



# BZT52C2V4 - BZT52C43

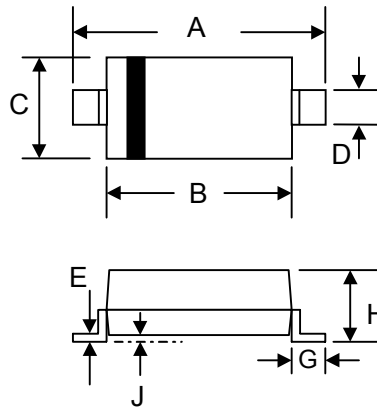
## SURFACE MOUNT ZENER DIODE

### Features

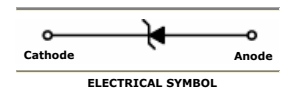
- Planar Die Construction
- 500mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes

### Mechanical Data

- Case: SOD-123, Plastic
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: See Below
- Weight: 0.01 grams (approx.)



| SOD-123              |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 3.6  | 3.9  |
| B                    | 2.5  | 2.8  |
| C                    | 1.4  | 1.8  |
| D                    | 0.5  | 0.7  |
| E                    | —    | 0.2  |
| G                    | 0.4  | —    |
| H                    | 0.95 | 1.35 |
| J                    | —    | 0.12 |
| All Dimensions in mm |      |      |



### Maximum Ratings @T<sub>A</sub>=25°C unless otherwise specified

| Type Number                                         | Symbol                            | Value        | Units |
|-----------------------------------------------------|-----------------------------------|--------------|-------|
| Forward Voltage @ IF = 10mA                         | VF                                | 0.9          | V     |
| Power Dissipation (Note 1)                          | Pd                                | 500          | mW    |
| Thermal Resistance Junction to Ambient Air (Note 1) | R θ JA                            | 305          | °C /W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -55 to + 150 | °C    |

- Notes: 1. Device Mounted on Ceramic PCB, 7.6mm x 9.4mm x 0.87mm with Pad Areas 25mm<sup>2</sup>.
2. Tested with Pulses. Period = 5ms, Pulse Width = 300us.
3. When Provided, Otherwise, Parts are Provided with Date Code only, and Type Number Identifications Appears on reel only.
4. f = 1KHz.



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## SURFACE MOUNT ZENER DIODE

### Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

| Type      | ZENER VOLTAGE<br>V <sub>Z</sub> <sup>(1)</sup><br>VOLTS |     |      | Maximum Zener<br>Impedance <sup>(2)</sup><br>Z <sub>zT</sub> (OHMS) |      | Maximum Zener<br>Impedance <sup>(2)</sup><br>Z <sub>zK</sub> (OHMS) |      | REVERSE<br>CURRENT<br>I <sub>R</sub> (Max) @ V <sub>R</sub> |      | Typical<br>Temperature<br>Coefficient<br>@ I <sub>ZTC</sub> |      | Marking |
|-----------|---------------------------------------------------------|-----|------|---------------------------------------------------------------------|------|---------------------------------------------------------------------|------|-------------------------------------------------------------|------|-------------------------------------------------------------|------|---------|
|           | Min.                                                    | Nom | Max. | I <sub>zT</sub> (mA)                                                | Max. | I <sub>zK</sub> (mA)                                                | Max. | uA                                                          | V    | mV/°C                                                       |      |         |
| BZT52C2V4 | 2.28                                                    | 2.4 | 2.56 | 5                                                                   | 100  | 1.0                                                                 | 600  | 50                                                          | 1.0  | -3.5                                                        | 0    | WX      |
| BZT52C2V7 | 2.5                                                     | 2.7 | 2.9  | 5                                                                   | 100  | 1.0                                                                 | 600  | 20                                                          | 1.0  | -3.5                                                        | 0    | W1      |
| BZT52C3V0 | 2.8                                                     | 3.0 | 3.2  | 5                                                                   | 95   | 1.0                                                                 | 600  | 10                                                          | 1.0  | -3.5                                                        | 0    | W2      |
| BZT52C3V3 | 3.1                                                     | 3.3 | 3.5  | 5                                                                   | 95   | 1.0                                                                 | 600  | 5                                                           | 1.0  | -3.5                                                        | 0    | W3      |
| BZT52C3V6 | 3.4                                                     | 3.6 | 3.8  | 5                                                                   | 90   | 1.0                                                                 | 600  | 5                                                           | 1.0  | -3.5                                                        | 0    | W4      |
| BZT52C3V9 | 3.7                                                     | 3.9 | 4.1  | 5                                                                   | 90   | 1.0                                                                 | 600  | 3                                                           | 1.0  | -3.5                                                        | 0    | W5      |
| BZT52C4V3 | 4.0                                                     | 4.3 | 4.6  | 5                                                                   | 90   | 1.0                                                                 | 600  | 3                                                           | 1.0  | -3.5                                                        | 0    | W6      |
| BZT52C4V7 | 4.4                                                     | 4.7 | 5.0  | 5                                                                   | 80   | 1.0                                                                 | 500  | 3                                                           | 2.0  | -3.5                                                        | 0.2  | W7      |
| BZT52C5V1 | 4.8                                                     | 5.1 | 5.4  | 5                                                                   | 60   | 1.0                                                                 | 480  | 2                                                           | 2.0  | -2.7                                                        | 1.2  | W8      |
| BZT52C5V6 | 5.2                                                     | 5.6 | 6.0  | 5                                                                   | 40   | 1.0                                                                 | 400  | 1                                                           | 2.0  | -2.0                                                        | 2.5  | W9      |
| BZT52C6V2 | 5.8                                                     | 6.2 | 6.6  | 5                                                                   | 10   | 1.0                                                                 | 150  | 3                                                           | 4.0  | 0.4                                                         | 3.7  | WA      |
| BZT52C6V8 | 6.4                                                     | 6.8 | 7.2  | 5                                                                   | 15   | 1.0                                                                 | 80   | 2                                                           | 4.0  | 1.2                                                         | 4.5  | WB      |
| BZT52C7V5 | 7.0                                                     | 7.5 | 7.9  | 5                                                                   | 15   | 1.0                                                                 | 80   | 1                                                           | 5.0  | 2.5                                                         | 5.3  | WC      |
| BZT52C8V2 | 7.7                                                     | 8.2 | 8.7  | 5                                                                   | 15   | 1.0                                                                 | 80   | 0.7                                                         | 5.0  | 3.2                                                         | 6.2  | WD      |
| BZT52C9V1 | 8.5                                                     | 9.1 | 9.6  | 5                                                                   | 15   | 1.0                                                                 | 100  | 0.5                                                         | 6.0  | 3.8                                                         | 7.0  | WE      |
| BZT52C10  | 9.4                                                     | 10  | 10.6 | 5                                                                   | 20   | 1.0                                                                 | 150  | 0.2                                                         | 7.0  | 4.5                                                         | 8.0  | WF      |
| BZT52C11  | 10.4                                                    | 11  | 11.6 | 5                                                                   | 20   | 1.0                                                                 | 150  | 0.1                                                         | 8.0  | 5.4                                                         | 9.0  | WG      |
| BZT52C12  | 11.4                                                    | 12  | 12.7 | 5                                                                   | 25   | 1.0                                                                 | 150  | 0.1                                                         | 8.0  | 6.0                                                         | 10.0 | WH      |
| BZT52C13  | 12.4                                                    | 13  | 14.1 | 5                                                                   | 30   | 1.0                                                                 | 170  | 0.1                                                         | 8.0  | 7.0                                                         | 11.0 | WI      |
| BZT52C15  | 13.8                                                    | 15  | 15.6 | 5                                                                   | 30   | 1.0                                                                 | 200  | 0.1                                                         | 10.5 | 9.2                                                         | 13.0 | WJ      |
| BZT52C16  | 15.3                                                    | 16  | 17.1 | 5                                                                   | 40   | 1.0                                                                 | 200  | 0.1                                                         | 11.2 | 10.4                                                        | 14.0 | WK      |
| BZT52C18  | 16.8                                                    | 18  | 19.1 | 5                                                                   | 45   | 1.0                                                                 | 225  | 0.1                                                         | 12.6 | 12.4                                                        | 16.0 | WL      |
| BZT52C20  | 18.8                                                    | 20  | 21.2 | 5                                                                   | 55   | 1.0                                                                 | 225  | 0.1                                                         | 14.0 | 14.4                                                        | 18.0 | WM      |
| BZT52C22  | 20.8                                                    | 22  | 23.3 | 5                                                                   | 55   | 1.0                                                                 | 250  | 0.1                                                         | 15.4 | 16.4                                                        | 20.0 | WN      |
| BZT52C24  | 22.8                                                    | 24  | 25.6 | 5                                                                   | 70   | 1.0                                                                 | 250  | 0.1                                                         | 16.8 | 18.4                                                        | 22.0 | WO      |
| BZT52C27  | 25.1                                                    | 27  | 28.9 | 2                                                                   | 80   | 0.5                                                                 | 300  | 0.1                                                         | 18.9 | 21.4                                                        | 25.3 | WP      |
| BZT52C30  | 28                                                      | 30  | 32   | 2                                                                   | 80   | 0.5                                                                 | 300  | 0.1                                                         | 21.0 | 24.4                                                        | 29.4 | WQ      |
| BZT52C33  | 31                                                      | 33  | 35   | 2                                                                   | 80   | 0.5                                                                 | 325  | 0.1                                                         | 23.1 | 27.4                                                        | 33.4 | WR      |
| BZT52C36  | 34                                                      | 36  | 38   | 2                                                                   | 90   | 0.5                                                                 | 350  | 0.1                                                         | 25.2 | 30.4                                                        | 37.4 | WS      |
| BZT52C39  | 37                                                      | 39  | 41   | 2                                                                   | 130  | 0.5                                                                 | 350  | 0.1                                                         | 27.3 | 33.4                                                        | 41.2 | WT      |
| BZT52C43  | 40                                                      | 43  | 46   | 5                                                                   | 100  | 1.0                                                                 | 700  | 0.1                                                         | 32.0 | 10.0                                                        | 12.0 | WU      |

(1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25 mm<sup>2</sup>

(2) f=1KHz



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## RATINGS AND CHARACTERISTIC CURVES

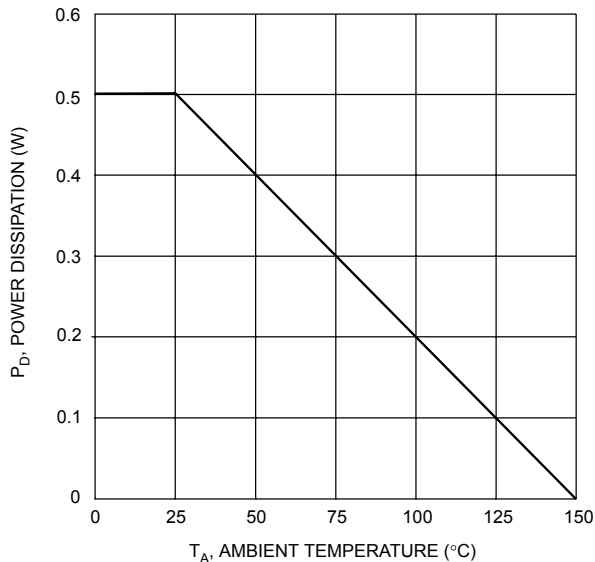


Fig. 1 Power Dissipation vs Ambient Temperature

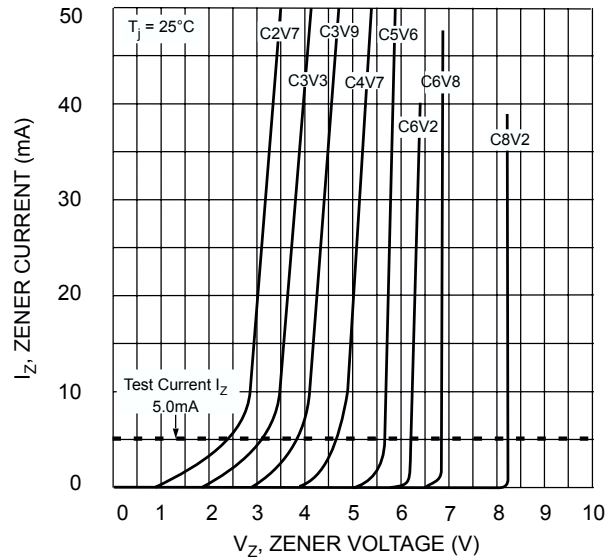


Fig. 2 Zener Breakdown Characteristics

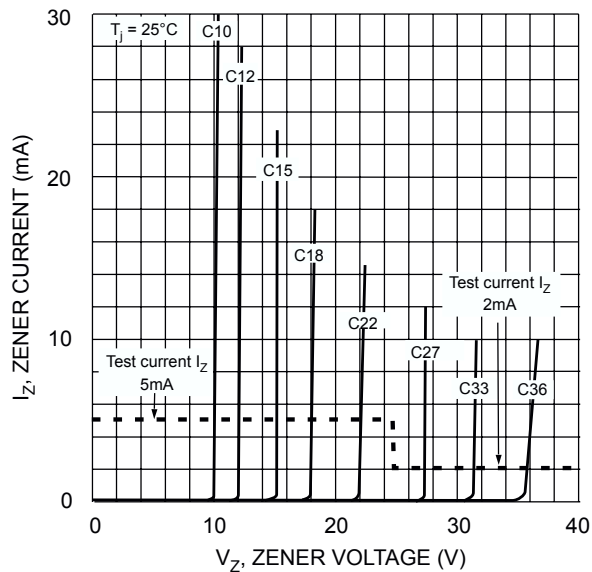


Fig. 3 Zener Breakdown Characteristics

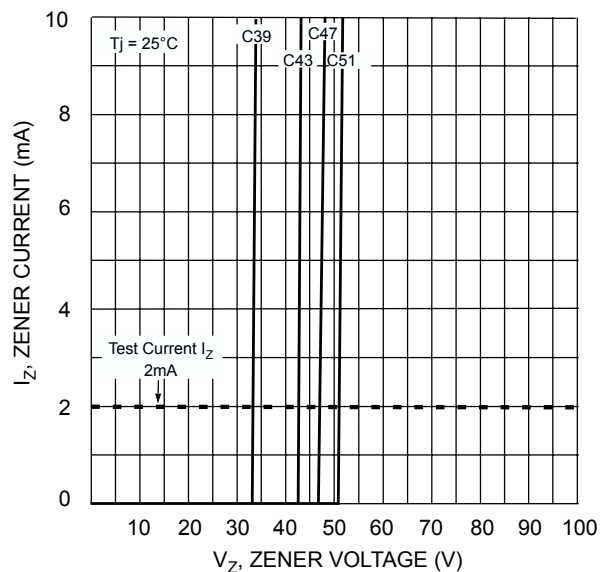


Fig. 4 Zener Breakdown Characteristics

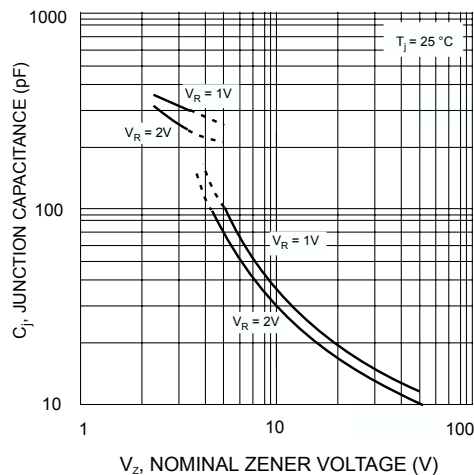


Fig. 5 Junction Capacitance vs Nominal Zener Voltage