HIGH DIODE

# BZT52C2V4W THRU BZT52C75W

## SOD123 Plastic-Encapsulate Diodes

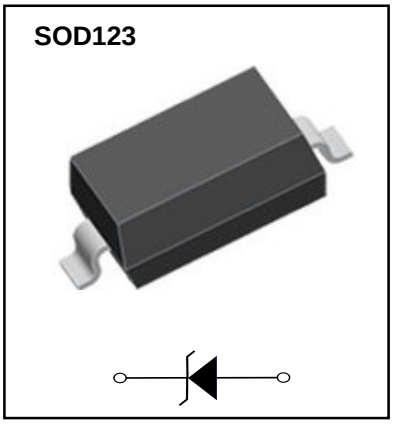
### Zener Diodes

### Features

- $P_d$ 500mW
- $V_z$ 2.4V- 75V

### Applications

- Stabilizing Voltage




### Limiting Values (Absolute Maximum Rating)

| Item | Symbol | Unit | Conditions | Max |
|---|---|---|---|---|
| Power dissipation | $P_d$ | mW | $T_A$=25℃ | 500 |
| Zener current | $I_Z$ | mA | | $P_V$ /$V_Z$ |
| Maximum junction temperature | $T_j$ | ℃ | | 150 |
| Storage temperature range | $T_{stg}$ | ℃ | | -65 to +150 |

### Electrical Characteristics（$T_a$=25℃ Unless otherwise specified）

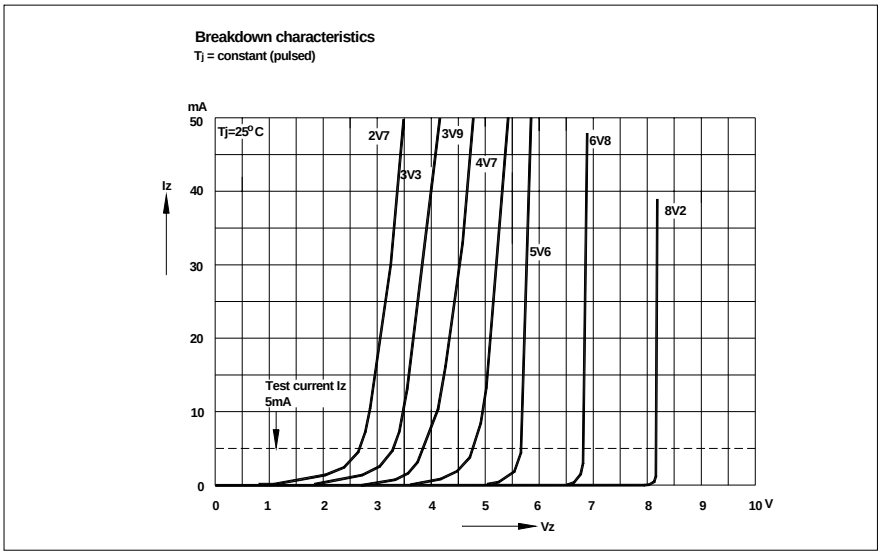
| Item | Symbol | Unit | Conditions | Max |
|---|---|---|---|---|
| Thermal resistance | $R_{\theta JA}$ | ℃/W | Between junction and ambient | 340 |
| Forward voltage | $V_F$ | V | $I_F$ =10mA | 0.9 |

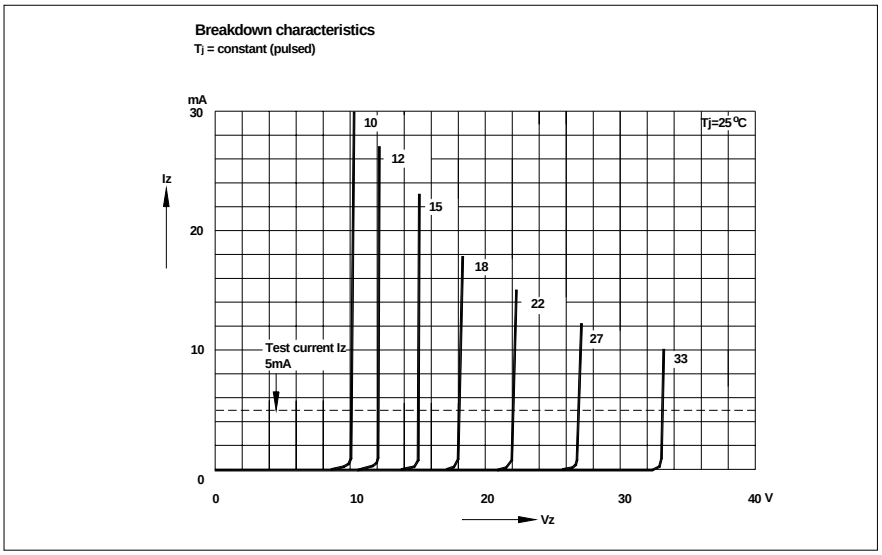
## Electrical Characteristics ($T_A$=25℃ unless otherwise noted)

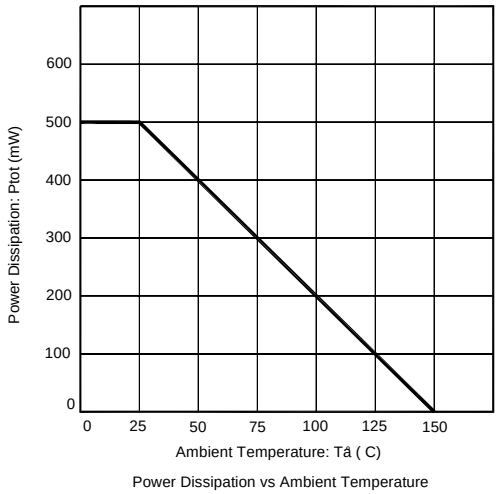
| Type | Marking Code | Zener Voltage Range [1] | | | Dynamic Impedance | | | | Reverse Leakage Current | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $V_{znom}$ | $V_{ZT}$ | at $I_{ZT}$ | $Z_{ZT}$ | at $I_{ZT}$ | $Z_{ZK}$ | at $I_{ZK}$ | $I_R$ | at $V_R$ |
| | | V | V | mA | Max. (Ω) | mA | Max. (Ω) | mA | Max. (μA) | V |
| BZT52C2V4W | MH | 2.4 | 2.2...2.6 | 5 | 100 | 5 | 600 | 1 | 50 | 1 |
| BZT52C2V7W | MJ | 2.7 | 2.5...2.9 | 5 | 100 | 5 | 600 | 1 | 20 | 1 |
| BZT52C3V0W | MK | 3.0 | 2.8...3.2 | 5 | 95 | 5 | 600 | 1 | 10 | 1 |
| BZT52C3V3W | MM | 3.3 | 3.1...3.5 | 5 | 95 | 5 | 600 | 1 | 5 | 1 |
| BZT52C3V6W | MN | 3.6 | 3.4...3.8 | 5 | 90 | 5 | 600 | 1 | 5 | 1 |
| BZT52C3V9W | MP | 3.9 | 3.7...4.1 | 5 | 90 | 5 | 600 | 1 | 3 | 1 |
| BZT52C4V3W | MR | 4.3 | 4...4.6 | 5 | 90 | 5 | 600 | 1 | 3 | 1 |
| BZT52C4V7W | MX | 4.7 | 4.4...5 | 5 | 80 | 5 | 500 | 1 | 3 | 2 |
| BZT52C5V1W | MY | 5.1 | 4.8...5.4 | 5 | 60 | 5 | 480 | 1 | 2 | 2 |
| BZT52C5V6W | MZ | 5.6 | 5.2...6 | 5 | 40 | 5 | 400 | 1 | 1 | 2 |
| BZT52C6V2W | NA | 6.2 | 5.8...6.6 | 5 | 10 | 5 | 150 | 1 | 3 | 4 |
| BZT52C6V8W | NB | 6.8 | 6.4...7.2 | 5 | 15 | 5 | 80 | 1 | 2 | 4 |
| BZT52C7V5W | NC | 7.5 | 7...7.9 | 5 | 15 | 5 | 80 | 1 | 1 | 5 |
| BZT52C8V2W | ND | 8.2 | 7.7...8.7 | 5 | 15 | 5 | 80 | 1 | 0.7 | 5 |
| BZT52C9V1W | NE | 9.1 | 8.5...9.6 | 5 | 15 | 5 | 100 | 1 | 0.5 | 6 |
| BZT52C10W | NF | 10 | 9.4...10.6 | 5 | 20 | 5 | 150 | 1 | 0.2 | 7 |
| BZT52C11W | NH | 11 | 10.4...11.6 | 5 | 20 | 5 | 150 | 1 | 0.1 | 8 |
| BZT52C12W | NJ | 12 | 11.4...12.7 | 5 | 25 | 5 | 150 | 1 | 0.1 | 8 |
| BZT52C13W | NK | 13 | 12.4...14.1 | 5 | 30 | 5 | 170 | 1 | 0.1 | 8 |
| BZT52C15W | NM | 15 | 13.8...15.6 | 5 | 30 | 5 | 200 | 1 | 0.1 | 10.5 |
| BZT52C16W | NN | 16 | 15.3...17.1 | 5 | 40 | 5 | 200 | 1 | 0.1 | 11.2 |
| BZT52C18W | NP | 18 | 16.8...19.1 | 5 | 45 | 5 | 225 | 1 | 0.1 | 12.6 |
| BZT52C20W | NR | 20 | 18.8...21.2 | 5 | 55 | 5 | 225 | 1 | 0.1 | 14 |
| BZT52C22W | NX | 22 | 20.8...23.3 | 5 | 55 | 5 | 250 | 1 | 0.1 | 15.4 |
| BZT52C24W | NY | 24 | 22.8...25.6 | 5 | 70 | 5 | 250 | 1 | 0.1 | 16.8 |
| BZT52C27W | NZ | 27 | 25.1...28.9 | 2 | 80 | 2 | 300 | 0.5 | 0.1 | 18.9 |
| BZT52C30W | PA | 30 | 28...32 | 2 | 80 | 2 | 300 | 0.5 | 0.1 | 21 |
| BZT52C33W | PB | 33 | 31...35 | 2 | 80 | 2 | 325 | 0.5 | 0.1 | 23.1 |
| BZT52C36W | PC | 36 | 34...38 | 2 | 90 | 2 | 350 | 0.5 | 0.1 | 25.2 |
| BZT52C39W | PD | 39 | 37...41 | 2 | 130 | 2 | 350 | 0.5 | 0.1 | 27.3 |
| BZT52C43W | 6A | 43 | 40...46 | 2.5 | 130 | 2 | 500 | 1 | 2 | 33 |
| BZT52C47W | 6B | 47 | 44...50 | 2.5 | 150 | 2 | 500 | 1 | 2 | 36 |
| BZT52C51W | 6C | 51 | 48...54 | 2.5 | 180 | 2 | 500 | 1 | 1 | 39 |
| BZT52C56W | 6D | 56 | 52...60 | 2.5 | 180 | 2 | 500 | 1 | 1 | 43 |
| BZT52C62W | 6E | 62 | 58...66 | 2.5 | 200 | 2 | 500 | 1 | 0.2 | 47 |
| BZT52C68W | 6F | 68 | 64...72 | 2.5 | 250 | 2 | 500 | 1 | 0.2 | 52 |
| BZT52C75W | 6H | 75 | 70...79 | 2.5 | 300 | 2 | 500 | 1 | 0.2 | 57 |

[1] $V_{ZT}$ is tested with pulses (20 ms).

## Typical Characteristics

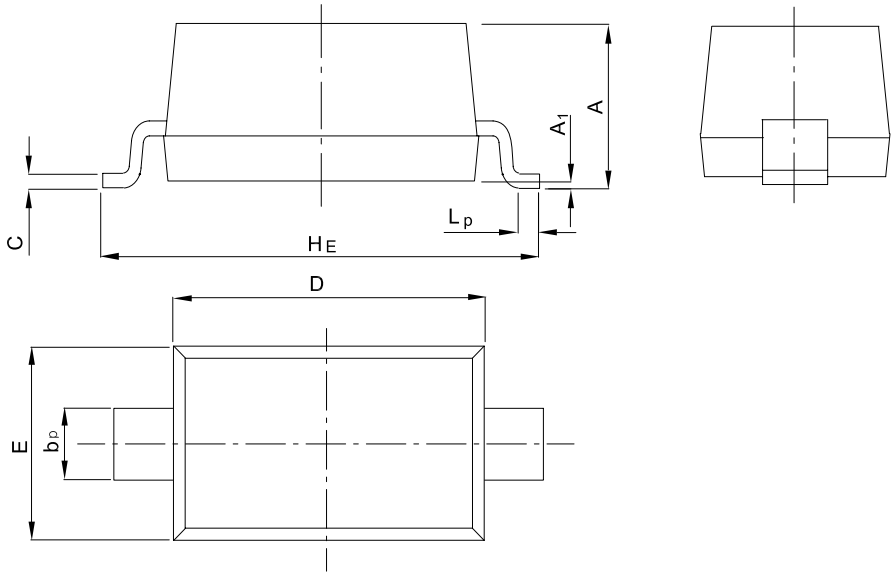


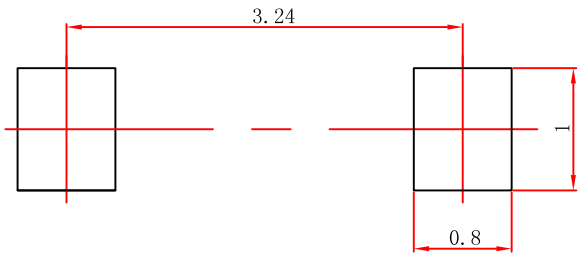

Power Dissipation vs Ambient Temperature

## SOD-123 Package Outline Dimensions



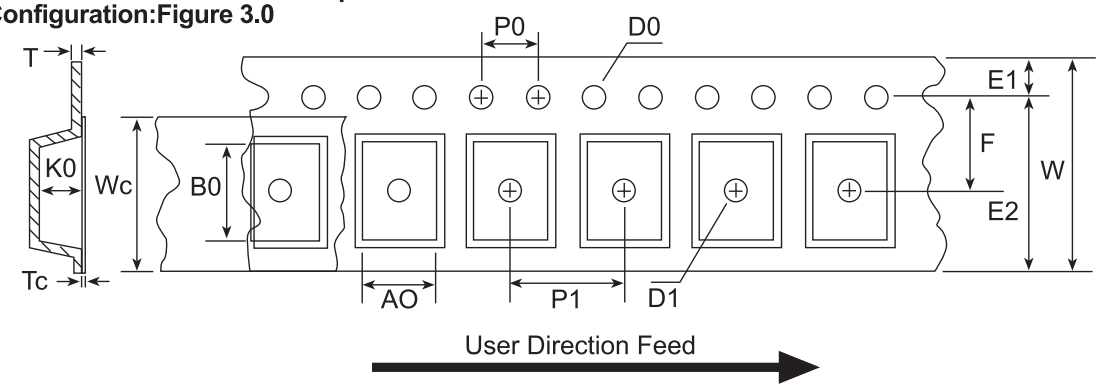

| UNIT | A | bp | C | D | E | HE | A1 | Lp |
|---|---|---|---|---|---|---|---|---|
| mm | 1.20<br>0.90 | 0.60<br>0.50 | 0.135<br>0.100 | 2.75<br>2.55 | 1.65<br>1.55 | 3.85<br>3.55 | 0.10<br>0.01 | 0.50<br>0.20 |

## SOD-123 Suggested Pad Layout




**Note:**
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

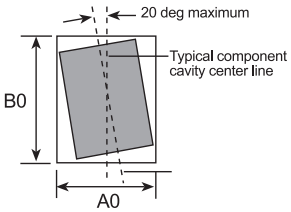
**SOD123 Embossed Carrier Tape**
**Configuration:Figure 3.0**



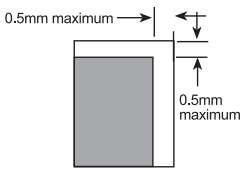

| Dimensions are millimeter | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pkg type | A0 | B0 | W | D0 | D1 | E1 | E2 | F | P1 | P0 | K0 | T | Wc | Tc |
| SOD123 (8mm) | 1.85 +/-0.10 | 3.94 +/-0.10 | 8.0 +/-0.3 | 1.50 +/-0.125 | 1.125 +/-0.125 | 1.75 +/-0.10 | 6.25 min | 3.50 +/-0.05 | 4.0 +/-0.10 | 4.0 +/-0.10 | 1.50 +/-0.10 | 0.20 +/-0.020 | 5.2 +/-0.20 | 0.06 +/-0.02 |

Notes:A0,B0 and K0 dimensions are detemined with respect to the EW Jedec RS-481 rotational and lateral movement requirements (see sketches A,B and C).


Sketch A (Side or Front Sectional View)
Component Rotation

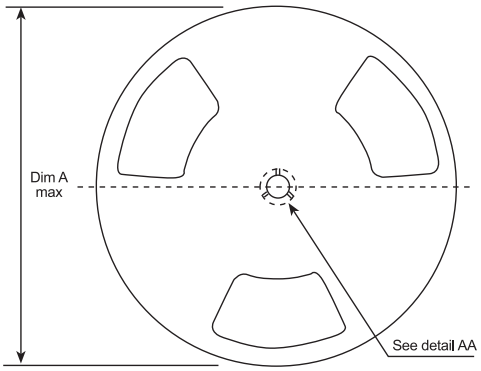



Sketch B (Top View)
Component Rotation

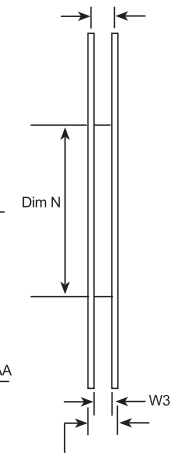


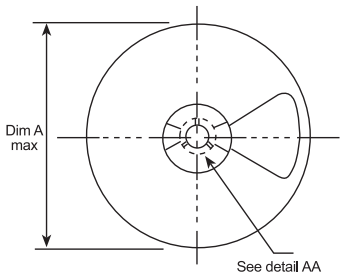

Sketch C (Top View)
Component lateral movement

**SOD123 Reel Configuration:Figure 4.0**

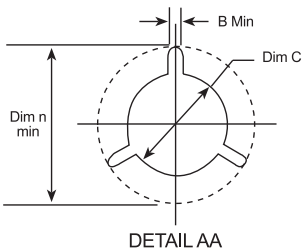



**13"Diameter Option**




**7"Diameter Option**




DETAIL AA

| Dimensions are in inches and millimeter | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Type Size | Reel Option | Dim A | Dim B | Dim C | Dim D | Dim N | Dim W1 | Dim W2 | Dim W3 (LSL-USL) |
| 8mm | 7" Dia | 7.00 177.8 | 0.059 1.5 | 512+0.020/-0.008 13+0.5/-0.2 | 0.795 20.0 | 2.165 55 | 0.331+0.059/-0.000 8.4+1.5/0 | 0.567 14.4 | 0.311-0.429 7.9-10.9 |
| 8mm | 13" Dia | 13.00 330 | 0.059 1.5 | 512+0.020/-0.008 13+0.5/-0.2 | 0.795 20.0 | 4.00 100 | 0.331+0.059/-0.000 8.4+1.5/0 | 0.567 14.4 | 0.311-0.429 7.9-10.9 |

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