



# BZX84B Series

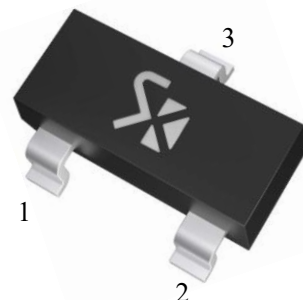
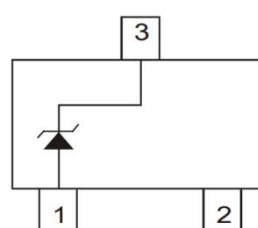
## Silicon Planar Zener Diodes

### Description

This series of Zener diodes is offered in the convenient, surface mount plastic SOT-23 package. These devices are designed to provide voltage regulation with minimum space requirement. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.

### Features

- Zener breakdown voltage range: 2.4V to 75V
- Package designed for optimal automated board assembly
- Small package size for high density applications



1.Anode 3.Cathode  
SOT-23 Plastic Package

### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                                 | Symbol          | Value    | Unit                 |
|-------------------------------------------|-----------------|----------|----------------------|
| Power Dissipation                         | $P_D$           | 300      | mW                   |
| Junction and Storage Temperature Range    | $T_J, T_{STG}$  | -65~+150 | $^{\circ}\text{C}$   |
| Typical Thermal Resistance <sup>(1)</sup> | $R_{\theta JA}$ | 417      | $^{\circ}\text{C/W}$ |

Note:(1) Alumina = 0.4 x 0.3 x 0.024 in, 99.5% alumina

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted, $V_F<0.9\text{V}$ @ $I_F=10\text{mA}$ )

| Type      | Marking | Zener Voltage Range <sup>(1)</sup> |        |        |             | Dynamic Impedance |                 |             | Reverse Leakage Current |          |
|-----------|---------|------------------------------------|--------|--------|-------------|-------------------|-----------------|-------------|-------------------------|----------|
|           |         | $V_{ZT}$                           |        |        | at $I_{ZT}$ | $Z_{ZT}$          | $Z_{ZK}$        | at $I_{ZK}$ | $I_R$                   | at $V_R$ |
|           |         | Min(V)                             | Nom(V) | Max(V) | (mA)        | Max( $\Omega$ )   | Max( $\Omega$ ) | (mA)        | Max(uA)                 | (V)      |
| BZX84B2V4 | CR      | 2.35                               | 2.4    | 2.45   | 5           | 100               | 600             | 1           | 50                      | 1        |
| BZX84B2V7 | CX      | 2.65                               | 2.7    | 2.75   | 5           | 100               | 600             | 1           | 20                      | 1        |
| BZX84B3V0 | CY      | 2.94                               | 3      | 3.06   | 5           | 95                | 600             | 1           | 10                      | 1        |
| BZX84B3V3 | CZ      | 3.23                               | 3.3    | 3.37   | 5           | 95                | 600             | 1           | 5                       | 1        |
| BZX84B3V6 | DA      | 3.53                               | 3.6    | 3.67   | 5           | 90                | 600             | 1           | 5                       | 1        |
| BZX84B3V9 | DB      | 3.82                               | 3.9    | 3.98   | 5           | 90                | 600             | 1           | 3                       | 1        |
| BZX84B4V3 | DC      | 4.21                               | 4.3    | 4.39   | 5           | 90                | 600             | 1           | 3                       | 1        |
| BZX84B4V7 | DD      | 4.61                               | 4.7    | 4.79   | 5           | 80                | 500             | 1           | 3                       | 2        |



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|           |    |      |     |      |   |     |     |     |      |      |
|-----------|----|------|-----|------|---|-----|-----|-----|------|------|
| BZX84B5V1 | DE | 5    | 5.1 | 5.2  | 5 | 60  | 480 | 1   | 2    | 2    |
| BZX84B5V6 | DF | 5.49 | 5.6 | 5.71 | 5 | 40  | 400 | 1   | 1    | 2    |
| BZX84B6V2 | DH | 6.08 | 6.2 | 6.32 | 5 | 10  | 150 | 1   | 3    | 4    |
| BZX84B6V8 | DJ | 6.66 | 6.8 | 6.94 | 5 | 15  | 80  | 1   | 2    | 4    |
| BZX84B7V5 | DK | 7.35 | 7.5 | 7.65 | 5 | 15  | 80  | 1   | 1    | 5    |
| BZX84B8V2 | DM | 8.04 | 8.2 | 8.36 | 5 | 15  | 80  | 1   | 0.7  | 5    |
| BZX84B9V1 | DN | 8.92 | 9.1 | 9.28 | 5 | 15  | 100 | 1   | 0.5  | 6    |
| BZX84B10  | DP | 9.8  | 10  | 10.2 | 5 | 20  | 150 | 1   | 0.2  | 7    |
| BZX84B11  | DR | 10.8 | 11  | 11.2 | 5 | 20  | 150 | 1   | 0.1  | 8    |
| BZX84B12  | DX | 11.8 | 12  | 12.2 | 5 | 25  | 150 | 1   | 0.1  | 8    |
| BZX84B13  | DY | 12.7 | 13  | 13.3 | 5 | 30  | 170 | 1   | 0.1  | 8    |
| BZX84B15  | DZ | 14.7 | 15  | 15.3 | 5 | 30  | 200 | 1   | 0.05 | 10.5 |
| BZX84B16  | EA | 15.7 | 16  | 16.3 | 5 | 40  | 200 | 1   | 0.05 | 11.2 |
| BZX84B18  | EB | 17.6 | 18  | 18.4 | 5 | 45  | 225 | 1   | 0.05 | 12.6 |
| BZX84B20  | EC | 19.6 | 20  | 20.4 | 5 | 55  | 225 | 1   | 0.05 | 14   |
| BZX84B22  | ED | 21.6 | 22  | 22.4 | 5 | 55  | 250 | 1   | 0.05 | 15.4 |
| BZX84B24  | EE | 23.5 | 24  | 24.5 | 5 | 70  | 250 | 1   | 0.05 | 16.8 |
| BZX84B27  | EF | 26.5 | 27  | 27.5 | 2 | 80  | 300 | 0.5 | 0.05 | 18.9 |
| BZX84B30  | EH | 29.4 | 30  | 30.6 | 2 | 80  | 300 | 0.5 | 0.05 | 21   |
| BZX84B33  | EJ | 32.3 | 33  | 33.7 | 2 | 80  | 325 | 0.5 | 0.05 | 23.1 |
| BZX84B36  | EK | 35.3 | 36  | 36.7 | 2 | 90  | 350 | 0.5 | 0.05 | 25.2 |
| BZX84B39  | EM | 38.2 | 39  | 39.8 | 2 | 130 | 350 | 0.5 | 0.05 | 27.3 |
| BZX84B43  | EN | 42.1 | 43  | 43.9 | 2 | 150 | 375 | 0.5 | 0.05 | 30.1 |
| BZX84B47  | EP | 46.1 | 47  | 47.9 | 2 | 170 | 375 | 0.5 | 0.05 | 32.9 |
| BZX84B51  | ER | 50   | 51  | 52   | 2 | 180 | 400 | 0.5 | 0.05 | 35.7 |
| BZX84B56  | EX | 54.9 | 56  | 57.1 | 2 | 200 | 425 | 0.5 | 0.05 | 39.2 |
| BZX84B62  | EY | 60.8 | 62  | 63.2 | 2 | 215 | 450 | 0.5 | 0.05 | 43.4 |
| BZX84B68  | EZ | 66.6 | 68  | 69.4 | 2 | 240 | 475 | 0.5 | 0.05 | 47.6 |
| BZX84B75  | FA | 73.5 | 75  | 76.5 | 2 | 255 | 500 | 0.5 | 0.05 | 52.5 |

Note:(1)Tested with pulses  $t_p = 20\text{ms}$ .



# BZX84B Series

## Typical Characteristics

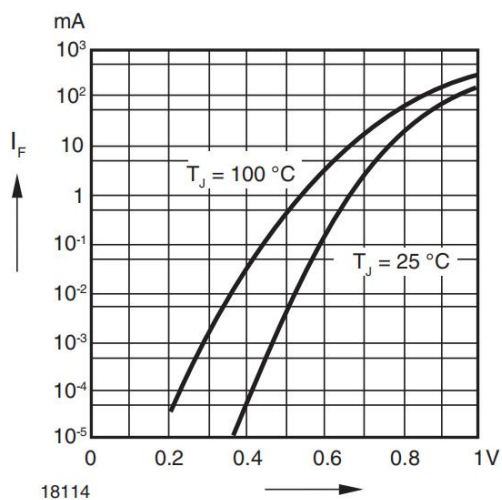


Fig. 1 - Forward Characteristics

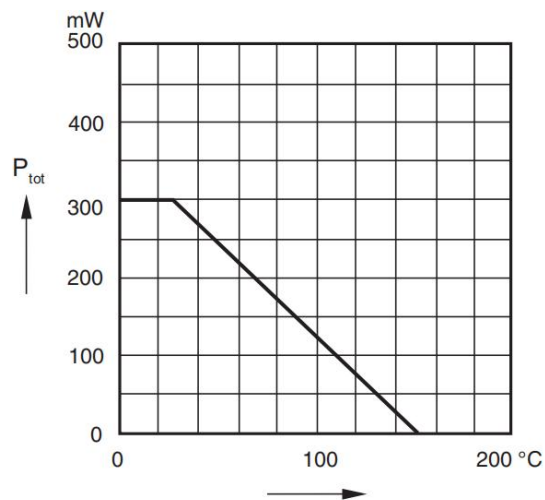


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

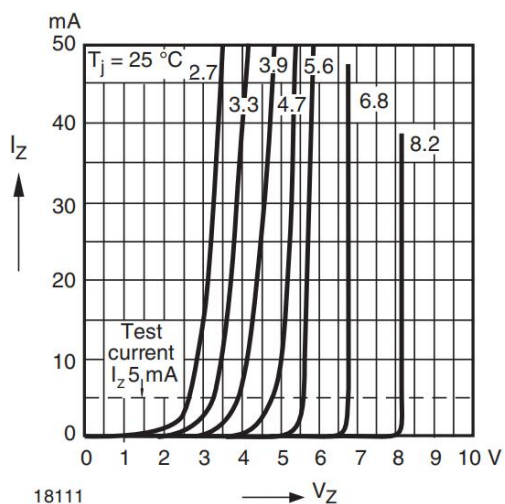


Fig. 3 - Breakdown Characteristics

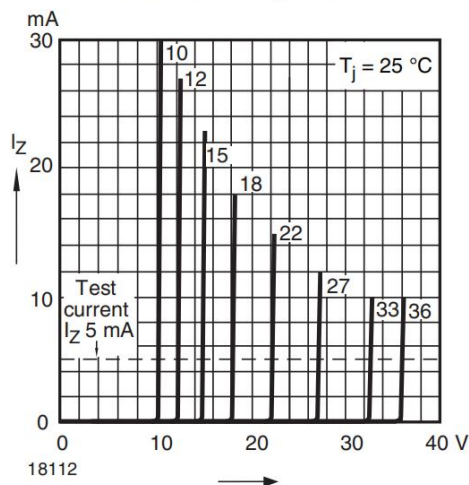


Fig. 4 - Breakdown Characteristics

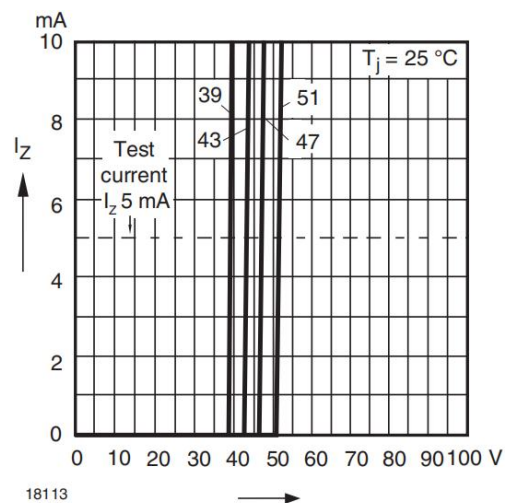
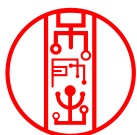


Fig. 5 - Breakdown Characteristics

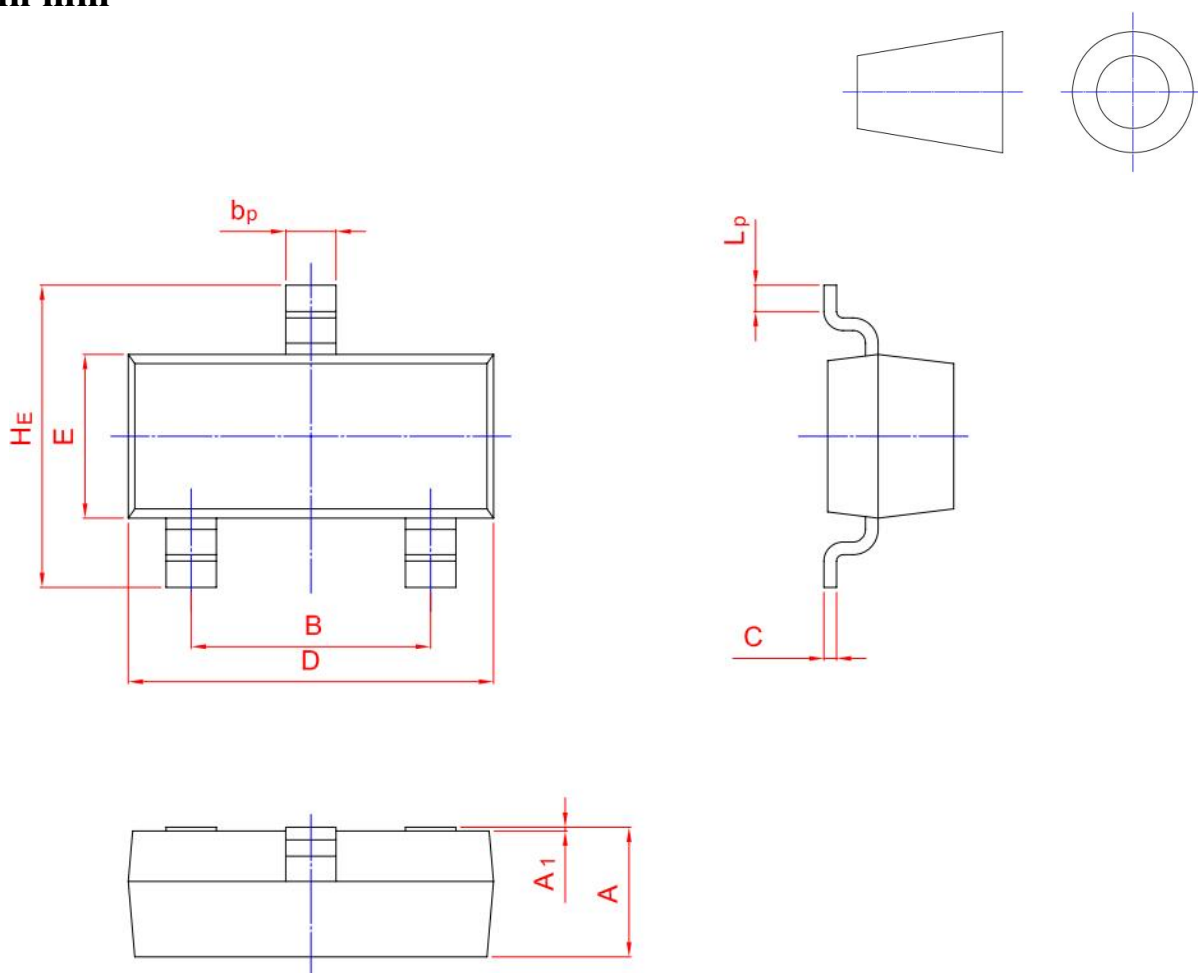


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## Package Information

SOT-23

Dimensions in mm



| UNIT | A            | B            | b <sub>p</sub> | C            | D            | E            | H <sub>E</sub> | A <sub>1</sub> | L <sub>p</sub> |
|------|--------------|--------------|----------------|--------------|--------------|--------------|----------------|----------------|----------------|
| mm   | 1.40<br>0.95 | 2.04<br>1.78 | 0.50<br>0.35   | 0.19<br>0.08 | 3.10<br>2.70 | 1.65<br>1.20 | 3.00<br>2.20   | 0.100<br>0.013 | 0.50<br>0.20   |



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