



# THE DATASHEET OF BZT52-B43\_R1\_00001

# BZT52-B2V4~BZT52-B75

## SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 2.4 to 75 Volt **POWER** 410 mWatt

**SOD-123**

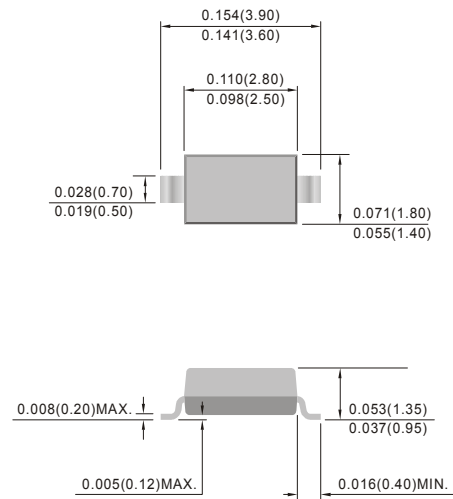
Unit : inch(mm)

### FEATURES

- Planar Die construction
- 410mW Power Dissipation
- Zener Voltages from 2.4~75V
- Ideally Suited for Automated Assembly Processes
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std. . (Halogen Free)

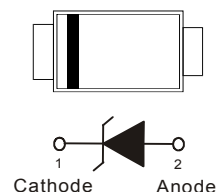
### MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: See Diagram Below
- Approx. Weight: 0.0004 ounces, 0.01 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| Parameter                                                    |                              | Symbol          | Value       | Units |
|--------------------------------------------------------------|------------------------------|-----------------|-------------|-------|
| Maximum Power Dissipation (Note 1)                           |                              | P <sub>D</sub>  | 410         | mW    |
| Forward Voltage Drop at I <sub>F</sub> =10mA                 |                              | V <sub>F</sub>  | 0.9         | V     |
| Thermal Resistance                                           | Junction to Ambient (Note 2) | R <sub>JA</sub> | 430         | °C/W  |
|                                                              | Junction to Lead             | R <sub>JL</sub> | 320         |       |
| Operating Junction Temperature and Storage Temperature Range |                              | T <sub>J</sub>  | -55 to +150 | °C    |



### NOTES:

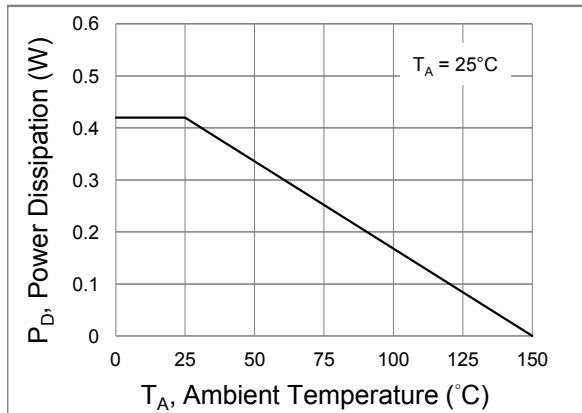
1. Mounted on 48 cm<sup>2</sup> FR-4 PCB .
2. Mounted on a FR-4 PCB, with minimum recommended Pad



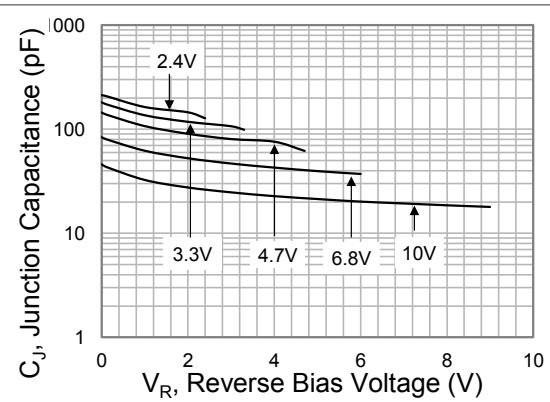
## BZT52-B2V4~BZT52-B75

| Part Number             | Nominal Zener Voltage            |        |        | Max. Zener Impedance              |     |                                   |      | Max Reverse Leakage Current     |      | Marking Code |
|-------------------------|----------------------------------|--------|--------|-----------------------------------|-----|-----------------------------------|------|---------------------------------|------|--------------|
|                         | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | 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   | μA                              | V    |              |
| 410 mWatts Zener Diodes |                                  |        |        |                                   |     |                                   |      |                                 |      |              |
| BZT52-B2V4              | 2.4                              | 2.35   | 2.45   | 85                                | 5.0 | 600                               | 1.00 | 100                             | 1.0  | W1           |
| BZT52-B2V7              | 2.7                              | 2.64   | 2.75   | 83                                | 5.0 | 600                               | 1.00 | 75                              | 1.0  | W2           |
| BZT52-B3                | 3.0                              | 2.94   | 3.06   | 95                                | 5.0 | 600                               | 1.00 | 50                              | 1.0  | W3           |
| BZT52-B3V3              | 3.3                              | 3.23   | 3.37   | 95                                | 5.0 | 600                               | 1.00 | 25                              | 1.0  | W4           |
| BZT52-B3V6              | 3.6                              | 3.52   | 3.67   | 95                                | 5.0 | 600                               | 1.00 | 15                              | 1.0  | W5           |
| BZT52-B3V9              | 3.9                              | 3.82   | 3.98   | 95                                | 5.0 | 600                               | 1.00 | 10                              | 1.0  | W6           |
| BZT52-B4V3              | 4.3                              | 4.21   | 4.39   | 95                                | 5.0 | 600                               | 1.00 | 5.0                             | 1.0  | W7           |
| BZT52-B4V7              | 4.7                              | 4.61   | 4.79   | 78                                | 5.0 | 500                               | 1.00 | 5.0                             | 1.0  | W8           |
| BZT52-B5V1              | 5.1                              | 5.00   | 5.20   | 60                                | 5.0 | 480                               | 1.00 | 0.1                             | 0.8  | W9           |
| BZT52-B5V6              | 5.6                              | 5.49   | 5.71   | 40                                | 5.0 | 400                               | 1.00 | 0.1                             | 1.0  | WA           |
| BZT52-B6V2              | 6.2                              | 6.08   | 6.32   | 10                                | 5.0 | 150                               | 1.00 | 0.1                             | 2.0  | WB           |
| BZT52-B6V8              | 6.8                              | 6.66   | 6.94   | 8                                 | 5.0 | 80                                | 1.00 | 0.1                             | 3.0  | WC           |
| BZT52-B7V5              | 7.5                              | 7.35   | 7.65   | 7                                 | 5.0 | 80                                | 1.00 | 0.1                             | 5.0  | WD           |
| BZT52-B8V2              | 8.2                              | 8.04   | 8.36   | 7                                 | 5.0 | 80                                | 1.00 | 0.1                             | 6.0  | WE           |
| BZT52-B8V7              | 8.7                              | 8.53   | 8.87   | 7                                 | 5.0 | 100                               | 1.00 | 0.1                             | 6.5  | 87C          |
| BZT52-B9V1              | 9.1                              | 8.92   | 9.28   | 10                                | 5.0 | 100                               | 1.00 | 0.1                             | 7.0  | WF           |
| BZT52-B10               | 10                               | 9.80   | 10.20  | 15                                | 5.0 | 150                               | 1.00 | 0.1                             | 7.5  | WG           |
| BZT52-B11               | 11                               | 10.78  | 11.22  | 20                                | 5.0 | 150                               | 1.00 | 0.1                             | 8.5  | WH           |
| BZT52-B12               | 12                               | 11.76  | 12.24  | 20                                | 5.0 | 150                               | 1.00 | 0.1                             | 9.0  | WI           |
| BZT52-B13               | 13                               | 12.74  | 13.26  | 25                                | 5.0 | 170                               | 1.00 | 0.1                             | 10.0 | WK           |
| BZT52-B14               | 14                               | 13.72  | 14.28  | 25                                | 5.0 | 170                               | 1.00 | 0.1                             | 10.5 | WJ           |
| BZT52-B15               | 15                               | 14.70  | 15.30  | 30                                | 5.0 | 200                               | 1.00 | 0.1                             | 11.0 | WL           |
| BZT52-B16               | 16                               | 15.68  | 16.32  | 40                                | 5.0 | 200                               | 1.00 | 0.1                             | 12.0 | WM           |
| BZT52-B17               | 17                               | 16.66  | 17.34  | 40                                | 5.0 | 200                               | 1.00 | 0.1                             | 13.0 | 17C          |
| BZT52-B18               | 18                               | 17.64  | 18.36  | 50                                | 5.0 | 225                               | 1.00 | 0.1                             | 14.0 | WN           |
| BZT52-B20               | 20                               | 19.60  | 20.40  | 50                                | 5.0 | 225                               | 1.00 | 0.1                             | 15.0 | WO           |
| BZT52-B22               | 22                               | 21.56  | 22.44  | 55                                | 5.0 | 250                               | 1.00 | 0.1                             | 17.0 | WP           |
| BZT52-B24               | 24                               | 23.52  | 24.48  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 18.0 | WR           |
| BZT52-B27               | 27                               | 26.46  | 27.54  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 20.0 | WS           |
| BZT52-B28               | 28                               | 27.44  | 28.56  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 22.0 | 28C          |
| BZT52-B30               | 30                               | 29.40  | 30.60  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 22.5 | WT           |
| BZT52-B33               | 33                               | 32.34  | 33.66  | 80                                | 5.0 | 325                               | 1.00 | 0.1                             | 25.0 | WU           |
| BZT52-B36               | 36                               | 35.28  | 36.72  | 90                                | 5.0 | 350                               | 1.00 | 0.1                             | 27.0 | WW           |
| BZT52-B39               | 39                               | 38.22  | 39.78  | 90                                | 5.0 | 350                               | 1.00 | 0.1                             | 29.0 | WX           |
| BZT52-B43               | 43                               | 42.14  | 43.86  | 100                               | 5.0 | 375                               | 1.00 | 0.1                             | 32.0 | WY           |
| BZT52-B47               | 47                               | 46.06  | 47.94  | 100                               | 5.0 | 375                               | 1.00 | 0.1                             | 35.0 | WZ           |
| BZT52-B51               | 51                               | 49.98  | 52.02  | 100                               | 5.0 | 400                               | 1.00 | 0.1                             | 38.0 | XA           |
| BZT52-B56               | 56                               | 54.88  | 57.12  | 135                               | 2.5 | 1000                              | 1.00 | 0.1                             | 42.0 | X2           |
| BZT52-B62               | 62                               | 60.76  | 63.24  | 150                               | 2.5 | 1000                              | 1.00 | 0.1                             | 46.0 | X3           |
| BZT52-B68               | 68                               | 66.64  | 69.36  | 200                               | 2.5 | 1000                              | 1.00 | 0.1                             | 51.0 | X4           |
| BZT52-B75               | 75                               | 73.50  | 76.50  | 250                               | 2.5 | 1000                              | 1.00 | 0.1                             | 56.0 | X5           |

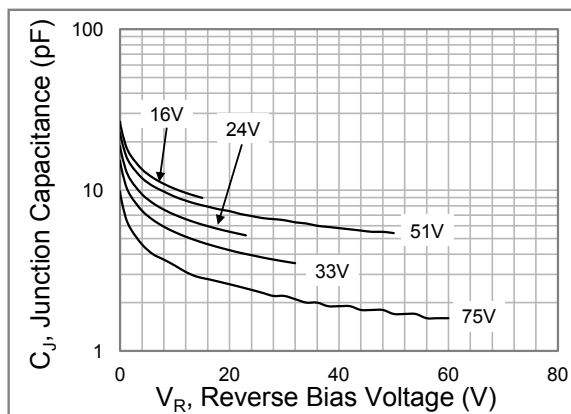
## BZT52-B2V4~BZT52-B75



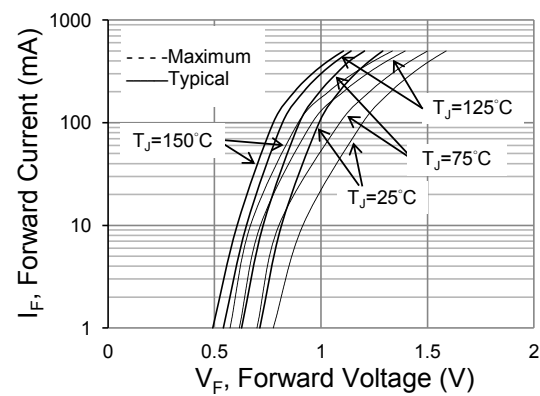
**Fig.1 Power Derating Curve**



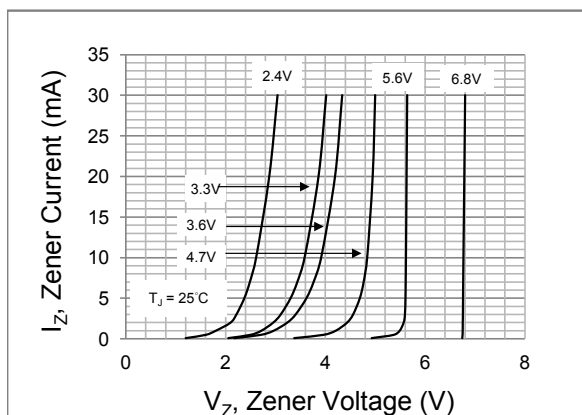
**Fig.2 Typical Junction Capacitance**



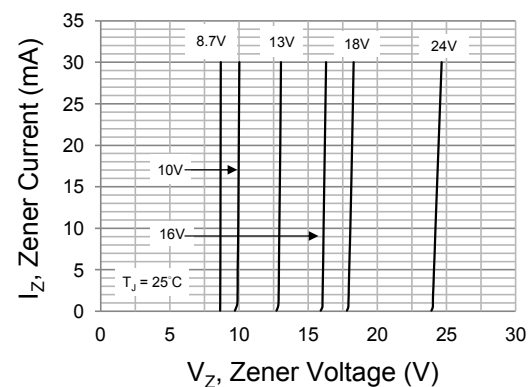
**Fig.3 Typical Junction Capacitance**



**Fig.4 Typical Forward Characteristics**

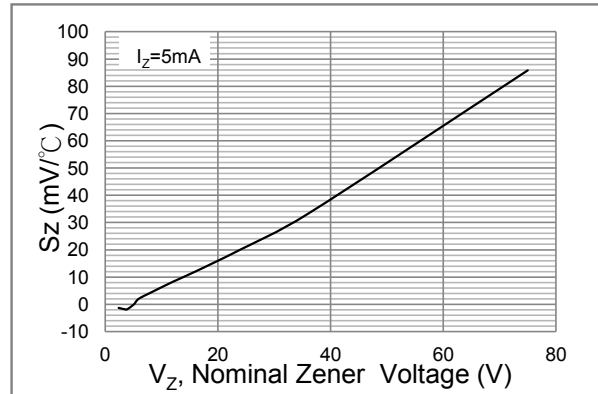
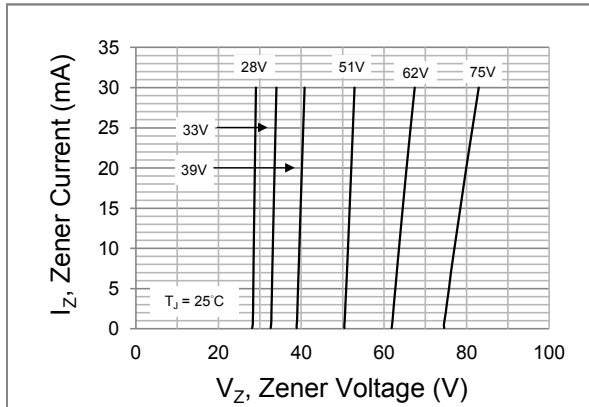


**Fig.5 Typical Zener Characteristics**



**Fig.6 Typical Zener Characteristics**

## BZT52-B2V4~BZT52-B75

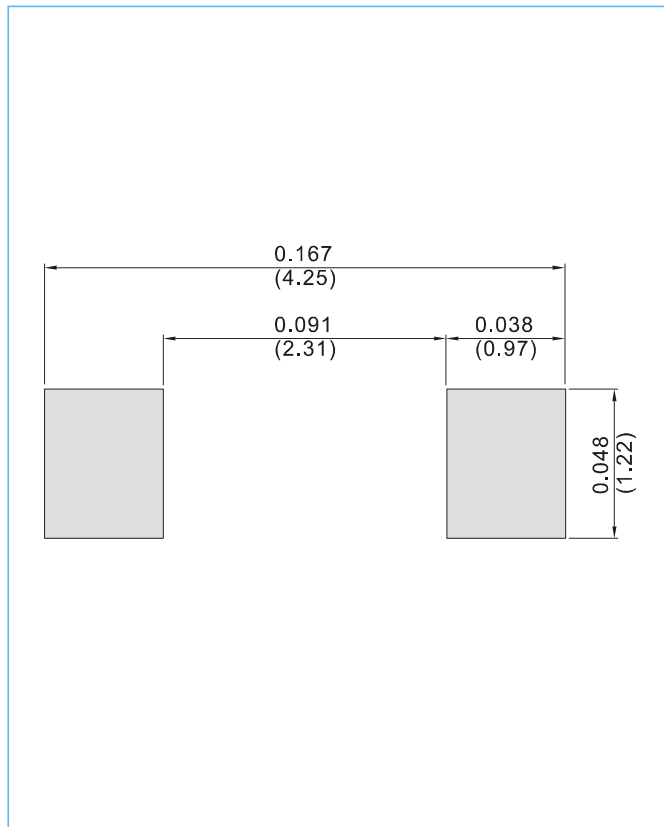


# BZT52-B2V4~BZT52-B75

## MOUNTING PAD LAYOUT

SOD-123

Unit : inch(mm)



## ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

## BZT52-B2V4~BZT52-B75

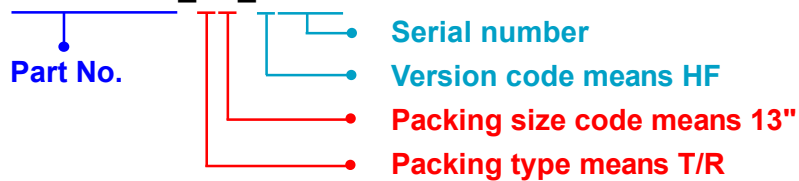
### Part No\_packing code\_Version

BZT52-B2V4\_R1\_00001

BZT52-B2V4\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|----------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                 | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | HF                         | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | RoHS                       | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                            |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                            |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                            |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                            |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                            |                      |                                       |



## **BZT52-B2V4~BZT52-B75**

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