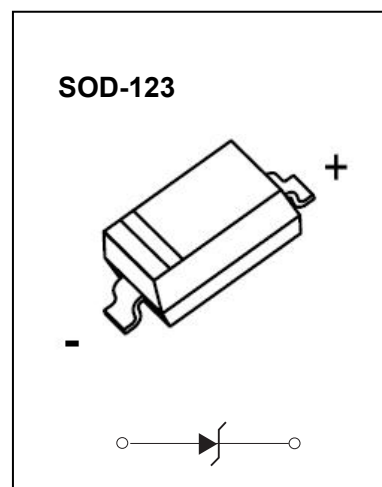


## SOD-123 Plastic-Encapsulate Diodes

### **BZT52C2V4-BZT52C43** ZENER DIODE

#### FEATURES:

- Planar Die Construction
- 350mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version



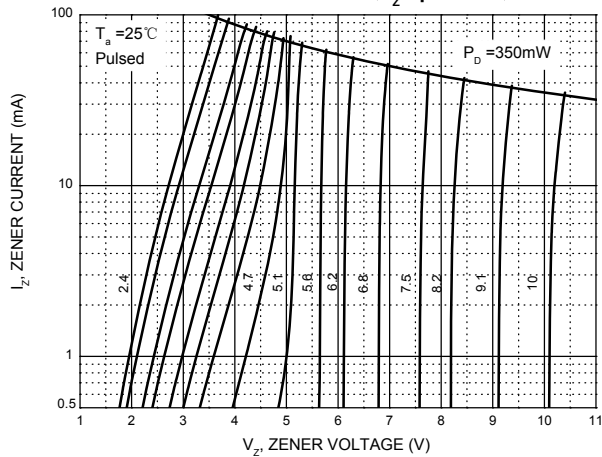
#### Maximum Ratings( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Characteristic                                 | Symbol          | Value    | Unit                 |
|------------------------------------------------|-----------------|----------|----------------------|
| Forward Voltage (Note 2) @ $I_F = 10\text{mA}$ | $V_F$           | 0.9      | V                    |
| Power Dissipation(Note 1)                      | $P_D$           | 350      | mW                   |
| Thermal Resistance from Junction to Ambient    | $R_{\theta JA}$ | 357      | $^{\circ}\text{C/W}$ |
| Junction Temperature                           | $T_J$           | 150      | $^{\circ}\text{C}$   |
| Storage Temperature                            | $T_{STG}$       | -55~+150 | $^{\circ}\text{C}$   |

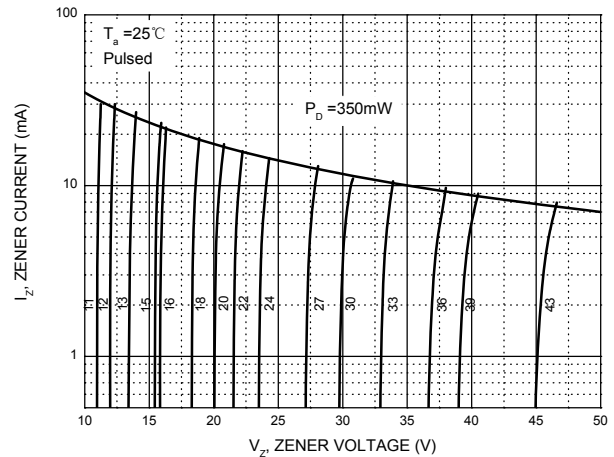
$T_a=25^{\circ}\text{C}$  unless otherwise specified

| Type<br>Number | Type<br>Code | Zener Voltage Range (Note 2)    |        |        |                 | Maximum Zener Impedance<br>(Note 3) |                                  |                 | Maximum<br>Reverse<br>Current<br>(Note 2) |                | Typical<br>Temperature<br>Coefficient<br>@I <sub>ZTC</sub><br>mV/°C |      | Test<br>Current<br>I <sub>ZTC</sub> |
|----------------|--------------|---------------------------------|--------|--------|-----------------|-------------------------------------|----------------------------------|-----------------|-------------------------------------------|----------------|---------------------------------------------------------------------|------|-------------------------------------|
|                |              | V <sub>Z</sub> @I <sub>ZT</sub> |        |        | I <sub>ZT</sub> | Z <sub>ZT</sub> @I <sub>ZT</sub>    | Z <sub>ZK</sub> @I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>                            | V <sub>R</sub> |                                                                     |      |                                     |
|                |              | Nom(V)                          | Min(V) | Max(V) | mA              | Ω                                   |                                  | mA              | μA                                        | V              | Min                                                                 | Max  | mA                                  |
| BZT52C2V4      | WX           | 2.4                             | 2.20   | 2.60   | 5               | 100                                 | 600                              | 1.0             | 50                                        | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C2V7      | W1           | 2.7                             | 2.5    | 2.9    | 5               | 100                                 | 600                              | 1.0             | 20                                        | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C3V0      | W2           | 3.0                             | 2.8    | 3.2    | 5               | 95                                  | 600                              | 1.0             | 10                                        | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C3V3      | W3           | 3.3                             | 3.1    | 3.5    | 5               | 95                                  | 600                              | 1.0             | 5                                         | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C3V6      | W4           | 3.6                             | 3.4    | 3.8    | 5               | 90                                  | 600                              | 1.0             | 5                                         | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C3V9      | W5           | 3.9                             | 3.7    | 4.1    | 5               | 90                                  | 600                              | 1.0             | 3                                         | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C4V3      | W6           | 4.3                             | 4.0    | 4.6    | 5               | 90                                  | 600                              | 1.0             | 3                                         | 1.0            | -3.5                                                                | 0    | 5                                   |
| BZT52C4V7      | W7           | 4.7                             | 4.4    | 5.0    | 5               | 80                                  | 500                              | 1.0             | 3                                         | 2.0            | -3.5                                                                | 0.2  | 5                                   |
| BZT52C5V1      | W8           | 5.1                             | 4.8    | 5.4    | 5               | 60                                  | 480                              | 1.0             | 2                                         | 2.0            | -2.7                                                                | 1.2  | 5                                   |
| BZT52C5V6      | W9           | 5.6                             | 5.2    | 6.0    | 5               | 40                                  | 400                              | 1.0             | 1                                         | 2.0            | -2.0                                                                | 2.5  | 5                                   |
| BZT52C6V2      | WA           | 6.2                             | 5.8    | 6.6    | 5               | 10                                  | 150                              | 1.0             | 3                                         | 4.0            | 0.4                                                                 | 3.7  | 5                                   |
| BZT52C6V8      | WB           | 6.8                             | 6.4    | 7.2    | 5               | 15                                  | 80                               | 1.0             | 2                                         | 4.0            | 1.2                                                                 | 4.5  | 5                                   |
| BZT52C7V5      | WC           | 7.5                             | 7.0    | 7.9    | 5               | 15                                  | 80                               | 1.0             | 1                                         | 5.0            | 2.5                                                                 | 5.3  | 5                                   |
| BZT52C8V2      | WD           | 8.2                             | 7.7    | 8.7    | 5               | 15                                  | 80                               | 1.0             | 0.7                                       | 5.0            | 3.2                                                                 | 6.2  | 5                                   |
| BZT52C9V1      | WE           | 9.1                             | 8.5    | 9.6    | 5               | 15                                  | 100                              | 1.0             | 0.5                                       | 6.0            | 3.8                                                                 | 7.0  | 5                                   |
| BZT52C10       | WF           | 10                              | 9.4    | 10.6   | 5               | 20                                  | 150                              | 1.0             | 0.2                                       | 7.0            | 4.5                                                                 | 8.0  | 5                                   |
| BZT52C11       | WG           | 11                              | 10.4   | 11.6   | 5               | 20                                  | 150                              | 1.0             | 0.1                                       | 8.0            | 5.4                                                                 | 9.0  | 5                                   |
| BZT52C12       | WH           | 12                              | 11.4   | 12.7   | 5               | 25                                  | 150                              | 1.0             | 0.1                                       | 8.0            | 6.0                                                                 | 10.0 | 5                                   |
| BZT52C13       | WI           | 13                              | 12.4   | 14.1   | 5               | 30                                  | 170                              | 1.0             | 0.1                                       | 8.0            | 7.0                                                                 | 11.0 | 5                                   |
| BZT52C15       | WJ           | 15                              | 13.8   | 15.6   | 5               | 30                                  | 200                              | 1.0             | 0.1                                       | 10.5           | 9.2                                                                 | 13.0 | 5                                   |
| BZT52C16       | WK           | 16                              | 15.3   | 17.1   | 5               | 40                                  | 200                              | 1.0             | 0.1                                       | 11.2           | 10.4                                                                | 14.0 | 5                                   |
| BZT52C18       | WL           | 18                              | 16.8   | 19.1   | 5               | 45                                  | 225                              | 1.0             | 0.1                                       | 12.6           | 12.4                                                                | 16.0 | 5                                   |
| BZT52C20       | WM           | 20                              | 18.8   | 21.2   | 5               | 55                                  | 225                              | 1.0             | 0.1                                       | 14.0           | 14.4                                                                | 18.0 | 5                                   |
| BZT52C22       | WN           | 22                              | 20.8   | 23.3   | 5               | 55                                  | 250                              | 1.0             | 0.1                                       | 15.4           | 16.4                                                                | 20.0 | 5                                   |
| BZT52C24       | WO           | 24                              | 22.8   | 25.6   | 5               | 70                                  | 250                              | 1.0             | 0.1                                       | 16.8           | 18.4                                                                | 22.0 | 5                                   |
| BZT52C27       | WP           | 27                              | 25.1   | 28.9   | 2               | 80                                  | 300                              | 0.5             | 0.1                                       | 18.9           | 21.4                                                                | 25.3 | 2                                   |
| BZT52C30       | WQ           | 30                              | 28.0   | 32.0   | 2               | 80                                  | 300                              | 0.5             | 0.1                                       | 21.0           | 24.4                                                                | 29.4 | 2                                   |
| BZT52C33       | WR           | 33                              | 31.0   | 35.0   | 2               | 80                                  | 325                              | 0.5             | 0.1                                       | 23.1           | 27.4                                                                | 33.4 | 2                                   |
| BZT52C36       | WS           | 36                              | 34.0   | 38.0   | 2               | 90                                  | 350                              | 0.5             | 0.1                                       | 25.2           | 30.4                                                                | 37.4 | 2                                   |
| BZT52C39       | WT           | 39                              | 37.0   | 41.0   | 2               | 130                                 | 350                              | 0.5             | 0.1                                       | 27.3           | 33.4                                                                | 41.2 | 2                                   |
| BZT52C43       | WU           | 43                              | 40.0   | 46.0   | 5               | 100                                 | 700                              | 1.0             | 0.1                                       | 32             | 10.0                                                                | 12.0 | 5                                   |

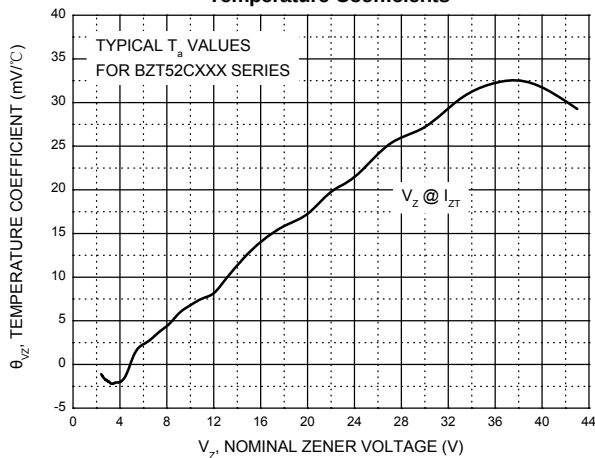
Zener Characteristics ( $V_z$  Up to 10 V)



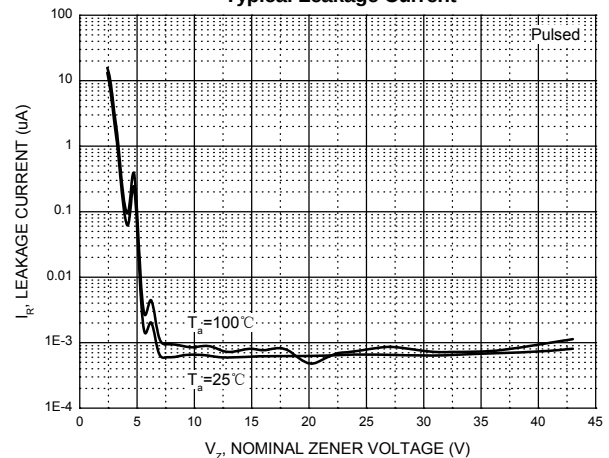
Zener Characteristics (11 V to 43 V)



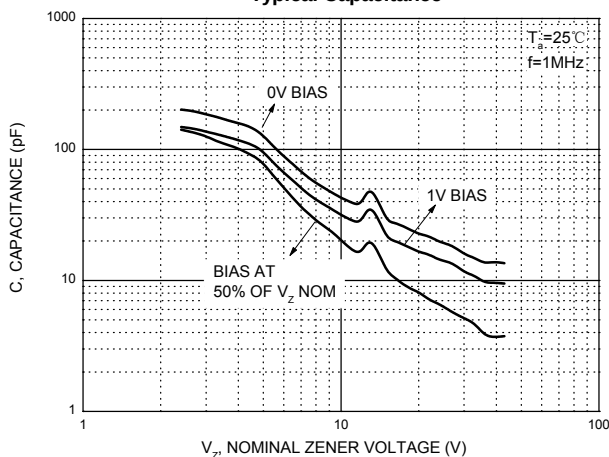
Temperature Coefficients



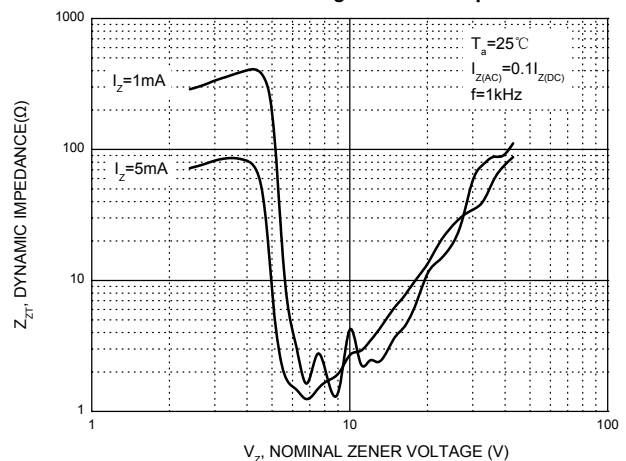
Typical Leakage Current



Typical Capacitance



Effect of Zener Voltage on Zener Impedance



Power Derating Curve

