 76.0  | 15                       |
| 1SMA5950BT3G | 110                              | 3.4             | 300                               | 4000                              | 0.25            | 1.0                             | 83.6  | 13                       |
| 1SMA5951BT3G | 120                              | 3.1             | 380                               | 4500                              | 0.25            | 1.0                             | 91.2  | 12                       |
| 1SMA5952BT3G | 130                              | 2.9             | 450                               | 5000                              | 0.25            | 1.0                             | 98.8  | 11                       |
| 1SMA5953BT3G | 150                              | 2.5             | 600                               | 6000                              | 0.25            | 1.0                             | 114.0 | 10                       |
| 1SMA5954BT3G | 160                              | 2.3             | 700                               | 6500                              | 0.25            | 1.0                             | 121.6 | 9.0                      |
| 1SMA5955BT3G | 180                              | 2.1             | 900                               | 7000                              | 0.25            | 1.0                             | 136.8 | 8.0                      |
| 1SMA5956BT3G | 200                              | 1.9             | 1200                              | 8000                              | 0.25            | 1.0                             | 152.0 | 7.0                      |
| 1SMA5957BT3G | 240                              | 1.5             | 1600                              | 9000                              | 0.25            | 1.0                             | 182.4 | 6.0                      |

Note :

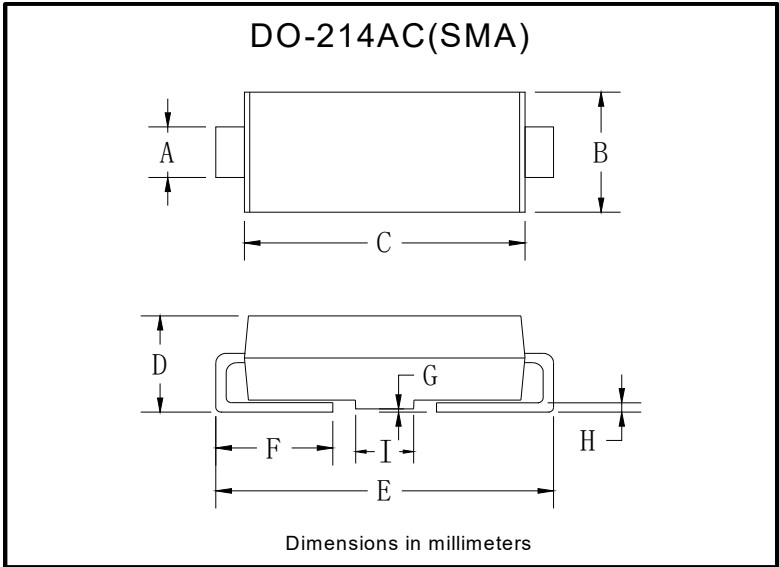
( 1 ) Suffix " B " indicates  $\pm 5\%$  tolerance.

# 1SMA59XXBT3G SERIES

## ■Ordering Information (Example)

| P/N          | PKG           | QTY  |
|--------------|---------------|------|
| 1SMA59XXBT3G | SMA(DO-214AC) | 2000 |

## ■ Outline Dimensions



| DO-214AC(SMA) |      |      |
|---------------|------|------|
| Dim           | Min  | Max  |
| A             | 1.25 | 1.58 |
| B             | 2.40 | 2.83 |
| C             | 4.00 | 4.75 |
| D             | 1.90 | 2.30 |
| E             | 4.93 | 5.28 |
| F             | 0.76 | 1.41 |
| G             | 0.05 | 0.20 |
| H             | 0.15 | 0.31 |
| I             | 1.70 | 2.10 |