

## Silicon Planar Zener Diodes

### FEATURES

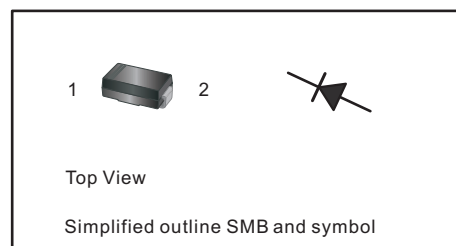
- Total power dissipation: Max. 1.5 W.
- Wide zener reverse voltage range 3.3V to 240V.
- Small plastic package suitable for surface mounted design.

### MECHANICAL DATA

- Case: SMB
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.055g / 0.002oz

### PINNING

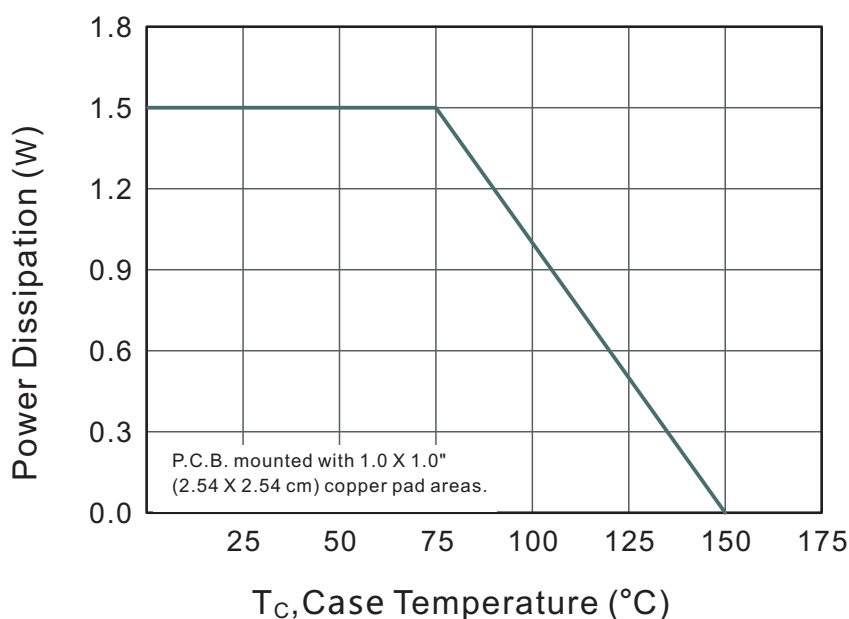
| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



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

| Parameter                                     | Symbol | Value         | Unit               |
|-----------------------------------------------|--------|---------------|--------------------|
| Power Dissipation at $T_L=75^{\circ}\text{C}$ | $P_D$  | 1.5           | W                  |
| Forward Voltage at $I_F = 200 \text{ mA}$     | $V_F$  | 1.5           | V                  |
| Junction Temperature Range                    | $T_J$  | - 55 to + 150 | $^{\circ}\text{C}$ |
| Storage Temperature Range                     | $T_s$  | - 55 to + 150 | $^{\circ}\text{C}$ |

Fig.1 Maximum Continuous Power Derating



Characteristics at T<sub>a</sub> = 25°C

| Type<br>(note1) | Marking<br>(note1) | Zener Voltage Range ( note2 )          |           |           |                    | Dynamic<br>Impedance                   | Reverse Current |                   | Admissible<br>Zener Current |
|-----------------|--------------------|----------------------------------------|-----------|-----------|--------------------|----------------------------------------|-----------------|-------------------|-----------------------------|
|                 |                    | V <sub>ZT</sub> ( at I <sub>ZT</sub> ) |           |           | at I <sub>ZT</sub> | Z <sub>zT</sub> ( at I <sub>ZT</sub> ) | I <sub>R</sub>  | at V <sub>R</sub> |                             |
|                 |                    | Min ( V )                              | Nom ( V ) | Max ( V ) | (mA)               | Max (Ω)                                | Max ( μA )      | ( V )             | I <sub>ZM</sub> (mA)        |
| 1SMB5913B       | 913B               | 3.13                                   | 3.3       | 3.47      | 113.6              | 10                                     | 100             | 1                 | 454                         |
| 1SMB5914B       | 914B               | 3.42                                   | 3.6       | 3.78      | 104.2              | 9.0                                    | 75              | 1                 | 416                         |
| 1SMB5915B       | 915B               | 3.70                                   | 3.9       | 4.10      | 96.1               | 7.5                                    | 25              | 1                 | 384                         |
| 1SMB5916B       | 916B               | 4.08                                   | 4.3       | 4.52      | 87.2               | 6.0                                    | 5               | 1                 | 348                         |
| 1SMB5917B       | 917B               | 4.46                                   | 4.7       | 4.94      | 79.8               | 5.0                                    | 5               | 1.5               | 319                         |
| 1SMB5918B       | 918B               | 4.84                                   | 5.1       | 5.36      | 73.5               | 4.0                                    | 5               | 2                 | 294                         |
| 1SMB5919B       | 919B               | 5.32                                   | 5.6       | 5.88      | 66.9               | 2.0                                    | 5               | 3                 | 267                         |
| 1SMB5920B       | 920B               | 5.89                                   | 6.2       | 6.51      | 60.5               | 2.0                                    | 5               | 4                 | 241                         |
| 1SMB5921B       | 921B               | 6.46                                   | 6.8       | 7.14      | 55                 | 2.5                                    | 5               | 5.2               | 220                         |
| 1SMB5922B       | 922B               | 7.12                                   | 7.5       | 7.88      | 50                 | 3.0                                    | 5               | 6                 | 200                         |
| 1SMB5923B       | 923B               | 7.79                                   | 8.2       | 8.61      | 45.7               | 3.5                                    | 5               | 6.5               | 182                         |
| 1SMB5924B       | 924B               | 8.60                                   | 9.1       | 9.56      | 41.2               | 4.0                                    | 5               | 7                 | 164                         |
| 1SMB5925B       | 925B               | 9.50                                   | 10        | 10.5      | 37.5               | 4.5                                    | 5               | 8                 | 150                         |
| 1SMB5926B       | 926B               | 10.4                                   | 11        | 11.6      | 34                 | 5.5                                    | 1               | 8.4               | 136                         |
| 1SMB5927B       | 927B               | 11.4                                   | 12        | 12.6      | 31.2               | 6.5                                    | 1               | 9                 | 125                         |
| 1SMB5928B       | 928B               | 12.35                                  | 13        | 14.1      | 28.8               | 7.0                                    | 1               | 9.9               | 115                         |
| 1SMB5929B       | 929B               | 13.8                                   | 15        | 15.8      | 25                 | 9.0                                    | 1               | 11.4              | 100                         |
| 1SMB5930B       | 930B               | 15.2                                   | 16        | 16.8      | 23.4               | 10                                     | 1               | 12.2              | 93                          |
| 1SMB5931B       | 931B               | 16.8                                   | 18        | 19.2      | 21                 | 12                                     | 1               | 13.7              | 83                          |
| 1SMB5932B       | 932B               | 19.0                                   | 20        | 21.2      | 19                 | 14                                     | 1               | 15.2              | 75                          |
| 1SMB5933B       | 933B               | 20.8                                   | 22        | 23.3      | 17                 | 18                                     | 1               | 16.7              | 68                          |
| 1SMB5934B       | 934B               | 22.8                                   | 24        | 25.2      | 16                 | 19                                     | 1               | 18.2              | 62                          |
| 1SMB5935B       | 935B               | 25.3                                   | 27        | 28.9      | 14                 | 23                                     | 1               | 20.6              | 55                          |
| 1SMB5936B       | 936B               | 28.2                                   | 30        | 32.0      | 12.5               | 26                                     | 1               | 23                | 50                          |
| 1SMB5937B       | 937B               | 31.3                                   | 33        | 34.9      | 11.4               | 33                                     | 1               | 25                | 45                          |
| 1SMB5938B       | 938B               | 34.2                                   | 36        | 37.9      | 10.4               | 38                                     | 1               | 27                | 41                          |
| 1SMB5939B       | 939B               | 37.2                                   | 39        | 41.5      | 9.6                | 45                                     | 1               | 30                | 38                          |
| 1SMB5940B       | 940B               | 40.9                                   | 43        | 45.6      | 8.7                | 53                                     | 1               | 33                | 34                          |
| 1SMB5941B       | 941B               | 44.9                                   | 47        | 49.8      | 8.0                | 67                                     | 1               | 36                | 31                          |
| 1SMB5942B       | 942B               | 48.6                                   | 51        | 54.0      | 7.3                | 70                                     | 1               | 39                | 29                          |
| 1SMB5943B       | 943B               | 53.6                                   | 56        | 58.8      | 6.7                | 86                                     | 1               | 42                | 26                          |
| 1SMB5944B       | 944B               | 58.9                                   | 62        | 65.6      | 6.0                | 100                                    | 1               | 47                | 24                          |
| 1SMB5945B       | 945B               | 64.6                                   | 68        | 71.7      | 5.5                | 120                                    | 1               | 52                | 22                          |
| 1SMB5946B       | 946B               | 71.2                                   | 75        | 78.8      | 5.0                | 140                                    | 1               | 57                | 20                          |
| 1SMB5947B       | 947B               | 77.9                                   | 82        | 87.0      | 4.6                | 160                                    | 1               | 62                | 18                          |
| 1SMB5948B       | 948B               | 86.0                                   | 91        | 96.0      | 4.1                | 200                                    | 1               | 69                | 16                          |
| 1SMB5949B       | 949B               | 95.0                                   | 100       | 105       | 3.7                | 250                                    | 1               | 76                | 15                          |
| 1SMB5950B       | 950B               | 104                                    | 110       | 116       | 3.4                | 300                                    | 1               | 84                | 13                          |
| 1SMB5951B       | 951B               | 114                                    | 120       | 127       | 3.1                | 380                                    | 1               | 91                | 12                          |
| 1SMB5952B       | 952B               | 125                                    | 130       | 142       | 2.9                | 450                                    | 1               | 100               | 11                          |
| 1SMB5953B       | 953B               | 140                                    | 150       | 157       | 2.5                | 600                                    | 1               | 114               | 10                          |
| 1SMB5954B       | 954B               | 152                                    | 160       | 168       | 2.3                | 700                                    | 1               | 121.6             | 9.0                         |
| 1SMB5955B       | 955B               | 168                                    | 180       | 189       | 2.1                | 900                                    | 1               | 136.8             | 8.0                         |
| 1SMB5956B       | 956B               | 189                                    | 200       | 211       | 1.9                | 1200                                   | 1               | 152               | 7.0                         |
| 1SMB5957B       | 957B               | 228                                    | 240       | 252       | 1.5                | 1600                                   | 1               | 182.4             | 6.0                         |

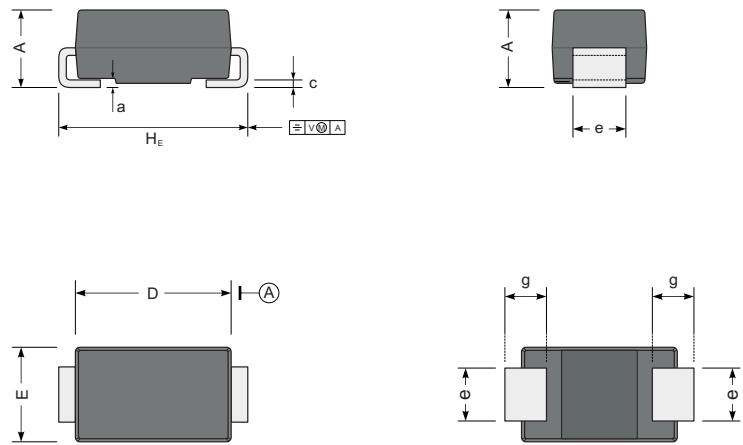
( 1 ) Suffix "A" indicates ±10% tolerance, Suffix "B" indicates ±5% tolerance

( 2 ) V<sub>ZT</sub> is tested with pulses (20 ms)

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMB



| UNIT |     | A   | D   | E   | H <sub>E</sub> | c    | e   | g   | a   |
|------|-----|-----|-----|-----|----------------|------|-----|-----|-----|
| mm   | max | 2.2 | 4.5 | 2.7 | 5.2            | 0.31 | 1.6 | 1.5 | 0.3 |
|      | min | 1.9 | 4.0 | 2.3 | 4.7            | 0.15 | 1.3 | 0.9 |     |
| mil  | max | 87  | 181 | 106 | 205            | 12   | 63  | 59  | 12  |
|      | min | 75  | 157 | 91  | 185            | 6    | 51  | 35  |     |

The recommended mounting pad size

