



**BZT52C2V4
THRU
BZT52C43**

**500 mW
Zener Diode
2.4 to 43 Volts**

Features

- Planar Die Construction
- 500mW Power Dissipation on Ceramic PCB
- General Purpose Medium Current
- Ideally Suited for Automated Assembly Processes
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant("P" Suffix designates RoHS Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"

Absolute Maximum Ratings

| Symbol | Rating | Rating | Unit |
|------------------|---------------------------|-------------|------|
| P _D | Power dissipation | 500 | mW |
| T _J | Junction Temperature | -65 to +150 | °C |
| T _{STG} | Storage Temperature Range | -65 to +150 | °C |

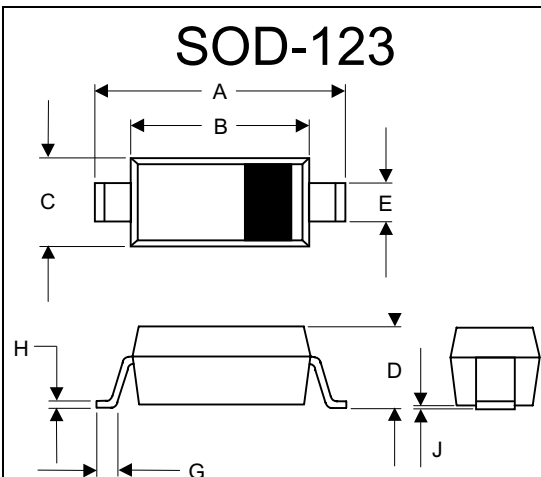
Absolute Maximum Ratings

| Symbol | Rating | Rating | Unit |
|-------------------|---|--------|------|
| R _{thJA} | Thermal Resistance Junction to Ambient* | 250 | °C/W |

* Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25 mm²

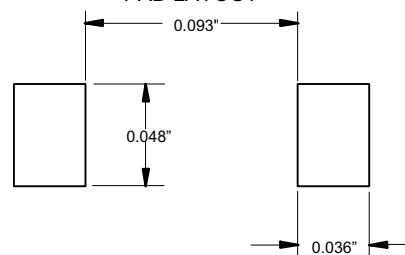
Electrical Characteristics

| Symbol | Rating | Rating | Unit |
|----------------|---|--------|------|
| V _F | Maximum Forward Voltage (I _F =10mA _{dc}) | 0.9 | V |



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | .140 | .152 | 3.55 | 3.85 | |
| B | .100 | .112 | 2.55 | 2.85 | |
| C | .055 | .071 | 1.40 | 1.80 | |
| D | ----- | .053 | ----- | 1.35 | |
| E | .012 | .031 | 0.30 | .78 | |
| G | .006 | ----- | 0.15 | ----- | |
| H | ----- | .01 | ----- | .25 | |
| J | ----- | .006 | ----- | .15 | |

SUGGESTED SOLDER PAD LAYOUT



ELECTRICAL CHARACTERISTICS @25°C

| Type | ZENER VOLTAGE $V_Z^{(1)}$ VOLTS | | | Maximum Zener Impedance ⁽²⁾ Z_{ZT} (OHMS) | | Maximum Zener Impedance ⁽²⁾ Z_{ZK} (OHMS) | | REVERSE CURRENT I_R (Max) @ V_R | | Typical Temperature Coefficient @ I_{ZTC} | | Marking |
|-----------|---------------------------------------|-----|------|---|------|---|------|--|------|--|------|---------|
| | Min. | Nom | Max. | I_{ZT} (mA) | Max. | I_{ZK} (mA) | Max. | μA | 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 mm²
 (2) f=1KHz

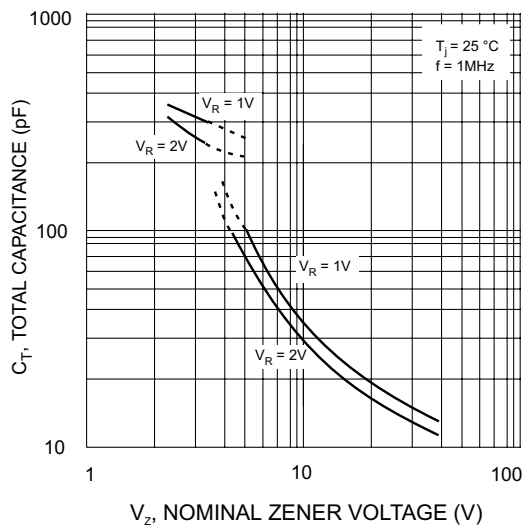


Fig. 1 Total Capacitance vs Nominal Zener Voltage

BZT52C2V4 THRU BZT52C43



Fig. 2 Power Dissipation vs Ambient Temperature



Fig. 3 Zener Breakdown Characteristics

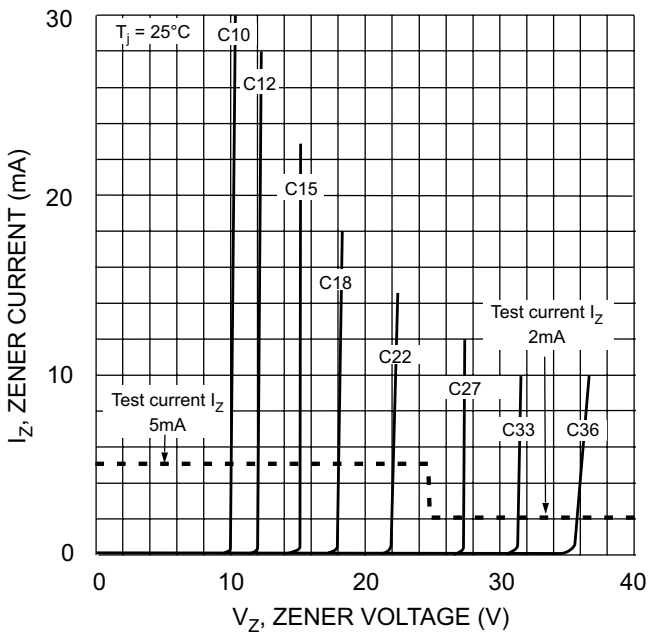


Fig. 4 Zener Breakdown Characteristics

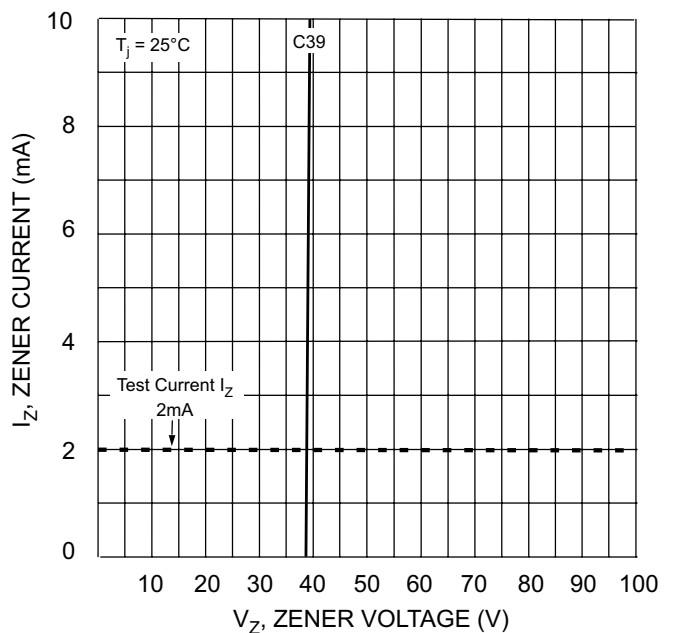


Fig. 5 Zener Breakdown Characteristics



TM

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Ordering Information :

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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