

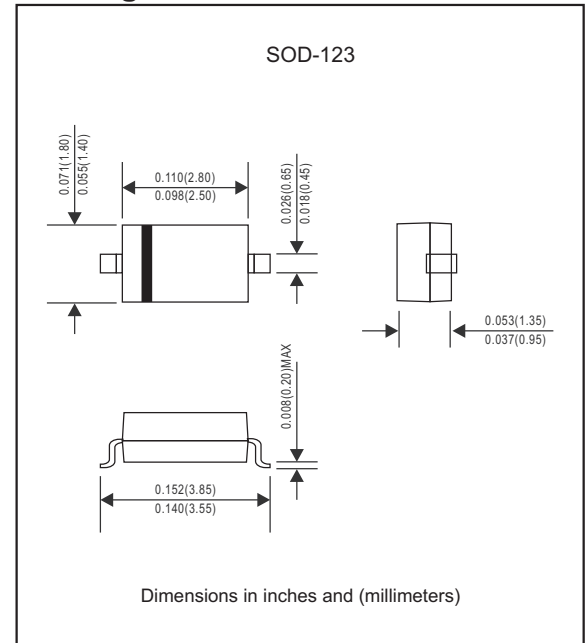
Features

- Silicon epitaxial planar chip structure.
- Zener breakdown voltage range, 2.4V to 75V ex.BZT52C2V4
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Pb-Free package is available.
- Compliant to Halogen-free

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---|-----------------|------|------|------|---------------------------|
| Forward voltage | @IF = 10mA | V_F | | | 0.9 | V |
| Total power dissipation | at $T_A=25^\circ\text{C}$ Mounted on FR-5 board, note 1 | P_D | | | 350 | mW |
| Thermal resistance | Junction to ambient, note 1 | $R_{\theta JA}$ | | 305 | | $^\circ\text{C}/\text{W}$ |
| | Junction to case, note 1 | $R_{\theta JC}$ | | 200 | | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range | | T_J | -55 | | +150 | $^\circ\text{C}$ |
| Storage temperature range | | T_{STG} | -55 | | +150 | $^\circ\text{C}$ |

Note1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad area 25mm²

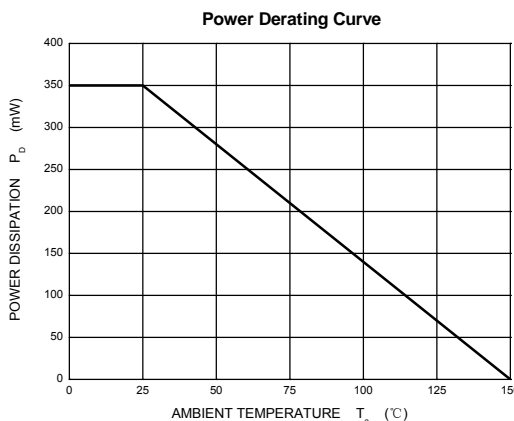
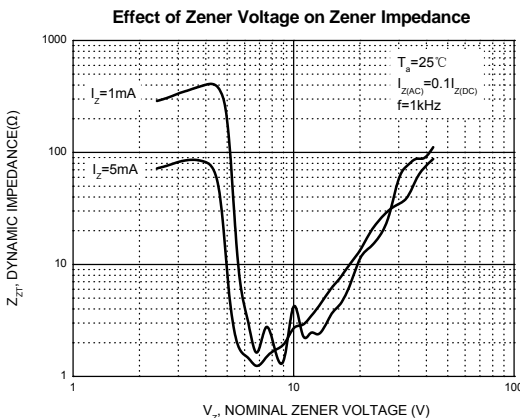
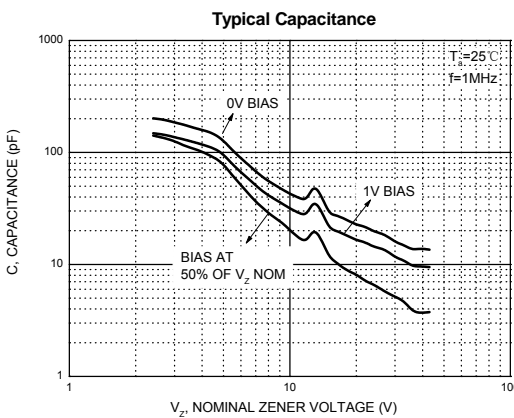
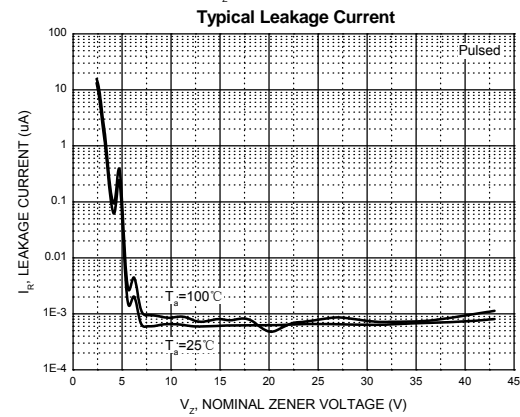
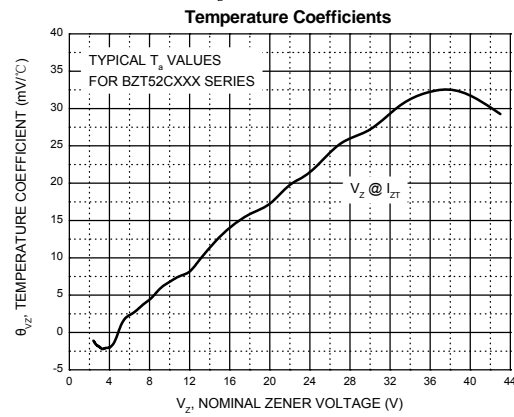
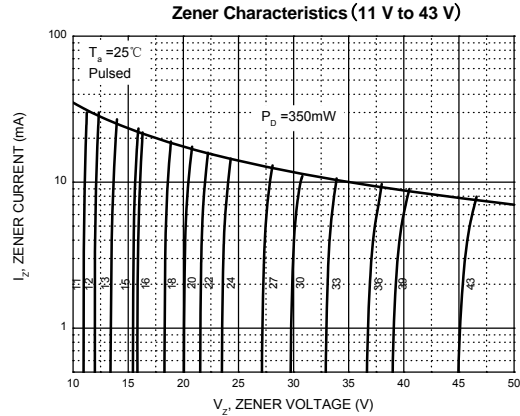
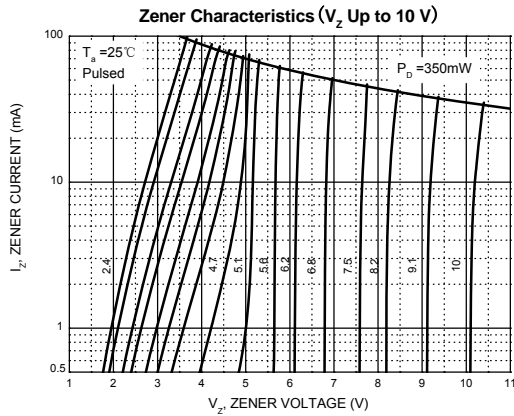
Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

| Part No. | Marking code | Zener voltage | | | Test current | Zener impedance | | | Leakage current | |
|-----------|--------------|----------------|---------|---------|--------------|-------------------|-------------------|----------|----------------------|-------|
| | | $V_Z @ I_{ZT}$ | | | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | I_R | V_R |
| | | Min.(V) | Nom.(V) | Max.(V) | mA | (Ω)Max | (Ω)Max | mA | (μA)Max | Volts |
| BZT52C2V4 | WX | 2.2 | 2.4 | 2.6 | 5 | 100 | 600 | 1.0 | 50.0 | 1.0 |
| BZT52C2V7 | W1 | 2.5 | 2.7 | 2.9 | 5 | 100 | 600 | 1.0 | 20.0 | 1.0 |
| BZT52C3V0 | W2 | 2.8 | 3.0 | 3.2 | 5 | 95 | 600 | 1.0 | 10.0 | 1.0 |
| BZT52C3V3 | W3 | 3.1 | 3.3 | 3.5 | 5 | 95 | 600 | 1.0 | 5.0 | 1.0 |
| BZT52C3V6 | W4 | 3.4 | 3.6 | 3.8 | 5 | 90 | 600 | 1.0 | 5.0 | 1.0 |
| BZT52C3V9 | W5 | 3.7 | 3.9 | 4.1 | 5 | 90 | 600 | 1.0 | 3.0 | 1.0 |
| BZT52C4V3 | W6 | 4.0 | 4.3 | 4.6 | 5 | 90 | 600 | 1.0 | 3.0 | 1.0 |
| BZT52C4V7 | W7 | 4.4 | 4.7 | 5.0 | 5 | 80 | 500 | 1.0 | 3.0 | 2.0 |
| BZT52C5V1 | W8 | 4.8 | 5.1 | 5.4 | 5 | 60 | 480 | 1.0 | 2.0 | 2.0 |
| BZT52C5V6 | W9 | 5.2 | 5.6 | 6.0 | 5 | 40 | 400 | 1.0 | 1.0 | 2.0 |
| BZT52C6V2 | WA | 5.8 | 6.2 | 6.6 | 5 | 10 | 150 | 1.0 | 3.0 | 4.0 |
| BZT52C6V8 | WB | 6.4 | 6.8 | 7.2 | 5 | 15 | 80 | 1.0 | 2.0 | 4.0 |
| BZT52C7V5 | WC | 7.0 | 7.5 | 7.9 | 5 | 15 | 80 | 1.0 | 1.0 | 5.0 |
| BZT52C8V2 | WD | 7.7 | 8.2 | 8.7 | 5 | 15 | 80 | 1.0 | 0.7 | 5.0 |
| BZT52C9V1 | WE | 8.5 | 9.1 | 9.6 | 5 | 15 | 100 | 1.0 | 0.5 | 6.0 |
| BZT52C10 | WF | 9.4 | 10 | 10.6 | 5 | 20 | 150 | 1.0 | 0.2 | 7.0 |
| BZT52C11 | WG | 10.4 | 11 | 11.6 | 5 | 20 | 150 | 1.0 | 0.1 | 8.0 |
| BZT52C12 | WH | 11.4 | 12 | 12.7 | 5 | 25 | 150 | 1.0 | 0.1 | 8.0 |
| BZT52C13 | WI | 12.4 | 13 | 14.1 | 5 | 30 | 170 | 1.0 | 0.1 | 8.0 |
| BZT52C15 | WJ | 13.8 | 15 | 15.8 | 5 | 30 | 200 | 1.0 | 0.1 | 10.5 |
| BZT52C16 | WK | 15.3 | 16 | 17.1 | 5 | 40 | 200 | 1.0 | 0.1 | 11.2 |
| BZT52C18 | WL | 16.8 | 18 | 19.1 | 5 | 45 | 225 | 1.0 | 0.1 | 12.6 |
| BZT52C20 | WM | 18.8 | 20 | 21.2 | 5 | 55 | 225 | 1.0 | 0.1 | 14.0 |
| BZT52C22 | WN | 20.8 | 22 | 23.3 | 5 | 55 | 250 | 1.0 | 0.1 | 15.4 |
| BZT52C24 | WO | 22.8 | 24 | 25.6 | 5 | 70 | 250 | 1.0 | 0.1 | 16.8 |
| BZT52C27 | WP | 25.1 | 27 | 28.9 | 2 | 80 | 300 | 0.5 | 0.1 | 18.9 |
| BZT52C30 | WQ | 28.0 | 30 | 32.0 | 2 | 80 | 300 | 0.5 | 0.1 | 21.0 |
| BZT52C33 | WR | 31.0 | 33 | 35.0 | 2 | 80 | 325 | 0.5 | 0.1 | 23.1 |
| BZT52C36 | WS | 34.0 | 36 | 38.0 | 2 | 90 | 350 | 0.5 | 0.1 | 25.2 |
| BZT52C39 | WT | 37.0 | 39 | 41.0 | 2 | 130 | 350 | 0.5 | 0.1 | 27.3 |
| BZT52C43 | WU | 40.0 | 43 | 46.0 | 2 | 150 | 375 | 0.5 | 0.1 | 32.0 |
| BZT52C47 | WV | 44.6 | 47 | 49.4 | 2 | 170 | 1000 | 0.25 | 0.1 | 35.0 |
| BZT52C51 | X1 | 48.4 | 51 | 53.6 | 2 | 180 | 1300 | 0.25 | 0.1 | 38.0 |
| BZT52C56 | X2 | 53.2 | 56 | 58.8 | 2 | 200 | 1400 | 0.25 | 0.1 | 42.0 |
| BZT52C62 | X3 | 58.9 | 62 | 65.1 | 2 | 225 | 1400 | 0.25 | 0.1 | 46.0 |
| BZT52C68 | X4 | 64.6 | 68 | 71.4 | 2 | 240 | 1600 | 0.25 | 0.1 | 51.0 |
| BZT52C75 | X5 | 71.2 | 75 | 78.8 | 2 | 265 | 1700 | 0.25 | 0.1 | 56.0 |

Note:

1. Tested with pulses, period = 5ms, pulse width = 300us.
2. When provided, otherwise, parts are provided with date code only, and type number identifications appears on reel only.
3. $f=1\text{KHz}$.

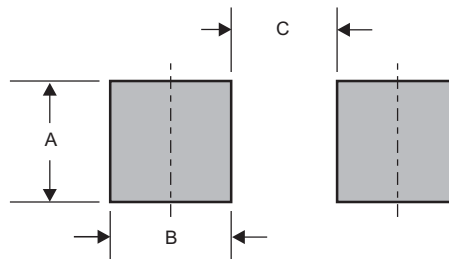
Rating and characteristic curves (BZT52C Series)



Pinning information

| Pin | Simplified outline | Symbol |
|----------------------------|--------------------|--------|
| Pin1 cathode Pin2 anode | | |

Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---------|--------------|--------------|--------------|
| SOD-123 | 0.048 (1.22) | 0.036 (0.91) | 0.093 (2.36) |

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