

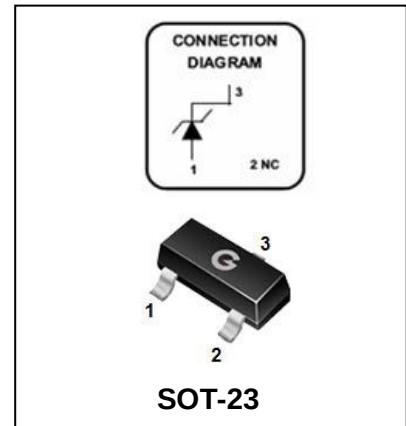
## SMT-Type Zener Diode

## BZX84B2V0 - BZX84B75

### FEATURES

- Large selection of zener voltages: 2.0V ~ 75V
- Tight voltage tolerance:  $\pm 2\%$  for B-series
- Ultra low-profile package well suited for automated assembly
- MSL Class 1 compatible
- RoHS compliant with Halogen-free

HF



### APPLICATIONS

- General voltage regulation
- Mobile & handheld systems

### ORDERING INFORMATION

| Part Number          | Marking                        | Package |
|----------------------|--------------------------------|---------|
| BZX84B2V0 - BZX84B75 | See Electrical Characteristics | SOT-23  |

### MAXIMUM RATING (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                                         | Symbol          | Value      | Unit               |
|---------------------------------------------------|-----------------|------------|--------------------|
| Forward Voltage @ $I_F = 10\text{mA}$             | $V_F$           | 0.9        | V                  |
| Power Dissipation                                 | $P_D$           | 350        | mW                 |
| Thermal Resistance Junction-to-Air <sup>*1</sup>  | $R_{\theta JA}$ | 316        | $^\circ\text{C/W}$ |
| Thermal Resistance Junction-to-Case <sup>*1</sup> | $R_{\theta JC}$ | 172        | $^\circ\text{C/W}$ |
| Thermal Resistance Junction-to-Lead <sup>*1</sup> | $R_{\theta JL}$ | 160        | $^\circ\text{C/W}$ |
| Junction Temperature Range                        | $T_J$           | -55 ~ +150 | $^\circ\text{C}$   |
| Storage Temperature Range                         | $T_{STG}$       | -65 ~ +150 | $^\circ\text{C}$   |

Note 1: The data tested by surface mounted on a 15mm \* 15mm \* 1mm FR4-epoxy P.C.B

## SMT-Type Zener Diode

## BZX84B2V0 - BZX84B75

### ELECTRICAL CHARACTERISTICS (@ T<sub>A</sub> = 25°C unless otherwise specified)

| Part Number | Marking Code | Zener Voltage V <sub>Z</sub> (V) |       |       | @ I <sub>ZT</sub> (mA) | Maximum Zener Impedance               |                     |                        | Temperature Coefficient @ I <sub>ZT</sub> T <sub>C</sub> (mV/°C) |      | Maximum Reverse Current I <sub>R</sub> (μA) | @ V <sub>R</sub> (V) |
|-------------|--------------|----------------------------------|-------|-------|------------------------|---------------------------------------|---------------------|------------------------|------------------------------------------------------------------|------|---------------------------------------------|----------------------|
|             |              | Min.                             | Typ.  | Max.  |                        | Z <sub>ZT</sub> (Ω) @ I <sub>ZT</sub> | Z <sub>ZK</sub> (Ω) | @ I <sub>ZK</sub> (mA) | Min.                                                             | Max. |                                             |                      |
| BZX84B2V0   | Z49          | 1.96                             | 2.00  | 2.04  | 5                      | 100                                   | 1000                | 0.5                    | -3.5                                                             | 0.0  | 120.000                                     | 0.5                  |
| BZX84B2V2   | Z87          | 2.16                             | 2.20  | 2.24  | 5                      | 100                                   | 1000                | 0.5                    | -3.5                                                             | 0.0  | 120.000                                     | 0.7                  |
| BZX84B2V4   | Z50          | 2.35                             | 2.40  | 2.45  | 5                      | 100                                   | 600                 | 1.0                    | -3.5                                                             | 0.0  | 50.000                                      | 1.0                  |
| BZX84B2V7   | Z51          | 2.65                             | 2.70  | 2.75  | 5                      | 100                                   | 600                 | 1.0                    | -3.5                                                             | 0.0  | 20.000                                      | 1.0                  |
| BZX84B3V0   | Z52          | 2.94                             | 3.00  | 3.06  | 5                      | 95                                    | 600                 | 1.0                    | -3.5                                                             | 0.0  | 10.000                                      | 1.0                  |
| BZX84B3V3   | Z53          | 3.23                             | 3.30  | 3.37  | 5                      | 95                                    | 600                 | 1.0                    | -3.5                                                             | 0.0  | 5.000                                       | 1.0                  |
| BZX84B3V6   | Z54          | 3.53                             | 3.60  | 3.67  | 5                      | 90                                    | 600                 | 1.0                    | -3.5                                                             | 0.0  | 5.000                                       | 1.0                  |
| BZX84B3V9   | Z55          | 3.82                             | 3.90  | 3.98  | 5                      | 90                                    | 600                 | 1.0                    | -3.5                                                             | 0.0  | 3.000                                       | 1.0                  |
| BZX84B4V3   | Z56          | 4.21                             | 4.30  | 4.39  | 5                      | 90                                    | 600                 | 1.0                    | -3.5                                                             | 0.0  | 3.000                                       | 1.0                  |
| BZX84B4V7   | Z57          | 4.61                             | 4.70  | 4.79  | 5                      | 80                                    | 500                 | 1.0                    | -3.5                                                             | 0.2  | 3.000                                       | 2.0                  |
| BZX84B5V1   | Z58          | 5.00                             | 5.10  | 5.20  | 5                      | 60                                    | 480                 | 1.0                    | -2.7                                                             | 1.2  | 2.000                                       | 2.0                  |
| BZX84B5V6   | Z59          | 5.49                             | 5.60  | 5.71  | 5                      | 40                                    | 400                 | 1.0                    | -2.0                                                             | 2.5  | 1.000                                       | 2.0                  |
| BZX84B6V2   | Z60          | 6.08                             | 6.20  | 6.32  | 5                      | 10                                    | 150                 | 1.0                    | 0.4                                                              | 3.7  | 3.000                                       | 4.0                  |
| BZX84B6V8   | Z61          | 6.66                             | 6.80  | 6.94  | 5                      | 15                                    | 80                  | 1.0                    | 1.2                                                              | 4.5  | 2.000                                       | 4.0                  |
| BZX84B7V5   | Z62          | 7.35                             | 7.50  | 7.65  | 5                      | 15                                    | 80                  | 1.0                    | 2.5                                                              | 5.3  | 1.000                                       | 5.0                  |
| BZX84B8V2   | Z63          | 8.04                             | 8.20  | 8.36  | 5                      | 15                                    | 80                  | 1.0                    | 3.2                                                              | 6.2  | 0.700                                       | 5.0                  |
| BZX84B9V1   | Z64          | 8.92                             | 9.10  | 9.28  | 5                      | 15                                    | 100                 | 1.0                    | 3.8                                                              | 7.0  | 0.500                                       | 6.0                  |
| BZX84B10    | Z65          | 9.80                             | 10.00 | 10.20 | 5                      | 20                                    | 150                 | 1.0                    | 4.5                                                              | 8.0  | 0.200                                       | 7.0                  |
| BZX84B11    | Z66          | 10.78                            | 11.00 | 11.22 | 5                      | 20                                    | 150                 | 1.0                    | 5.4                                                              | 9.0  | 0.100                                       | 8.0                  |
| BZX84B12    | Z67          | 11.76                            | 12.00 | 12.24 | 5                      | 25                                    | 150                 | 1.0                    | 6.0                                                              | 10.0 | 0.100                                       | 8.0                  |
| BZX84B13    | Z68          | 12.74                            | 13.00 | 13.26 | 5                      | 30                                    | 170                 | 1.0                    | 7.0                                                              | 11.0 | 0.100                                       | 8.0                  |
| BZX84B15    | Z69          | 14.70                            | 15.00 | 15.30 | 5                      | 30                                    | 200                 | 1.0                    | 9.2                                                              | 13.0 | 0.050                                       | 10.5                 |
| BZX84B16    | Z70          | 15.68                            | 16.00 | 16.32 | 5                      | 40                                    | 200                 | 1.0                    | 10.4                                                             | 14.0 | 0.050                                       | 11.2                 |
| BZX84B18    | Z71          | 17.64                            | 18.00 | 18.36 | 5                      | 45                                    | 225                 | 1.0                    | 12.4                                                             | 16.0 | 0.050                                       | 12.6                 |
| BZX84B20    | Z72          | 19.60                            | 20.00 | 20.40 | 5                      | 55                                    | 225                 | 1.0                    | 14.4                                                             | 18.0 | 0.050                                       | 14.0                 |
| BZX84B22    | Z73          | 21.56                            | 22.00 | 22.44 | 5                      | 55                                    | 250                 | 1.0                    | 16.4                                                             | 20.0 | 0.050                                       | 15.4                 |
| BZX84B24    | Z74          | 23.52                            | 24.00 | 24.48 | 5                      | 70                                    | 250                 | 1.0                    | 18.4                                                             | 22.0 | 0.050                                       | 16.8                 |
| BZX84B27    | Z75          | 26.46                            | 27.00 | 27.54 | 2                      | 80                                    | 300                 | 0.5                    | 21.4                                                             | 25.3 | 0.050                                       | 18.9                 |
| BZX84B30    | Z76          | 29.40                            | 30.00 | 30.60 | 2                      | 80                                    | 300                 | 0.5                    | 24.4                                                             | 29.4 | 0.050                                       | 21.0                 |
| BZX84B33    | Z77          | 32.34                            | 33.00 | 33.66 | 2                      | 80                                    | 325                 | 0.5                    | 27.4                                                             | 33.4 | 0.050                                       | 23.1                 |
| BZX84B36    | Z78          | 35.28                            | 36.00 | 36.72 | 2                      | 90                                    | 350                 | 0.5                    | 30.4                                                             | 37.4 | 0.050                                       | 25.2                 |
| BZX84B39    | Z79          | 38.22                            | 39.00 | 39.78 | 2                      | 130                                   | 350                 | 0.5                    | 33.4                                                             | 41.2 | 0.050                                       | 27.3                 |
| BZX84B43    | Z80          | 42.14                            | 43.00 | 43.86 | 2                      | 150                                   | 375                 | 0.5                    | 37.6                                                             | 46.6 | 0.050                                       | 30.1                 |
| BZX84B47    | Z81          | 46.06                            | 47.00 | 47.94 | 2                      | 170                                   | 375                 | 0.5                    | 42.0                                                             | 51.8 | 0.050                                       | 32.9                 |
| BZX84B51    | Z82          | 49.98                            | 51.00 | 52.02 | 2                      | 180                                   | 400                 | 0.5                    | 46.6                                                             | 57.2 | 0.050                                       | 35.7                 |
| BZX84B56    | Z83          | 54.88                            | 56.00 | 57.12 | 2                      | 200                                   | 400                 | 0.5                    | 52.2                                                             | 63.8 | 0.045                                       | 39.2                 |
| BZX84B62    | Z84          | 60.76                            | 62.00 | 63.24 | 2                      | 215                                   | 423                 | 0.5                    | 58.8                                                             | 71.6 | 0.045                                       | 43.4                 |
| BZX84B68    | Z85          | 66.64                            | 68.00 | 69.36 | 2                      | 240                                   | 447                 | 0.5                    | 65.6                                                             | 79.8 | 0.045                                       | 47.6                 |
| BZX84B75    | Z86          | 73.50                            | 75.00 | 76.50 | 2                      | 255                                   | 470                 | 0.5                    | 73.4                                                             | 88.6 | 0.045                                       | 52.5                 |

## SMT-Type Zener Diode

## BZX84B2V0 - BZX84B75

### TYPICAL CHARACTERISTICS (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

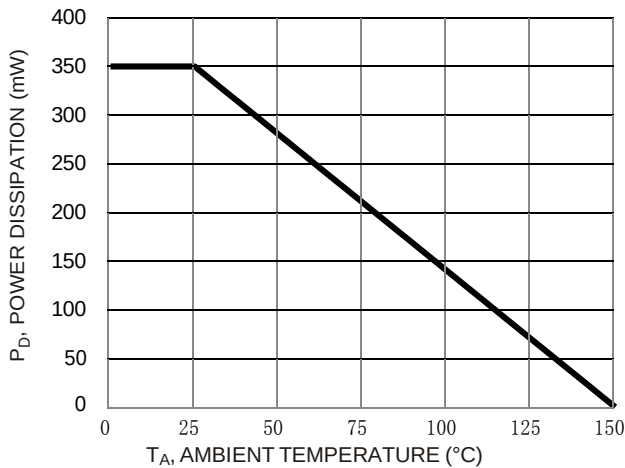


Fig. 1 Power Derating Curve

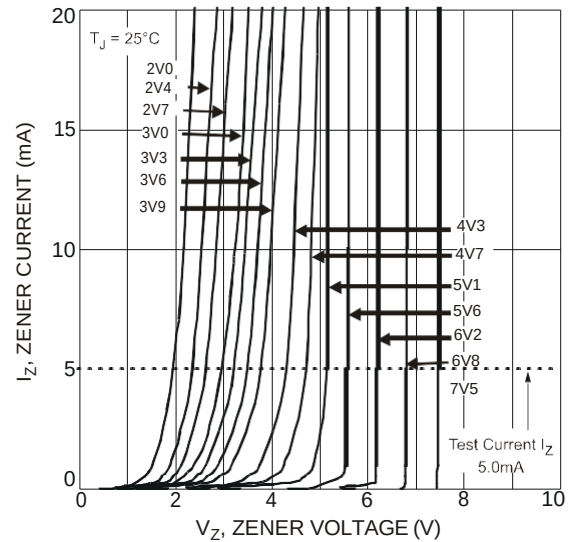


Fig. 2 Typical Zener Breakdown Characteristics

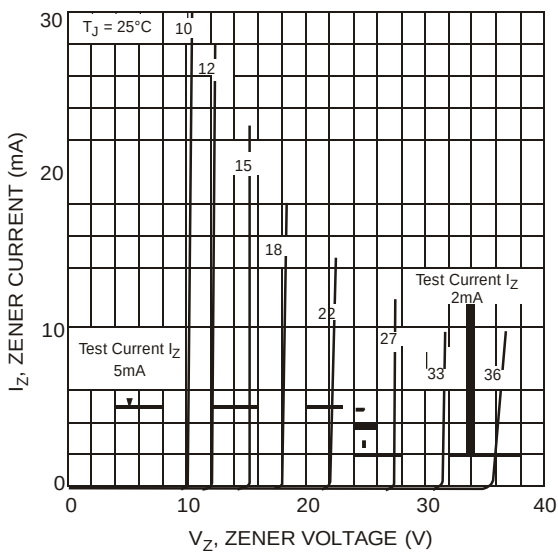


Fig. 3 Typical Zener Breakdown Characteristics

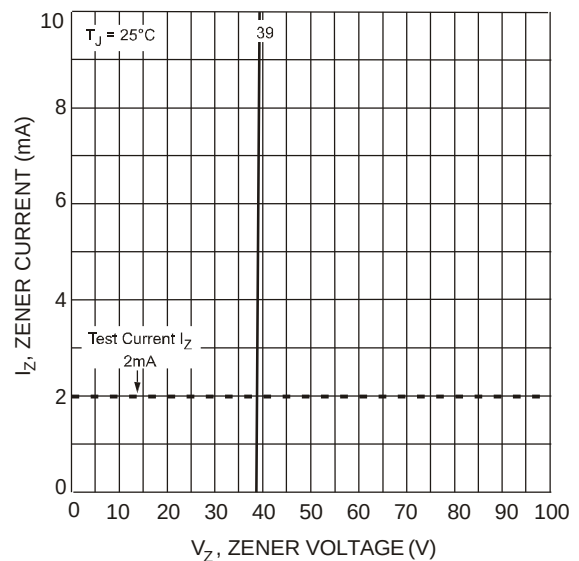


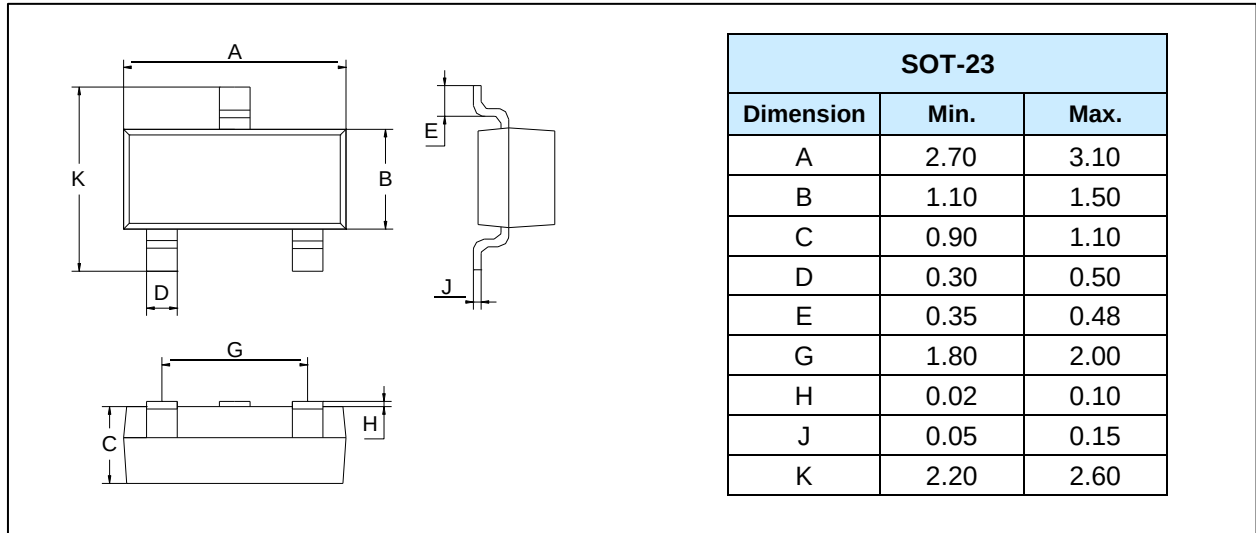
Fig. 4 Typical Zener Breakdown Characteristics

## SMT-Type Zener Diode

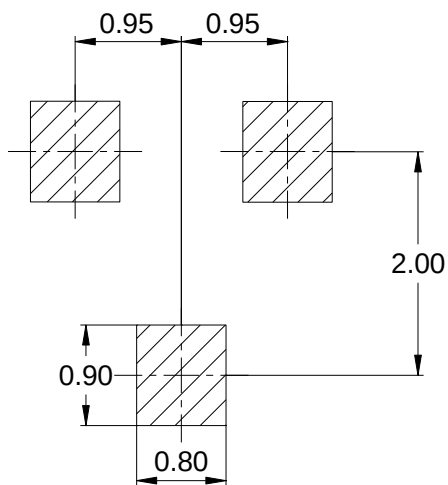
## BZX84B2V0 - BZX84B75

### PACKAGE OUTLINE (Unit: mm)

Plastic surface mounted package



### MOUNTING PAD LAYOUT (Unit: mm)



### PACKAGE INFORMATION

| Part Number          | Package | Shipping Quantity     |
|----------------------|---------|-----------------------|
| BZX84B2V0 - BZX84B75 | SOT-23  | 3000pcs / Tape & Reel |