



# BZT52-C2V4~BZT52-C75

## 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 RoHS 2.0
- Green molding compound as per IEC 61249 standard

### 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

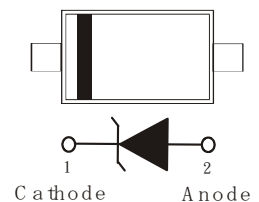


## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| PARAMETER  | SYMBOL          | VALUE       | UNITS |
|--|-----------------|-------------|-------|
| Maximum Power Dissipation (Note A) at 25°C                   | P <sub>D</sub>  | 410         | mW    |
| Typical Thermal Resistance                                   | R <sub>JA</sub> | 510         | °C/W  |
| Operating Junction Temperature and Storage Temperature Range | T <sub>J</sub>  | -55 to +150 | °C    |

### NOTES:

- Mounted on a FR-4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.
- Mounted on a FR-4 PCB, single-sided copper, mini pad.





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| 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    |              |
| <b>410 mWatts Zener Diodes</b> |                                  |        |        |                                   |     |                                   |      |                                 |      |              |
| BZT52-C2V4                     | 2.4                              | 2.28   | 2.52   | 85                                | 5.0 | 600                               | 1.00 | 100                             | 1.0  | W1           |
| BZT52-C2V7                     | 2.7                              | 2.57   | 2.84   | 83                                | 5.0 | 600                               | 1.00 | 75                              | 1.0  | W2           |
| BZT52-C3                       | 3.0                              | 2.85   | 3.15   | 95                                | 5.0 | 600                               | 1.00 | 50                              | 1.0  | W3           |
| BZT52-C3V3                     | 3.3                              | 3.14   | 3.47   | 95                                | 5.0 | 600                               | 1.00 | 25                              | 1.0  | W4           |
| BZT52-C3V6                     | 3.6                              | 3.42   | 3.78   | 95                                | 5.0 | 600                               | 1.00 | 15                              | 1.0  | W5           |
| BZT52-C3V9                     | 3.9                              | 3.71   | 4.10   | 95                                | 5.0 | 600                               | 1.00 | 10                              | 1.0  | W6           |
| BZT52-C4V3                     | 4.3                              | 4.09   | 4.52   | 95                                | 5.0 | 600                               | 1.00 | 5.0                             | 1.0  | W7           |
| BZT52-C4V7                     | 4.7                              | 4.47   | 4.94   | 78                                | 5.0 | 500                               | 1.00 | 5.0                             | 1.0  | W8           |
| BZT52-C5V1                     | 5.1                              | 4.85   | 5.36   | 60                                | 5.0 | 480                               | 1.00 | 0.1                             | 0.8  | W9           |
| BZT52-C5V6                     | 5.6                              | 5.32   | 5.88   | 40                                | 5.0 | 400                               | 1.00 | 0.1                             | 1.0  | WA           |
| BZT52-C6V2                     | 6.2                              | 5.89   | 6.51   | 10                                | 5.0 | 150                               | 1.00 | 0.1                             | 2.0  | WB           |
| BZT52-C6V8                     | 6.8                              | 6.46   | 7.14   | 8                                 | 5.0 | 80                                | 1.00 | 0.1                             | 3.0  | WC           |
| BZT52-C7V5                     | 7.5                              | 7.13   | 7.88   | 7                                 | 5.0 | 80                                | 1.00 | 0.1                             | 5.0  | WD           |
| BZT52-C8V2                     | 8.2                              | 7.79   | 8.61   | 7                                 | 5.0 | 80                                | 1.00 | 0.1                             | 6.0  | WE           |
| BZT52-C8V7                     | 8.7                              | 8.27   | 9.14   | 7                                 | 5.0 | 100                               | 1.00 | 0.1                             | 6.5  | 87C          |
| BZT52-C9V1                     | 9.1                              | 8.65   | 9.56   | 10                                | 5.0 | 100                               | 1.00 | 0.1                             | 7.0  | WF           |
| BZT52-C10                      | 10                               | 9.50   | 10.50  | 15                                | 5.0 | 150                               | 1.00 | 0.1                             | 7.5  | WG           |
| BZT52-C11                      | 11                               | 10.45  | 11.55  | 20                                | 5.0 | 150                               | 1.00 | 0.1                             | 8.5  | WH           |
| BZT52-C12                      | 12                               | 11.40  | 12.60  | 20                                | 5.0 | 150                               | 1.00 | 0.1                             | 9.0  | WI           |
| BZT52-C13                      | 13                               | 12.35  | 13.65  | 25                                | 5.0 | 170                               | 1.00 | 0.1                             | 10.0 | WK           |
| BZT52-C14                      | 14                               | 13.30  | 14.70  | 25                                | 5.0 | 170                               | 1.00 | 0.1                             | 10.5 | WJ           |
| BZT52-C15                      | 15                               | 14.25  | 15.75  | 30                                | 5.0 | 200                               | 1.00 | 0.1                             | 11.0 | WL           |
| BZT52-C16                      | 16                               | 15.20  | 16.80  | 40                                | 5.0 | 200                               | 1.00 | 0.1                             | 12.0 | WM           |
| BZT52-C17                      | 17                               | 16.15  | 17.85  | 40                                | 5.0 | 200                               | 1.00 | 0.1                             | 13.0 | 17C          |
| BZT52-C18                      | 18                               | 17.10  | 18.90  | 50                                | 5.0 | 225                               | 1.00 | 0.1                             | 14.0 | WN           |
| BZT52-C20                      | 20                               | 19.00  | 21.00  | 50                                | 5.0 | 225                               | 1.00 | 0.1                             | 15.0 | WO           |
| BZT52-C22                      | 22                               | 20.90  | 23.10  | 55                                | 5.0 | 250                               | 1.00 | 0.1                             | 17.0 | WP           |
| BZT52-C24                      | 24                               | 22.80  | 25.20  | 80                                | 5.0 | 250                               | 1.00 | 0.1                             | 18.0 | WR           |
| BZT52-C27                      | 27                               | 25.65  | 28.35  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 20.0 | WS           |
| BZT52-C28                      | 28                               | 26.60  | 29.40  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 22.0 | 28C          |
| BZT52-C30                      | 30                               | 28.50  | 31.50  | 80                                | 5.0 | 300                               | 1.00 | 0.1                             | 22.5 | WT           |
| BZT52-C33                      | 33                               | 31.35  | 34.65  | 80                                | 5.0 | 325                               | 1.00 | 0.1                             | 25.0 | WU           |
| BZT52-C36                      | 36                               | 34.20  | 37.80  | 90                                | 5.0 | 350                               | 1.00 | 0.1                             | 27.0 | WW           |
| BZT52-C39                      | 39                               | 37.05  | 40.95  | 90                                | 5.0 | 350                               | 1.00 | 0.1                             | 29.0 | WX           |
| BZT52-C43                      | 43                               | 40.85  | 45.15  | 100                               | 5.0 | 375                               | 1.00 | 0.1                             | 32.0 | WY           |
| BZT52-C47                      | 47                               | 44.65  | 49.35  | 100                               | 5.0 | 375                               | 1.00 | 0.1                             | 35.0 | WZ           |
| BZT52-C51                      | 51                               | 48.45  | 53.55  | 100                               | 5.0 | 400                               | 1.00 | 0.1                             | 38.0 | XA           |
| BZT52-C56                      | 56                               | 53.20  | 58.80  | 135                               | 2.5 | 1000                              | 1.00 | 0.1                             | 42.0 | X2           |
| BZT52-C62                      | 62                               | 58.90  | 65.10  | 150                               | 2.5 | 1000                              | 1.00 | 0.1                             | 46.0 | X3           |
| BZT52-C68                      | 68                               | 64.60  | 71.40  | 200                               | 2.5 | 1000                              | 1.00 | 0.1                             | 51.0 | X4           |
| BZT52-C75                      | 75                               | 71.25  | 78.75  | 250                               | 2.5 | 1000                              | 1.00 | 0.1                             | 56.0 | X5           |



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**Fig.1 Power Derating Curve**



**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Zener Breakdown**



**Fig.4 Typical Zener Breakdown**



**Fig.5 Typical Zener Breakdown**



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

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



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## Part No\_packing code\_Version

BZT52-C2V4\_R1\_00001

BZT52-C2V4\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</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>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <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>             |                           |                      |                                       |



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