# WEITRON

**BZT52B2V0 Series**

## Surface Mount Zener Diodes

**Lead(Pb)-Free**

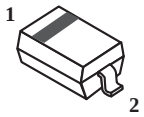
**SMALL SIGNAL ZENER DIODES 500m WATTS**

**Features:**

*500mw Power Dissipation
*Ideal for Surface Mountted Application
*Zener Breakdown Voltage Range 2.0V to 36V

**Mechanical Data:**

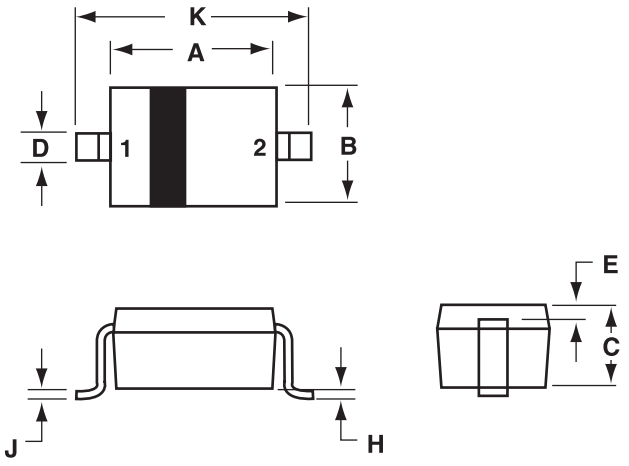
*Case : SOD-123 Molded plastic
*Terminals: Solderable per MIL-STD-202, Method 208
*Polarity: Cathode Indicated by Polarity Band
*Marking: Marking Code (See Table on Page 3)
*Weigh: 0.01grams(approx)




**SOD-123**

## SOD-123 Outline Dimensions

Unit:mm




| SOD-123 | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 2.55 | 2.85 |
| **B** | 1.40 | 1.80 |
| **C** | 0.95 | 1.35 |
| **D** | 0.50 | 0.70 |
| **E** | 0.30 REF | |
| **H** | - | 0.10 |
| **J** | - | 0.15 |
| **K** | 3.55 | 3.85 |

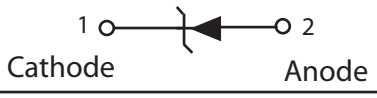
PIN 1. CATHODE
2. ANODE

## Maximum Ratings and Electrical Characteristics(TA=25°C Unless Otherwise Noted)

| Characteristics | Symbol | Value | Unit |
|---|---|---|---|
| Total Power Dissipation on FR-5 Board (1) | $P_D$ | 500 | mW |
| Thermal Resistance Junction to Ambient Air (1) | $R_{\theta JA}$ | 305 | °C/W |
| Forward Voltage @ IF=10mA | $V_F$ | 0.9 | V |
| Junction Temperature Range | $T_J$ | -55 to +125 | °C |
| Storage Temperature Range | $T_{STG}$ | -55 to +125 | °C |

Note 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm$^2$

## Device Marking

| Item | Marking | Equivalent Circuit Diagram |
|---|---|---|
| BZT52B2V0 Series | XX=Specific Device Code (See Table on page3) |   |

## Ratings and Characteristic curves

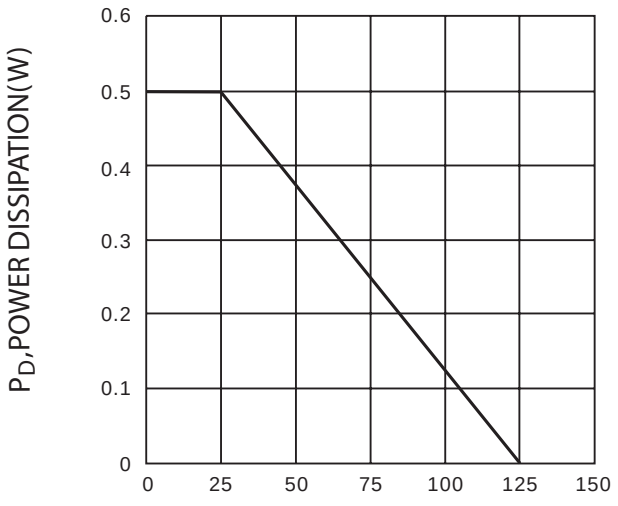



FIG. 1 Power Disspation vs Ambient temperaute

## Electrical Characteristics ($T_A$=25°C unless otherwise noted, $V_F$=0.9V Max @$I_F$=10mA)

| Device | Marking | Zener voltage | | | Operating resistance | | Rising operating resistance | | Reverse curre | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $V_Z$(V) | | | $Z_Z$(Ω) | | $Z_{ZK}$(Ω) | | $I_R$(μA) | |
| | | Min. | Max. | $I_Z$ (mA) | Max. | $I_Z$ (mA) | Max. | $I_Z$ (mA) | Max. | $V_R$ (V) |
| BZT52B2V0 | 02 | 2.020 | 2.200 | 5 | 100 | 5 | 1000 | 0.5 | 120 | 0.5 |
| BZT52B2V2 | 12 | 2.220 | 2.410 | 5 | 100 | 5 | 1000 | 0.5 | 120 | 0.7 |
| BZT52B2V4 | 22 | 2.430 | 2.630 | 5 | 100 | 5 | 1000 | 0.5 | 100 | 1.0 |
| BZT52B2V7 | 32 | 2.690 | 2.910 | 5 | 110 | 5 | 1000 | 0.5 | 100 | 1.0 |
| BZT52B3V0 | 42 | 3.010 | 3.220 | 5 | 120 | 5 | 1000 | 0.5 | 50 | 1.0 |
| BZT52B3V3 | 52 | 3.320 | 3.530 | 5 | 120 | 5 | 1000 | 0.5 | 20 | 1.0 |
| BZT52B3V6 | 62 | 3.600 | 3.845 | 5 | 100 | 5 | 1000 | 1.0 | 10 | 1.0 |
| BZT52B3V9 | 72 | 3.890 | 4.160 | 5 | 100 | 5 | 1000 | 1.0 | 5 | 1.0 |
| BZT52B4V3 | 82 | 4.170 | 4.430 | 5 | 100 | 5 | 1000 | 1.0 | 5 | 1.0 |
| BZT52B4V7 | 92 | 4.550 | 4.750 | 5 | 100 | 5 | 800 | 0.5 | 2 | 1.0 |
| BZT52B5V1 | A2 | 4.980 | 5.200 | 5 | 80 | 5 | 500 | 0.5 | 2 | 1.5 |
| BZT52B5V6 | C2 | 5.490 | 5.730 | 5 | 60 | 5 | 200 | 0.5 | 1 | 2.5 |
| BZT52B6V2 | E2 | 6.060 | 6.330 | 5 | 60 | 5 | 100 | 0.5 | 1 | 3.0 |
| BZT52B6V8 | F2 | 6.650 | 6.930 | 5 | 40 | 5 | 60 | 0.5 | 0.5 | 3.5 |
| BZT52B7V5 | H2 | 7.280 | 7.600 | 5 | 30 | 5 | 60 | 0.5 | 0.5 | 4.0 |
| BZT52B8V2 | J2 | 8.020 | 8.360 | 5 | 30 | 5 | 60 | 0.5 | 0.5 | 5.0 |
| BZT52B9V1 | L2 | 8.850 | 9.230 | 5 | 30 | 5 | 60 | 0.5 | 0.5 | 6.0 |
| BZT52B10 | 05 | 9.770 | 10.210 | 5 | 30 | 5 | 60 | 0.5 | 0.1 | 7.0 |
| BZT52B11 | 15 | 10.760 | 11.220 | 5 | 30 | 5 | 60 | 0.5 | 0.1 | 8.0 |
| BZT52B12 | 25 | 11.740 | 12.240 | 5 | 30 | 5 | 80 | 0.5 | 0.1 | 9.0 |
| BZT52B13 | 35 | 12.910 | 13.490 | 5 | 37 | 5 | 80 | 0.5 | 0.1 | 10.0 |
| BZT52B15 | 45 | 14.340 | 14.980 | 5 | 42 | 5 | 80 | 0.5 | 0.1 | 11.0 |
| BZT52B16 | 55 | 15.850 | 16.510 | 5 | 50 | 5 | 80 | 0.5 | 0.1 | 12.0 |
| BZT52B18 | 65 | 17.560 | 18.350 | 5 | 65 | 5 | 80 | 0.5 | 0.1 | 13.0 |
| BZT52B20 | 75 | 19.520 | 20.390 | 5 | 85 | 5 | 100 | 0.5 | 0.1 | 15.0 |
| BZT52B22 | 85 | 21.540 | 22.470 | 5 | 100 | 5 | 100 | 0.5 | 0.1 | 17.0 |
| BZT52B24 | 95 | 23.720 | 24.780 | 5 | 120 | 5 | 120 | 0.5 | 0.1 | 19.0 |
| BZT52B27 | A5 | 26.190 | 27.530 | 5 | 150 | 5 | 150 | 0.5 | 0.1 | 21.0 |
| BZT52B30 | C5 | 29.190 | 30.690 | 5 | 200 | 5 | 200 | 0.5 | 0.1 | 23.0 |
| BZT52B33 | E5 | 32.150 | 33.790 | 5 | 250 | 5 | 250 | 0.5 | 0.1 | 25.0 |
| BZT52B36 | F5 | 35.070 | 36.870 | 5 | 300 | 5 | 300 | 0.5 | 0.1 | 27.0 |

Notes) 1. The Zener voltage ($V_Z$) is measured 40ms after power is supplied.

2. The operating resistances ($Z_Z$, $Z_{ZK}$) are measured by superimposing a minute alternating current on the regulated current ($I_Z$).