



# DATA SHEET

## BZT52-B4V3 SERIES

### SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 4.3 to 39 Volts **POWER** 410 mWatts

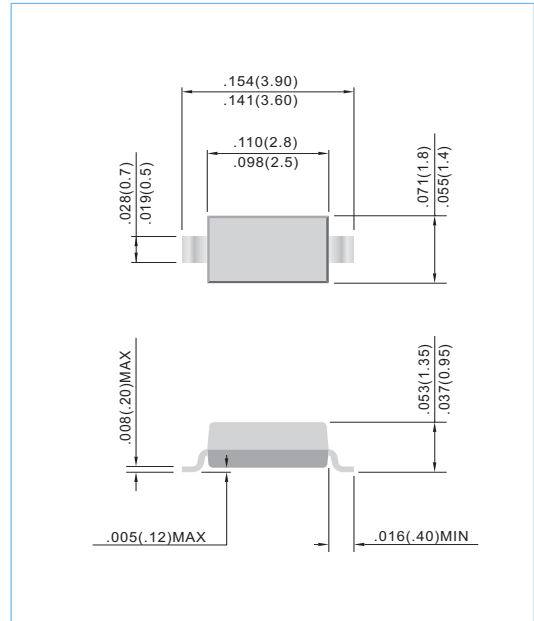
**SOD-123** Unit: inch (mm)

#### FEATURES

- Planar Die construction
- 410mW Power Dissipation
- Zener Voltages from 4.3~39V
- Ideally Suited for Automated Assembly Processes
- Both normal and Pb free product are available :
  - Normal : 80~95% Sn, 5~20% Pb
  - Pb free: 99% Sn above

#### MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-202G, Method 208
- Polarity: See Diagram Below
- Approx. Weight: 0.0102 grams
- Mounting Position: Any



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter   | Symbol           | Value       | Units |
|---|------------------|-------------|-------|
| Maximum Forward Voltage Drop at IF=10mA   | V <sub>F</sub>   | 0.9         | V     |
| Power Dissipation (Notes A) at 25°C   | P <sub>D</sub>   | 410         | mW    |
| Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B) | I <sub>FSM</sub> | 2.0         | Amps  |
| Operating Junction and Storage Temperature Range  | T <sub>J</sub>   | -55 to +150 | °C    |

**NOTES:**

A. Mounted on 5.0mm<sup>2</sup>(.013mm thick) land areas.

B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.



| Part Number                   | Marking Code | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Maximum Zener Impedance           |     |                                   |      | Maximum Leakage Current         |      | Package |
|-------------------------------|--------------|----------------------------------|--------|--------|-----------------------------------|-----|-----------------------------------|------|---------------------------------|------|---------|
|                               |              |                                  |        |        | Z <sub>ZT</sub> @ I <sub>ZT</sub> |     | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub> @ V <sub>R</sub> |      |         |
|                               |              | Nom. V                           | Min. V | Max. V | Ω                                 | mA  | Ω                                 | mA   | uA                              | V    |         |
| <b>410 mWatt ZENER DIODES</b> |              |                                  |        |        |                                   |     |                                   |      |                                 |      |         |
| BZT52-B4V3                    | 4B3          | 4.3                              | 4.21   | 4.39   | 95                                | 5.0 | 500                               | 1.00 | 5.0                             | 1.0  | SOD-123 |
| BZT52-B4V7                    | 4B7          | 4.7                              | 4.61   | 4.79   | 78                                | 5.0 | 500                               | 1.00 | 5.0                             | 2.0  | SOD-123 |
| BZT52-B5V1                    | 5B1          | 5.1                              | 5.00   | 5.20   | 60                                | 5.0 | 480                               | 1.00 | 0.1                             | 0.8  | SOD-123 |
| BZT52-B5V6                    | 5B6          | 5.6                              | 5.49   | 5.71   | 40                                | 5.0 | 400                               | 1.00 | 0.1                             | 1.0  | SOD-123 |
| BZT52-B6V2                    | 6B2          | 6.2                              | 6.08   | 6.32   | 10                                | 5.0 | 200                               | 1.00 | 0.1                             | 2.0  | SOD-123 |
| BZT52-B6V8                    | 6B8          | 6.8                              | 6.66   | 6.94   | 8                                 | 5.0 | 150                               | 1.00 | 0.1                             | 3.0  | SOD-123 |
| BZT52-B7V5                    | 7B5          | 7.5                              | 7.35   | 7.65   | 7                                 | 5.0 | 50                                | 1.00 | 0.1                             | 5.0  | SOD-123 |
| BZT52-B8V2                    | 8B2          | 8.2                              | 8.04   | 8.36   | 7                                 | 5.0 | 50                                | 1.00 | 0.1                             | 6.0  | SOD-123 |
| BZT52-B9V1                    | 9B1          | 9.1                              | 8.92   | 9.28   | 10                                | 5.0 | 50                                | 1.00 | 0.1                             | 7.0  | SOD-123 |
| BZT52-B10                     | 10B          | 10                               | 9.80   | 10.20  | 15                                | 5.0 | 70                                | 1.00 | 0.1                             | 7.5  | SOD-123 |
| BZT52-B11                     | 11B          | 11                               | 10.78  | 11.22  | 20                                | 5.0 | 70                                | 1.00 | 0.1                             | 8.5  | SOD-123 |
| BZT52-B12                     | 12B          | 12                               | 11.76  | 12.24  | 20                                | 5.0 | 90                                | 1.00 | 0.1                             | 9.0  | SOD-123 |
| BZT52-B13                     | 13B          | 13                               | 12.74  | 13.26  | 25                                | 5.0 | 110                               | 1.00 | 0.1                             | 10.0 | SOD-123 |
| BZT52-B14                     | 14B          | 14                               | 13.72  | 14.28  | 25                                | 5.0 | 110                               | 1.00 | 0.1                             | 10.5 | SOD-123 |
| BZT52-B15                     | 15B          | 15                               | 14.70  | 15.30  | 30                                | 5.0 | 110                               | 1.00 | 0.1                             | 11.0 | SOD-123 |
| BZT52-B16                     | 16B          | 16                               | 15.68  | 16.32  | 40                                | 5.0 | 170                               | 1.00 | 0.1                             | 12.0 | SOD-123 |
| BZT52-B17                     | 17B          | 17                               | 16.66  | 17.34  | 40                                | 5.0 | 170                               | 1.00 | 0.1                             | 13.0 | SOD-123 |
| BZT52-B18                     | 18B          | 18                               | 17.64  | 18.36  | 50                                | 5.0 | 170                               | 1.00 | 0.1                             | 14.0 | SOD-123 |
| BZT52-B20                     | 20B          | 20                               | 19.60  | 20.40  | 50                                | 5.0 | 220                               | 1.00 | 0.1                             | 15.0 | SOD-123 |
| BZT52-B22                     | 22B          | 22                               | 21.56  | 22.44  | 55                                | 5.0 | 220                               | 1.00 | 0.1                             | 17.0 | SOD-123 |
| BZT52-B24                     | 24B          | 24                               | 23.52  | 24.48  | 80                                | 5.0 | 220                               | 1.00 | 0.1                             | 18.0 | SOD-123 |
| BZT52-B27                     | 27B          | 27                               | 26.46  | 27.54  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 20.0 | SOD-123 |
| BZT52-B28                     | 28B          | 28                               | 27.44  | 28.56  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 22.0 | SOD-123 |
| BZT52-B30                     | 30B          | 30                               | 29.40  | 30.60  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 22.5 | SOD-123 |
| BZT52-B33                     | 33B          | 33                               | 32.34  | 33.66  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 25.0 | SOD-123 |
| BZT52-B36                     | 36B          | 36                               | 35.28  | 36.72  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 27.0 | SOD-123 |
| BZT52-B39                     | 39B          | 39                               | 38.22  | 39.78  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 29.0 | SOD-123 |

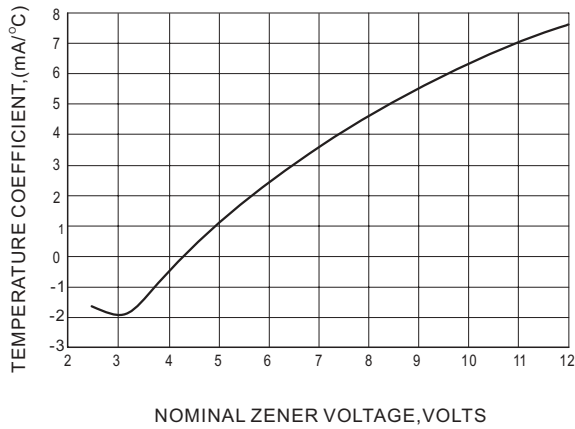


Fig.1 TEMPERATURE COEFFICIENTS

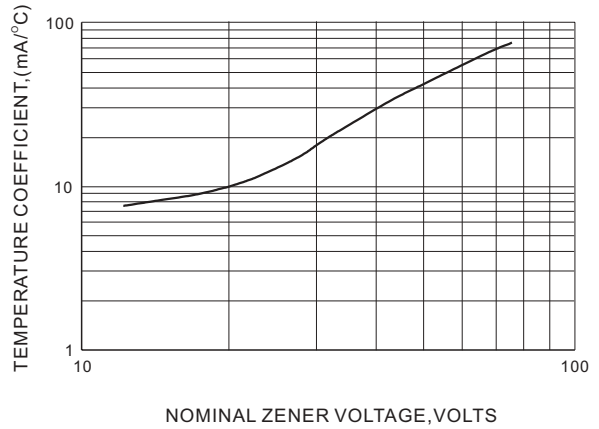


Fig.2 TEMPERATURE COEFFICIENTS

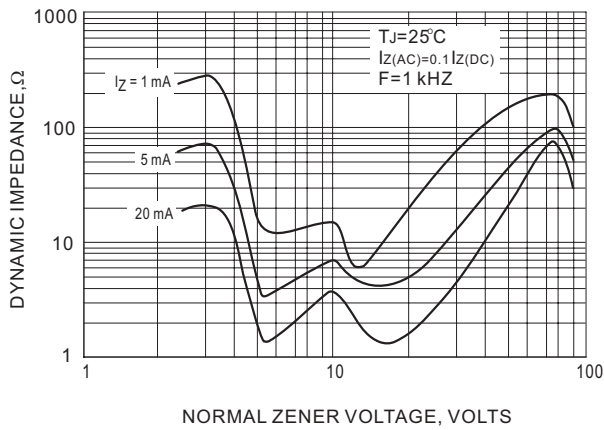


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

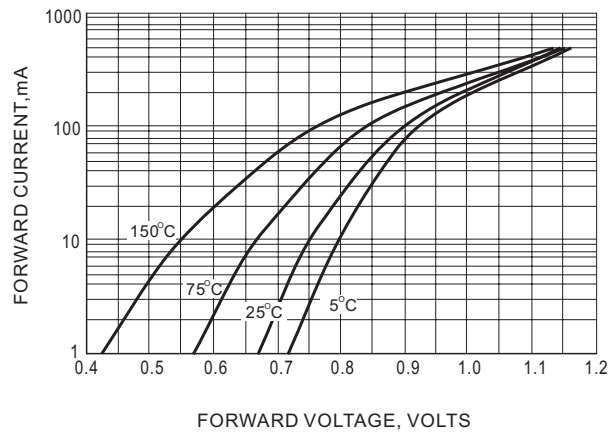


Fig.4 TYPICAL FORWARD VOLTAGE

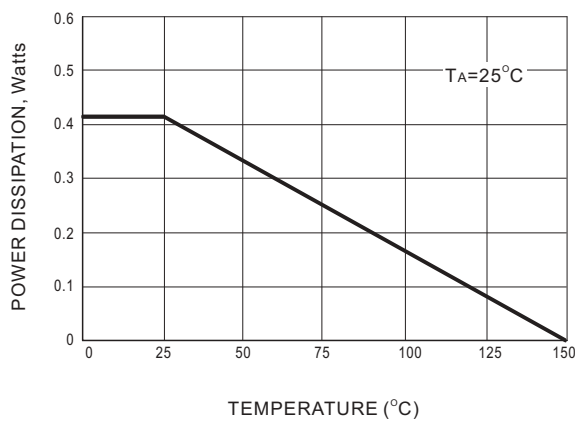


Fig.5 STEADY STATE POWER DERATING

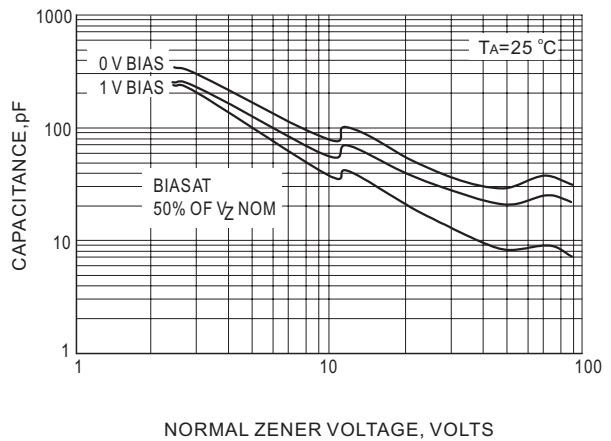


Fig.6 TYPICAL CAPACITANCE

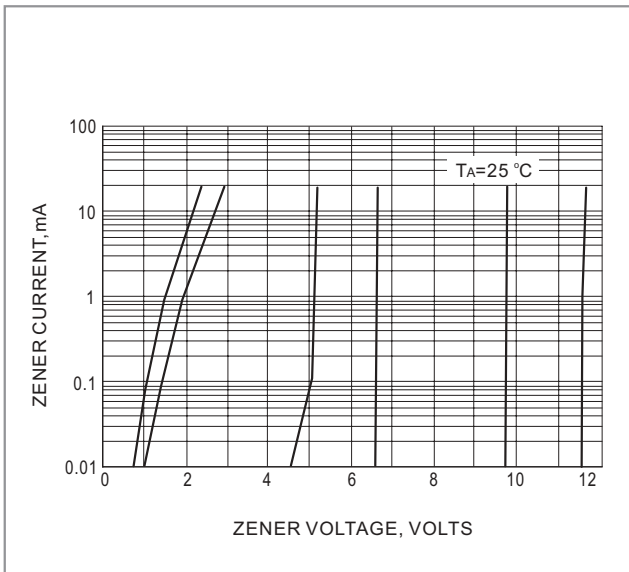


Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

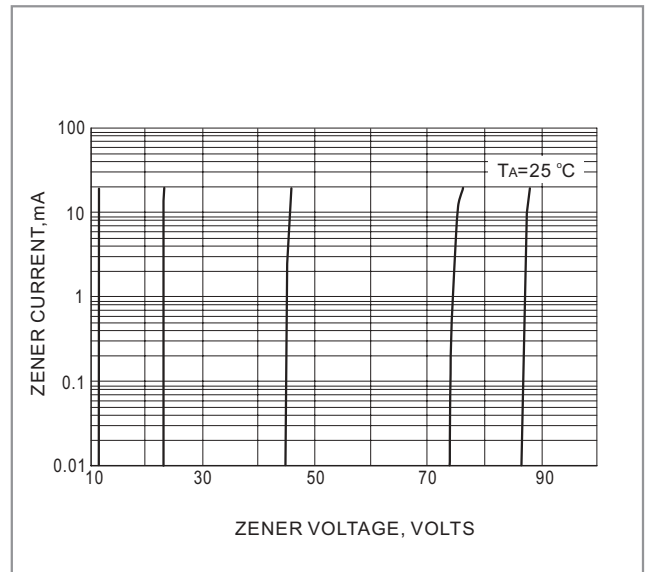


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

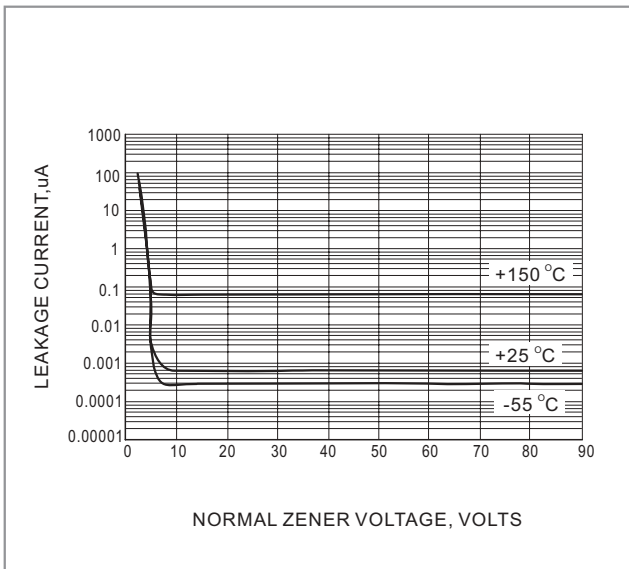
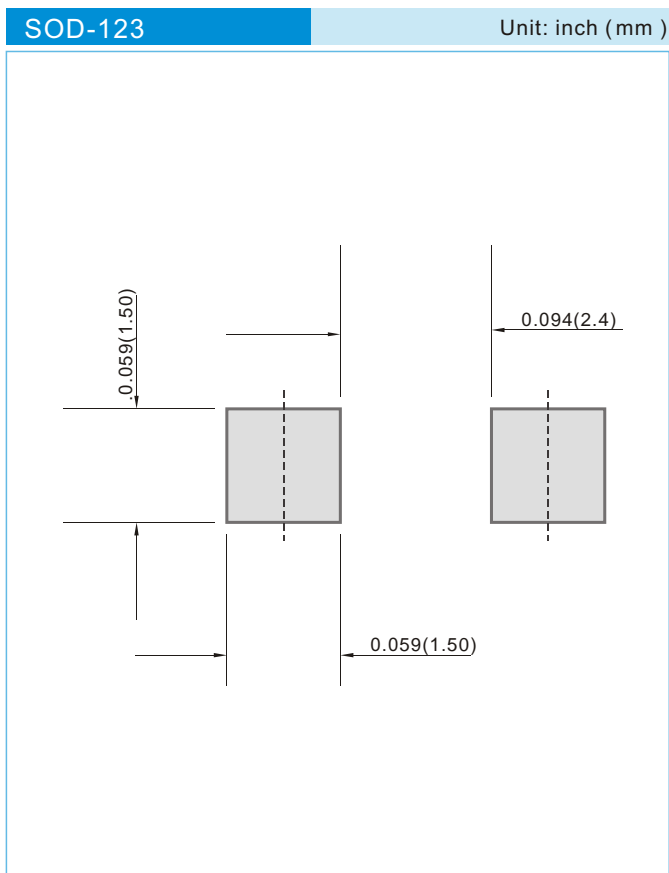


Fig.9 TYPICAL LEAKAGE CURRENT



## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3.0K per 7" plastic Reel

## LEGAL STATEMENT

### IMPORTANT NOTICE

This information is intended to unambiguously characterize the product in order to facilitate the customer's evaluation of the device in the application. The information will help the customer's technical experts determine that the device is compatible and interchangeable with similar devices made by other vendors. The information in this data sheet is believed to be reliable and accurate. The specifications and information herein are subject to change without notice. New products and improvements in products and product characterization are constantly in process. Therefore, the factory should be consulted for the most recent information and for any special characteristics not described or specified.

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