



# BZT52C2V4 THRU BZT52C51

## 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 |

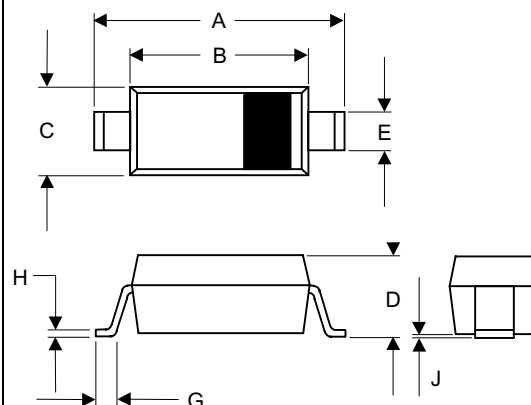
\* Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25 mm<sup>2</sup>

## Electrical Characteristics

| Symbol | Rating                                         | Rating | Unit |
|--------|------------------------------------------------|--------|------|
| $V_F$  | Maximum Forward Voltage<br>( $I_F=10mA_{dc}$ ) | 0.9    | V    |

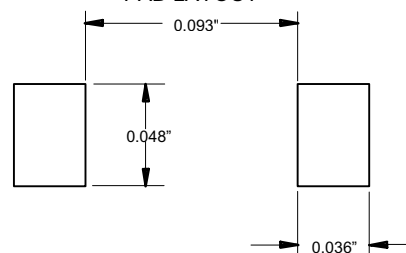
**500 mW  
Zener Diode  
2.4 to 51 Volts**

## SOD-123



| 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<br>$V_Z^{(1)}$<br>VOLTS |     |      | Maximum Zener<br>Impedance <sup>(2)</sup><br>$Z_{ZT}$ (OHMS) |      | Maximum Zener<br>Impedance <sup>(2)</sup><br>$Z_{ZK}$ (OHMS) |      | REVERSE<br>CURRENT<br>$I_R$ (Max) @ $V_R$ |      | Typical<br>Temperature<br>Coefficient<br>@ $I_{ZTC}$ |      | Marking |
|-----------|---------------------------------------|-----|------|--------------------------------------------------------------|------|--------------------------------------------------------------|------|-------------------------------------------|------|------------------------------------------------------|------|---------|
|           | Min.                                  | Nom | Max. | $I_{ZT}$ (mA)                                                | Max. | $I_{ZK}$ (mA)                                                | Max. | $\mu A$                                   | 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      |
| BZT52C47  | 44                                    | 47  | 50   | 5                                                            | 100  | 1.0                                                          | 750  | 0.1                                       | 35.0 | 10.0                                                 | 12.0 | WV      |
| BZT52C51  | 48                                    | 51  | 54   | 5                                                            | 100  | 1.0                                                          | 750  | 0.1                                       | 38.0 | 10.0                                                 | 12.0 | WW      |

(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

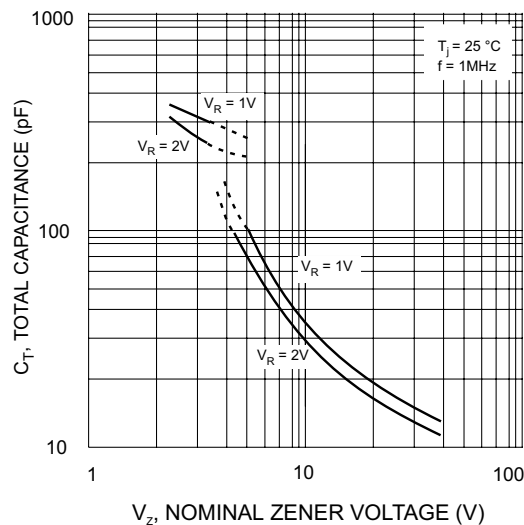
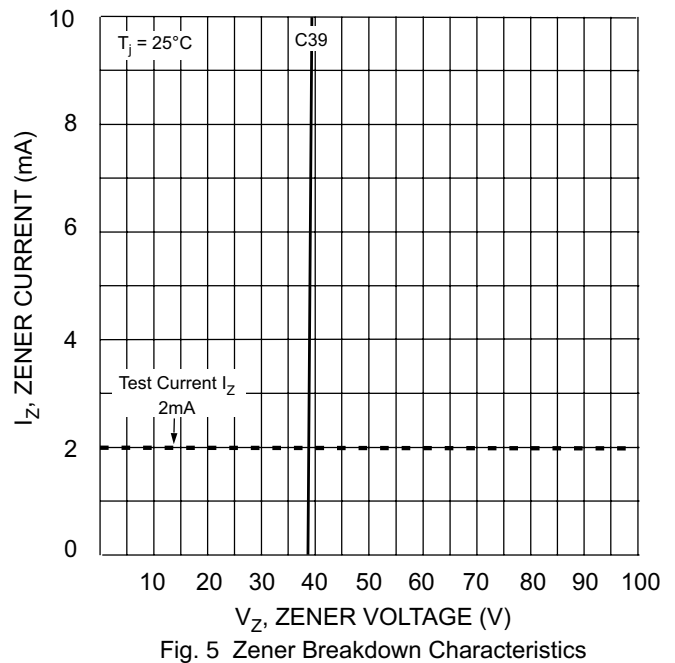
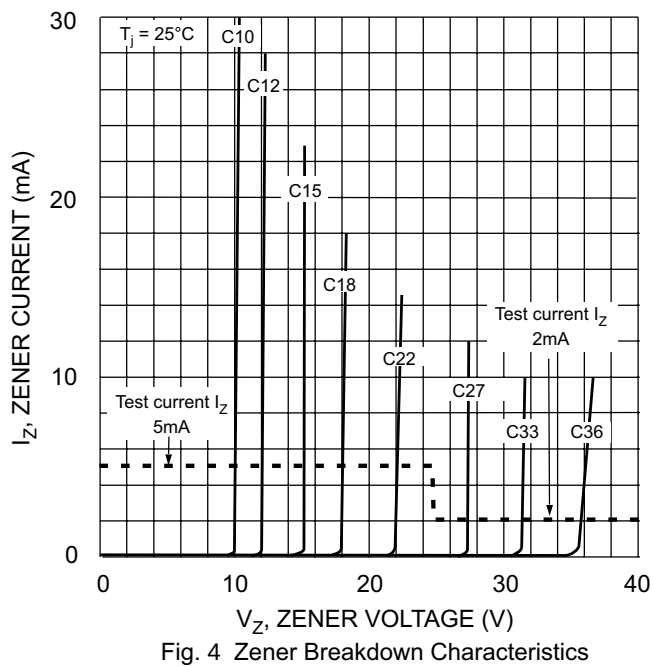
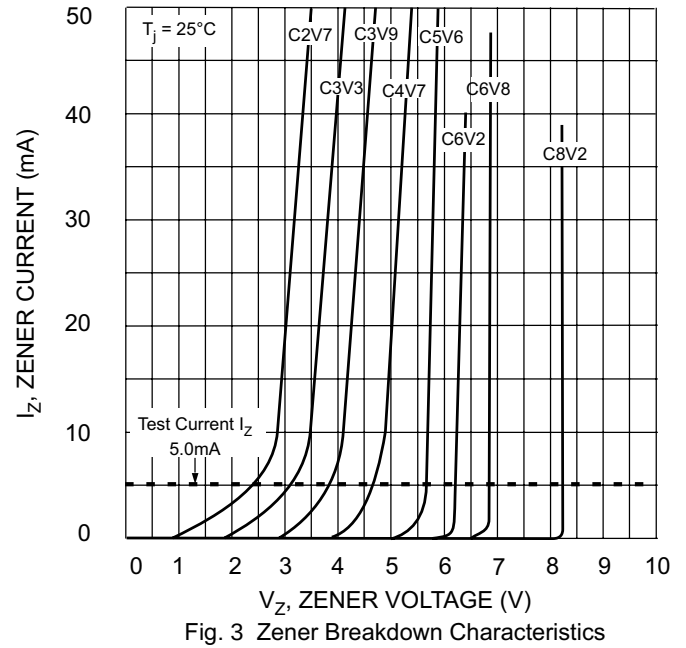
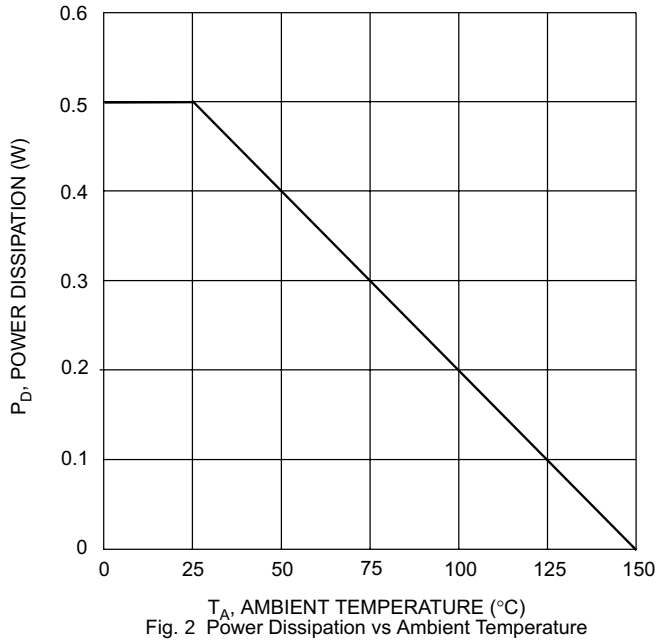


Fig. 1 Total Capacitance vs Nominal Zener Voltage

# BZT52C2V4 THRU BZT52C51



## 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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