

Silicon Planar Zener Diodes

**FEATURES**

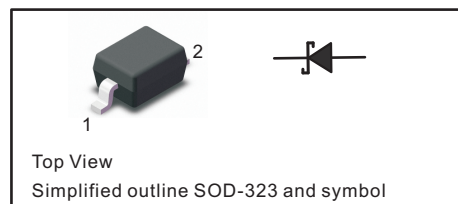
- Total power dissipation: Max. 200mW.
- Wide zener reverse voltage range 2.4V to 43V.
- Ideally suited for automated assembly processes

**MECHANICAL DATA**

- Case: SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 5.48mg / 0.00019oz

**PINNING**

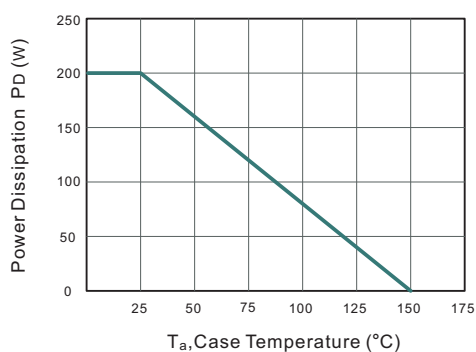
| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



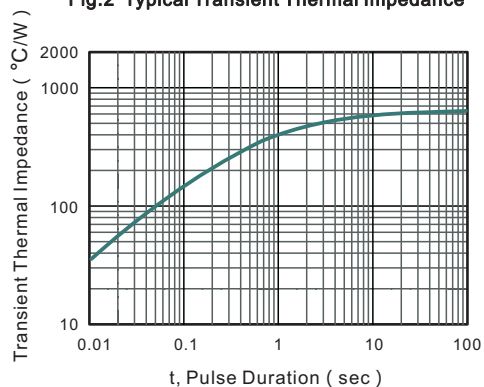
**Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )**

| Parameter                                      | Symbol          | Value      | Unit |
|--|-----------------|------------|------|
| Power Dissipation (NOTE 1)                     | $P_D$           | 200        | mW   |
| Forward Voltage at $I_F = 10$ mA(NOTE 2)       | $V_F$           | 0.9        | V    |
| Typical thermal resistance junction to ambient | $R_{\theta JA}$ | 625        | °C/W |
| Operating and Storage Temperature Range        | $T_j, T_{stg}$  | -55 ~ +150 | °C   |

**Fig.1 Power Derating Curve**



**Fig.2 Typical Transient Thermal Impedance**





Characteristics at Ta = 25°C

| Type       | Marking | Zener Voltage Range<br>(NOTE 2)      |         |         |                 | Maximum Zener Impedance<br>(NOTE 3)  |                                      |                 | Maximum Reverse Current<br>(NOTE 2) |                | Typical Temperature Coefficient<br>@I <sub>ZTC</sub> mV/°C |      | Test Current<br>I <sub>ZTC</sub><br>mA |
|------------|---------|--------------------------------------|---------|---------|-----------------|--------------------------------------|--------------------------------------|-----------------|-------------------------------------|----------------|--|------|--|
|            |         | V <sub>ZT</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> | MIN  | MAX  |  |
|            |         | Min (V)                              | Nom (V) | Max (V) | (mA)            | (Ω)                                  | mA                                   | μA              | V                                   |                |  |      |  |
| BZT52C2V4S | WX      | 2.2                                  | 2.4     | 2.6     | 5               | 100                                  | 600                                  | 1               | 50                                  | 1              | -3.5   | 0    | 5                                      |
| BZT52C2V7S | W1      | 2.5                                  | 2.7     | 2.9     | 5               | 100                                  | 600                                  | 1               | 20                                  | 1              | -3.5   | 0    | 5                                      |
| BZT52C3V0S | W2      | 2.8                                  | 3       | 3.2     | 5               | 95                                   | 600                                  | 1               | 10                                  | 1              | -3.5   | 0    | 5                                      |
| BZT52C3V3S | W3      | 3.1                                  | 3.3     | 3.5     | 5               | 95                                   | 600                                  | 1               | 5                                   | 1              | -3.5   | 0    | 5                                      |
| BZT52C3V6S | W4      | 3.4                                  | 3.6     | 3.8     | 5               | 90                                   | 600                                  | 1               | 5                                   | 1              | -3.5   | 0    | 5                                      |
| BZT52C3V9S | W5      | 3.7                                  | 3.9     | 4.1     | 5               | 90                                   | 600                                  | 1               | 3                                   | 1              | -3.5   | 0    | 5                                      |
| BZT52C4V3S | W6      | 4                                    | 4.3     | 4.6     | 5               | 90                                   | 600                                  | 1               | 3                                   | 1              | -3.5   | 0    | 5                                      |
| BZT52C4V7S | W7      | 4.4                                  | 4.7     | 5       | 5               | 80                                   | 500                                  | 1               | 3                                   | 2              | -3.5   | 0.2  | 5                                      |
| BZT52C5V1S | W8      | 4.8                                  | 5.1     | 5.4     | 5               | 60                                   | 480                                  | 1               | 2                                   | 2              | -2.7   | 1.2  | 5                                      |
| BZT52C5V6S | W9      | 5.2                                  | 5.6     | 6       | 5               | 40                                   | 400                                  | 1               | 1                                   | 2              | -2   | 2.5  | 5                                      |
| BZT52C6V2S | WA      | 5.8                                  | 6.2     | 6.6     | 5               | 10                                   | 150                                  | 1               | 3                                   | 4              | 0.4  | 3.7  | 5                                      |
| BZT52C6V8S | WB      | 6.4                                  | 6.8     | 7.2     | 5               | 15                                   | 80                                   | 1               | 2                                   | 4              | 1.2  | 4.5  | 5                                      |
| BZT52C7V5S | WC      | 7                                    | 7.5     | 7.9     | 5               | 15                                   | 80                                   | 1               | 1                                   | 5              | 2.5  | 5.3  | 5                                      |
| BZT52C8V2S | WD      | 7.7                                  | 8.2     | 8.7     | 5               | 15                                   | 80                                   | 1               | 0.7                                 | 5              | 3.2  | 6.2  | 5                                      |
| BZT52C9V1S | WE      | 8.5                                  | 9.1     | 9.6     | 5               | 15                                   | 100                                  | 1               | 0.5                                 | 6              | 3.8  | 7    | 5                                      |
| BZT52C10S  | WF      | 9.4                                  | 10      | 10.6    | 5               | 20                                   | 150                                  | 1               | 0.2                                 | 7              | 4.5  | 8    | 5                                      |
| BZT52C11S  | WG      | 10.4                                 | 11      | 11.6    | 5               | 20                                   | 150                                  | 1               | 0.1                                 | 8              | 5.4  | 9    | 5                                      |
| BZT52C12S  | WH      | 11.4                                 | 12      | 12.7    | 5               | 25                                   | 150                                  | 1               | 0.1                                 | 8              | 6  | 10   | 5                                      |
| BZT52C13S  | WI      | 12.4                                 | 13      | 14.1    | 5               | 30                                   | 170                                  | 1               | 0.1                                 | 8              | 7  | 11   | 5                                      |
| BZT52C15S  | WJ      | 13.8                                 | 15      | 15.6    | 5               | 30                                   | 200                                  | 1               | 0.1                                 | 10.5           | 9.2  | 13   | 5                                      |
| BZT52C16S  | WK      | 15.3                                 | 16      | 17.1    | 5               | 40                                   | 200                                  | 1               | 0.1                                 | 11.2           | 10.4   | 14   | 5                                      |
| BZT52C18S  | WL      | 16.8                                 | 18      | 19.1    | 5               | 45                                   | 225                                  | 1               | 0.1                                 | 12.6           | 12.4   | 16   | 5                                      |
| BZT52C20S  | WM      | 18.8                                 | 20      | 21.2    | 5               | 55                                   | 225                                  | 1               | 0.1                                 | 14             | 14.4   | 18   | 5                                      |
| BZT52C22S  | WN      | 20.8                                 | 22      | 23.3    | 5               | 55                                   | 250                                  | 1               | 0.1                                 | 15.4           | 16.4   | 20   | 5                                      |
| BZT52C24S  | WO      | 22.8                                 | 24      | 25.6    | 5               | 70                                   | 250                                  | 1               | 0.1                                 | 16.8           | 18.4   | 22   | 5                                      |
| BZT52C27S  | WP      | 25.1                                 | 27      | 28.9    | 2               | 80                                   | 300                                  | 0.5             | 0.1                                 | 18.9           | 21.4   | 25.3 | 2                                      |
| BZT52C30S  | WQ      | 28                                   | 30      | 32      | 2               | 80                                   | 300                                  | 0.5             | 0.1                                 | 21             | 24.4   | 29.4 | 2                                      |
| BZT52C33S  | WR      | 31                                   | 33      | 35      | 2               | 80                                   | 325                                  | 0.5             | 0.1                                 | 23.1           | 27.4   | 33.4 | 2                                      |
| BZT52C36S  | WS      | 34                                   | 36      | 38      | 2               | 90                                   | 350                                  | 0.5             | 0.1                                 | 25.2           | 30.4   | 37.4 | 2                                      |
| BZT52C39S  | WT      | 37                                   | 39      | 41      | 2               | 130                                  | 350                                  | 0.5             | 0.1                                 | 27.3           | 33.4   | 41.2 | 2                                      |
| BZT52C43S  | WU      | 40                                   | 43      | 46      | 2               | 100                                  | 700                                  | 1               | 0.1                                 | 32             | 10   | 12   | 5                                      |

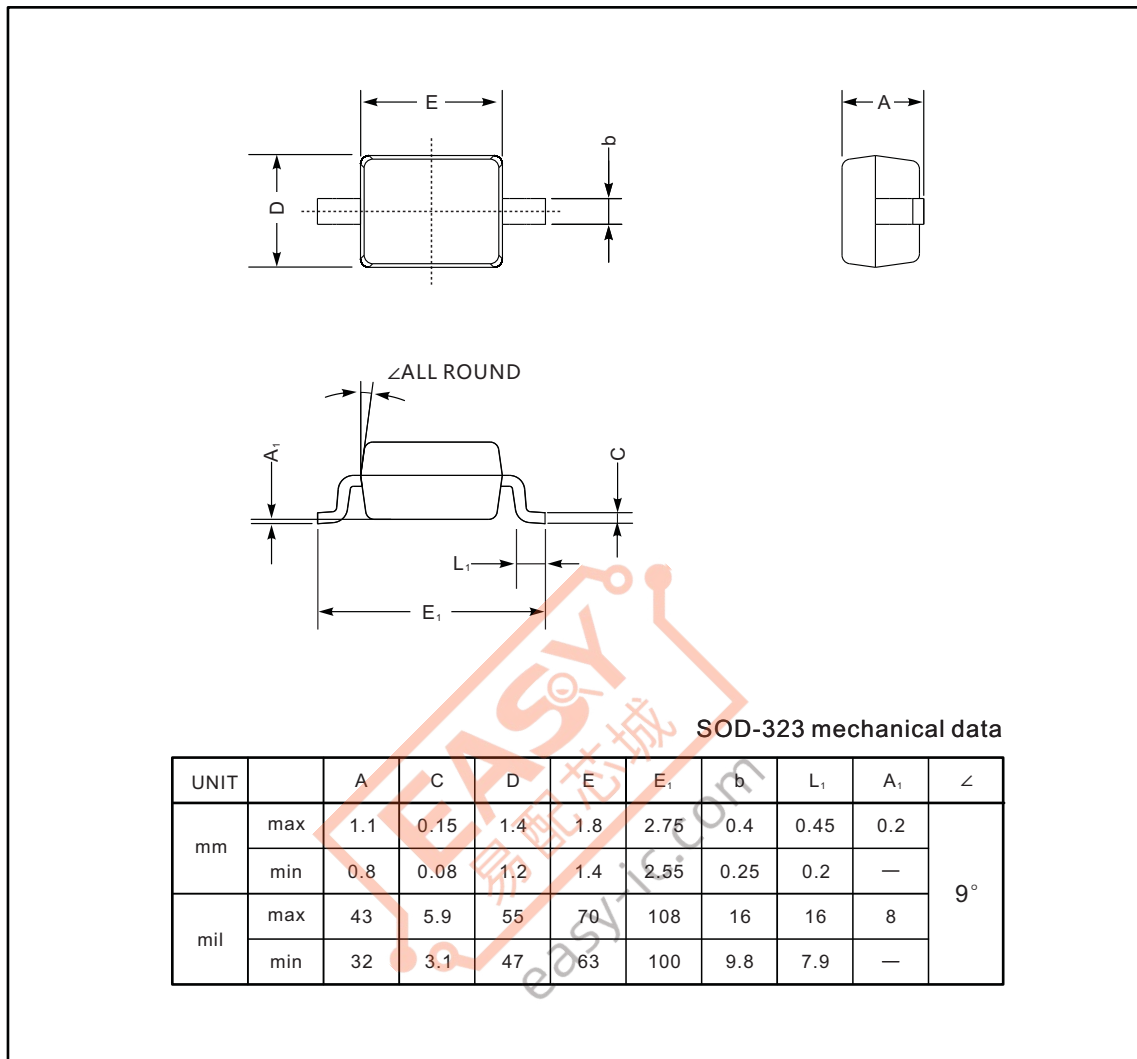
NOTE: 1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.  
2. Short duration test pulse used to minimize self-heating effect.  
3. f = 1kHz.



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-323



The recommended mounting pad size

