

SuperDiode – 2.2V~70V, 300mW SOT-23 Plastic-Encapsulate Zener Diode


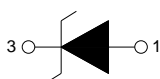
1. Features

- Low Zener impedance
- Power dissipation of 300mW
- High stability and reliability

2. Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

3. Outline and Circuit

| Part Number | Outline | Circuit |
|-------------|---|---|
| BZX84Cxx |  |  |

4. Specification

Absolute Maximum Rating & Thermal Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameters | Symbol | Value | Unit |
|--|------------------|---------|------|
| Power Dissipation (Note 1) | P _D | 300 | mW |
| Forward Voltage @IF=10mA (Note 2) | V _F | 0.9 | V |
| Storage temperature range | T _{STG} | -65~150 | °C |
| Thermal resistance junction to ambient air | R _{thA} | 417 | K/W |

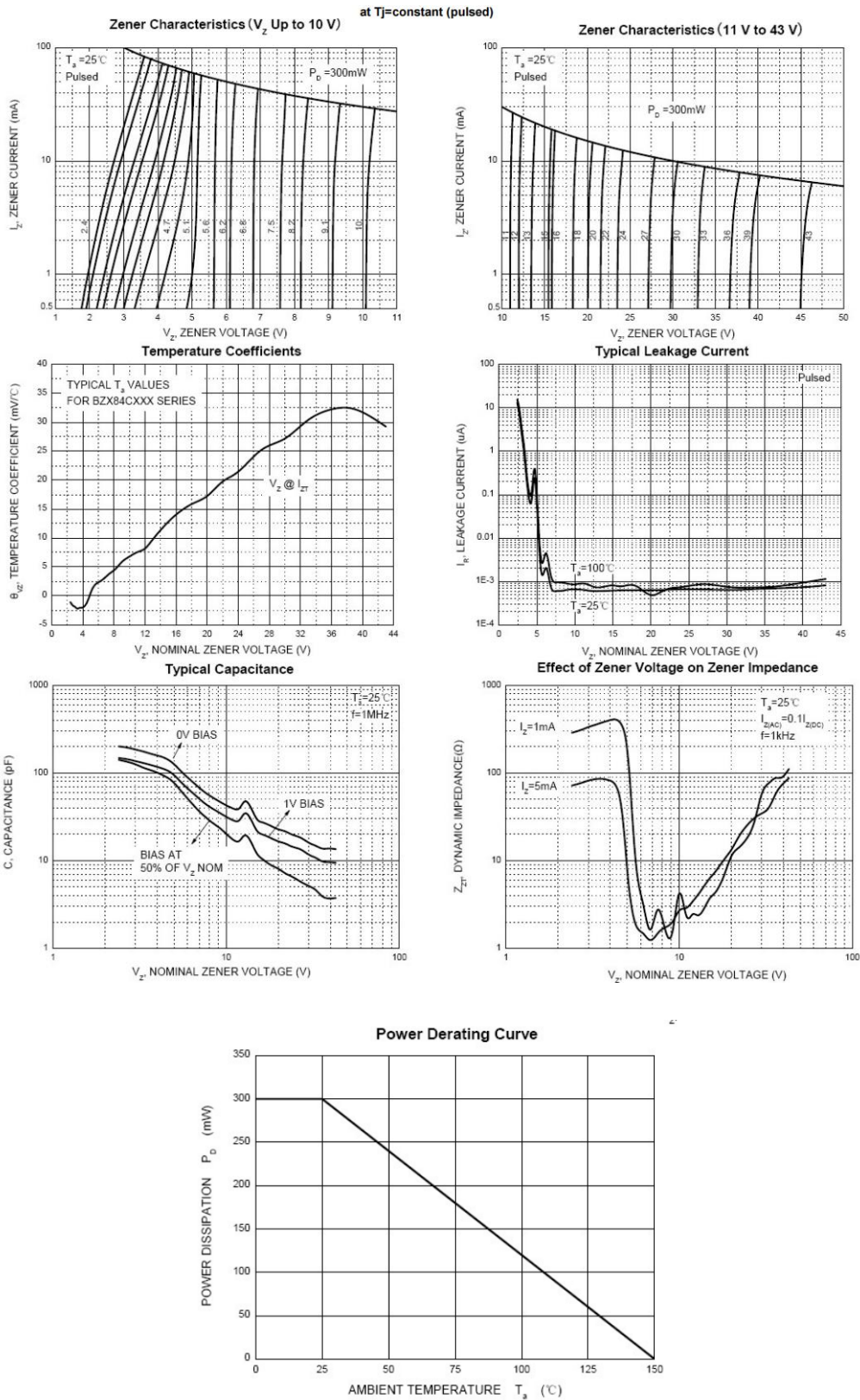
NOTES:

1. Valid provided that device terminals are kept at ambient temperature.
2. Test with pulse, period=5ms, pulse width=300us
3. f=1KHz

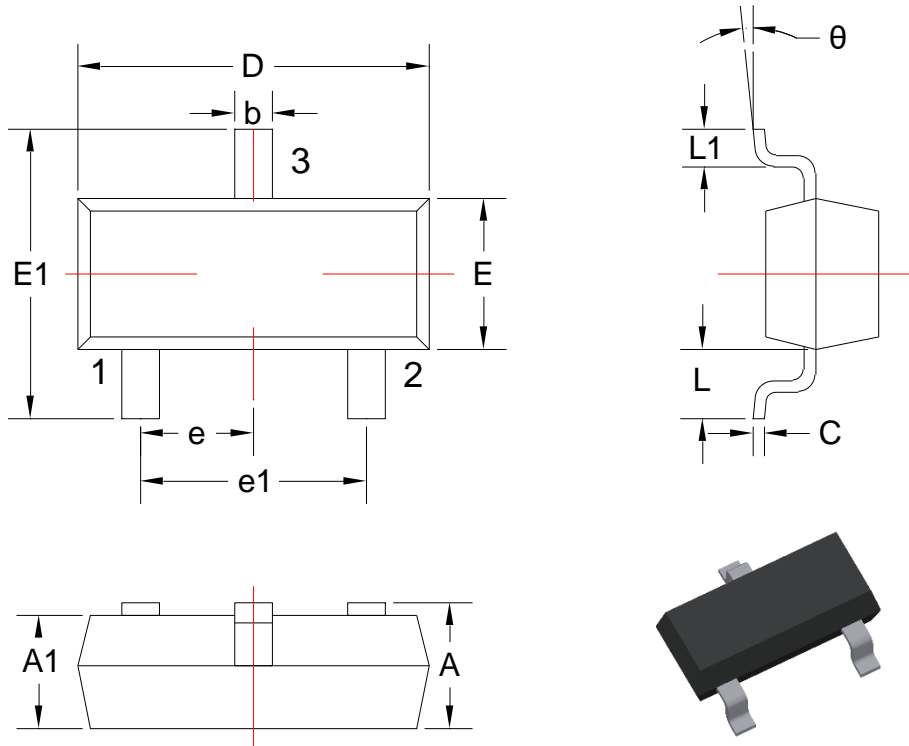
Electrical Characteristics(At TA = 25°C unless otherwise specified)

| Device | Marking | Zener Voltage Range | | | Maximum Zener Impedance | | | Reverse Current | | Temp. Coefficient of Zener voltage@Izt=5mA | |
|-----------|---------|---------------------|------|------|-------------------------|---------|------|-----------------|------|--|-------|
| | | Vz@Izt | | | Zzt@Izt | Zzk@Izk | | IR@VR | | | |
| | | Min | Max | Izt | Max | Max | Izk | Max | VR | Min | Max |
| | | (V) | (V) | (mA) | (Ω) | (Ω) | (mA) | (uA) | (V) | mV/°C | mV/°C |
| BZX84C2V4 | Z11 | 2.2 | 2.6 | 5 | 100 | 600 | 1.0 | 50 | 1.0 | -3.5 | 0.0 |
| BZX84C2V7 | Z12 | 2.5 | 2.9 | 5 | 100 | 600 | 1.0 | 20 | 1.0 | -3.5 | 0.0 |
| BZX84C3V0 | Z13 | 2.8 | 3.2 | 5 | 95 | 600 | 1.0 | 10 | 1.0 | -3.5 | 0.0 |
| BZX84C3V3 | Z14 | 3.1 | 3.5 | 5 | 95 | 600 | 1.0 | 5 | 1.0 | -3.5 | 0.0 |
| BZX84C3V6 | Z15 | 3.4 | 3.8 | 5 | 90 | 600 | 1.0 | 5 | 1.0 | -3.5 | 0.0 |
| BZX84C3V9 | Z16 | 3.7 | 4.1 | 5 | 90 | 600 | 1.0 | 3 | 1.0 | -3.5 | 0.0 |
| BZX84C4V3 | Z17 | 4.0 | 4.6 | 5 | 90 | 600 | 1.0 | 3 | 1.0 | -3.5 | 0.0 |
| BZX84C4V7 | Z1 | 4.4 | 5.0 | 5 | 80 | 500 | 1.0 | 3 | 2.0 | -3.5 | 0.2 |
| BZX84C5V1 | Z2 | 4.8 | 5.4 | 5 | 60 | 480 | 1.0 | 2 | 2.0 | -2.7 | 1.2 |
| BZX84C5V6 | Z3 | 5.2 | 6.0 | 5 | 40 | 400 | 1.0 | 1 | 2.0 | -2.0 | 2.5 |
| BZX84C6V2 | Z4 | 5.8 | 6.6 | 5 | 10 | 150 | 1.0 | 3 | 4.0 | 0.4 | 3.7 |
| BZX84C6V8 | Z5 | 6.4 | 7.2 | 5 | 15 | 80 | 1.0 | 2 | 4.0 | 1.2 | 4.5 |
| BZX84C7V5 | Z6 | 7.0 | 7.9 | 5 | 15 | 80 | 1.0 | 1 | 5.0 | 2.5 | 5.3 |
| BZX84C8V2 | Z7 | 7.7 | 8.7 | 5 | 15 | 80 | 1.0 | 0.7 | 5.0 | 3.2 | 6.2 |
| BZX84C9V1 | Z8 | 8.5 | 9.6 | 5 | 15 | 100 | 1.0 | 0.5 | 6.0 | 3.8 | 7.0 |
| BZX84C10 | Z9 | 9.4 | 10.6 | 5 | 20 | 150 | 1.0 | 0.2 | 7.0 | 4.5 | 8.0 |
| BZX84C11 | Y1• | 10.4 | 11.6 | 5 | 20 | 150 | 1.0 | 0.1 | 8.0 | 5.4 | 9.0 |
| BZX84C12 | Y2• | 11.4 | 12.7 | 5 | 25 | 150 | 1.0 | 0.1 | 8.0 | 6.0 | 10.0 |
| BZX84C13 | Y3 | 12.4 | 14.1 | 5 | 30 | 170 | 1.0 | 0.1 | 8.0 | 7.0 | 11.0 |
| BZX84C15 | Y4 | 13.8 | 15.6 | 5 | 30 | 200 | 1.0 | 0.1 | 10.5 | 9.2 | 13.0 |
| BZX84C16 | Y5 | 15.3 | 17.1 | 5 | 40 | 200 | 1.0 | 0.1 | 11.2 | 10.4 | 14.0 |
| BZX84C18 | Y6• | 16.8 | 19.1 | 5 | 45 | 225 | 1.0 | 0.1 | 12.6 | 12.4 | 16.0 |
| BZX84C20 | Y7 | 18.8 | 21.2 | 5 | 55 | 225 | 1.0 | 0.1 | 14.0 | 14.4 | 18.0 |
| BZX84C22 | Y8 | 20.8 | 23.3 | 5 | 55 | 250 | 1.0 | 0.1 | 15.4 | 16.4 | 20.0 |
| BZX84C24 | Y9 | 22.8 | 25.6 | 5 | 70 | 250 | 1.0 | 0.1 | 16.8 | 18.4 | 22.0 |
| BZX84C27 | Y10 | 25.1 | 28.9 | 2 | 80 | 300 | 0.5 | 0.1 | 18.9 | 21.4 | 25.3 |
| BZX84C30 | Y11• | 28 | 32 | 2 | 80 | 300 | 0.5 | 0.1 | 21.0 | 24.4 | 29.4 |
| BZX84C33 | Y12 | 31 | 35 | 2 | 80 | 325 | 0.5 | 0.1 | 23.1 | 27.1 | 33.4 |
| BZX84C36 | Y13 | 34 | 38 | 2 | 90 | 350 | 0.5 | 0.1 | 25.2 | 30.4 | 37.4 |
| BZX84C39 | Y14 | 37 | 41 | 2 | 130 | 350 | 0.5 | 0.1 | 27.3 | 33.4 | 41.2 |
| BZX84C43 | Y15 | 40 | 46 | 2 | 100 | 700 | 1.0 | 0.1 | 32.0 | 10.0 | 12.0 |
| BZX84C47 | Y16 | 44 | 50 | 2 | 100 | 750 | 1.0 | 0.1 | 35.0 | 10.0 | 12.0 |
| BZX84C51 | Y17 | 48 | 54 | 2 | 125 | 750 | 1.0 | 0.1 | 38.0 | 10.0 | 12.0 |
| BZX84C56 | Y18 | 52 | 60 | 2 | 135 | 700 | 1.0 | 0.1 | 39.0 | 10.0 | 12.0 |
| BZX84C62 | Y19 | 58 | 66 | 2 | 200 | 1000 | 1.0 | 0.2 | 47.0 | 10.0 | 12.0 |
| BZX84C68 | Y20 | 64 | 72 | 2 | 250 | 1000 | 1.0 | 0.2 | 52.0 | 10.0 | 12.0 |
| BZX84C75 | Y21• | 70 | 79 | 2 | 300 | 1000 | 1.0 | 0.2 | 57.0 | 10.0 | 12.0 |

5. Typical Characteristic

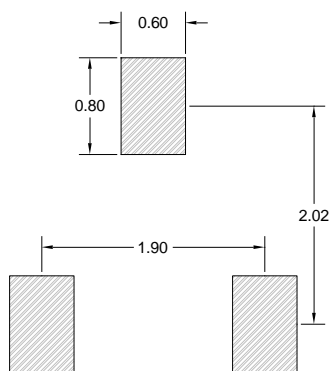


6. Dimension and Patterns (SOT-23)



Units: mm

| Symbol | Dimensions | | Symbol | Dimensions | |
|--------|------------|-------|--------|------------|-------|
| | Min. | Max. | | Min. | Max. |
| A | 0.900 | 1.150 | E1 | 2.250 | 2.550 |
| A1 | 0.900 | 1.050 | e | 0.950TYP | |
| b | 0.300 | 0.500 | e1 | 1.800 | 2.000 |
| c | 0.080 | 0.150 | L | 0.550REF | |
| D | 2.800 | 3.000 | L1 | 0.300 | 0.500 |
| E | 1.200 | 1.400 | θ | 0° | 8° |



Note:

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

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