



**THE DATASHEET OF
BZX85C6V8**

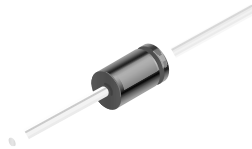




ON Semiconductor®

BZX85C3V3 - BZX85C56 Zener Diodes

Tolerance = 5%



DO-41 Glass Case

COLOR BAND DENOTES CATHODE

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Units |
|----------------|--|-------------|----------------------|
| P_D | Power Dissipation @ $T_A = 25^\circ\text{C}$ | 1.0 | W |
| | Power Dissipation @ $T_L = 25^\circ\text{C}$ at 4 mm distance from the glass package | 1.3 | |
| | Derate above 50°C | 6.67 | mW/ $^\circ\text{C}$ |
| T_J, T_{STG} | Operating and Storage Temperature Range | -65 to +200 | $^\circ\text{C}$ |

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Device | Zener Voltage ⁽¹⁾ | | Zener Impedance | | | Leakage Current | | |
|-----------|------------------------------|------|-----------------|--------------|-------------------|-----------------|--------------------|-------|
| | V_Z (V) | | I_Z | $Z_Z @ I_Z$ | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | |
| | Min. | Max. | mA | (Ω) | (Ω) | (mA) | $\mu\text{A Max.}$ | Volts |
| BZX85C3V3 | 3.1 | 3.5 | 80 | 20 | 400 | 1 | 60 | 1 |
| BZX85C3V6 | 3.4 | 3.8 | 60 | 15 | 500 | 1 | 30 | 1 |
| BZX85C3V9 | 3.7 | 4.1 | 60 | 15 | 500 | 1 | 5 | 1 |
| BZX85C4V3 | 4.0 | 4.6 | 50 | 13 | 500 | 1 | 3 | 1 |
| BZX85C4V7 | 4.4 | 5 | 45 | 13 | 600 | 1 | 3 | 1.5 |
| BZX85C5V1 | 4.8 | 5.4 | 45 | 10 | 500 | 1 | 1 | 2 |
| BZX85C5V6 | 5.2 | 6 | 45 | 7 | 400 | 1 | 1 | 2 |
| BZX85C6V2 | 5.8 | 6.6 | 35 | 4 | 300 | 1 | 1 | 3 |
| BZX85C6V8 | 6.4 | 7.2 | 35 | 3.5 | 300 | 1 | 1 | 4 |
| BZX85C7V5 | 7.0 | 7.9 | 35 | 3 | 200 | 0.5 | 1 | 4.5 |
| BZX85C8V2 | 7.7 | 8.7 | 25 | 5 | 200 | 0.5 | 1 | 5 |
| BZX85C9V1 | 8.5 | 9.6 | 25 | 5 | 200 | 0.5 | 1 | 6.5 |
| BZX85C10 | 9.4 | 10.6 | 25 | 7 | 200 | 0.5 | 0.5 | 7 |
| BZX85C11 | 10.4 | 11.6 | 20 | 8 | 300 | 0.5 | 0.5 | 7.7 |
| BZX85C12 | 11.4 | 12.7 | 20 | 9 | 350 | 0.5 | 0.5 | 8.4 |
| BZX85C13 | 12.4 | 14.1 | 20 | 10 | 400 | 0.5 | 0.5 | 9.1 |
| BZX85C15 | 13.8 | 15.6 | 15 | 15 | 500 | 0.5 | 0.5 | 10.5 |
| BZX85C16 | 15.3 | 17.1 | 15 | 15 | 500 | 0.5 | 0.5 | 11 |
| BZX85C18 | 16.8 | 19.1 | 15 | 20 | 500 | 0.5 | 0.5 | 12.5 |
| BZX85C20 | 18.8 | 21.2 | 10 | 24 | 600 | 0.5 | 0.5 | 14 |
| BZX85C22 | 20.8 | 23.3 | 10 | 25 | 600 | 0.5 | 0.5 | 15.5 |
| BZX85C24 | 22.8 | 25.6 | 10 | 25 | 600 | 0.5 | 0.5 | 17 |
| BZX85C27 | 25.1 | 28.9 | 8 | 30 | 750 | 0.25 | 0.5 | 19 |
| BZX85C30 | 28 | 32 | 8 | 30 | 1000 | 0.25 | 0.5 | 21 |
| BZX85C33 | 31 | 35 | 8 | 35 | 1000 | 0.25 | 0.5 | 23 |
| BZX85C36 | 34 | 38 | 8 | 40 | 1000 | 0.25 | 0.5 | 25 |
| BZX85C39 | 37 | 41 | 6 | 45 | 1000 | 0.25 | 0.5 | 27 |
| BZX85C43 | 40 | 46 | 6 | 50 | 1000 | 0.25 | 0.5 | 30 |
| BZX85C47 | 44 | 50 | 4 | 90 | 1500 | 0.25 | 0.5 | 33 |
| BZX85C51 | 48 | 54 | 4 | 115 | 1500 | 0.25 | 0.5 | 36 |
| BZX85C56 | 52 | 60 | 4 | 120 | 2000 | 0.25 | 0.5 | 39 |

V_F Forward Voltage = 1.2 V Max @ $I_F = 200$ mA

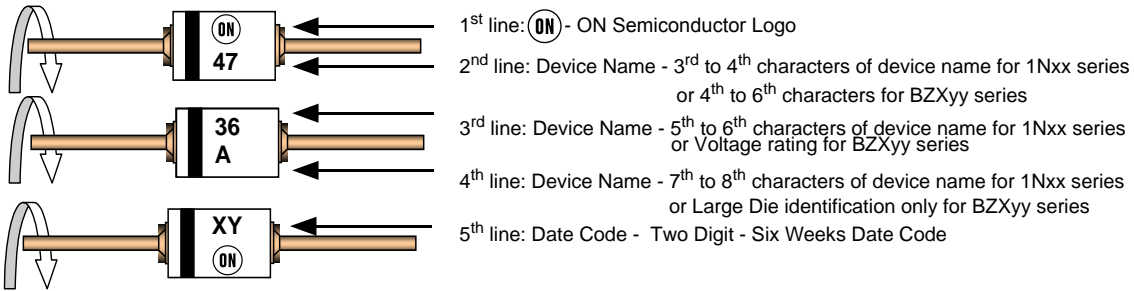
Note:

1. Zener Voltage (V_Z): The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (T_L) at $30^\circ\text{C} \pm 1^\circ\text{C}$ and 3/8" lead length.

Top Mark Information

| Device | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 |
|-----------|--------|--------|--------|--------|--------|
| BZX85C3V3 | LOGO | 85C | 3V3 | | XY |
| BZX85C3V6 | LOGO | 85C | 3V6 | | XY |
| BZX85C3V9 | LOGO | 85C | 3V9 | | XY |
| BZX85C4V3 | LOGO | 85C | 4V3 | | XY |
| BZX85C4V7 | LOGO | 85C | 4V7 | | XY |
| BZX85C5V1 | LOGO | 85C | 5V1 | | XY |
| BZX85C5V6 | LOGO | 85C | 5V6 | | XY |
| BZX85C6V2 | LOGO | 85C | 6V2 | | XY |
| BZX85C6V8 | LOGO | 85C | 6V8 | | XY |
| BZX85C7V5 | LOGO | 85C | 7V5 | | XY |
| BZX85C8V2 | LOGO | 85C | 8V2 | | XY |
| BZX85C9V1 | LOGO | 85C | 9V1 | | XY |
| BZX85C10 | LOGO | 85C | 10 | | XY |
| BZX85C11 | LOGO | 85C | 11 | | XY |
| BZX85C12 | LOGO | 85C | 12 | | XY |
| BZX85C13 | LOGO | 85C | 13 | | XY |
| BZX85C15 | LOGO | 85C | 15 | | XY |
| BZX85C16 | LOGO | 85C | 16 | | XY |
| BZX85C18 | LOGO | 85C | 18 | | XY |
| BZX85C20 | LOGO | 85C | 20 | | XY |
| BZX85C22 | LOGO | 85C | 22 | | XY |
| BZX85C24 | LOGO | 85C | 24 | | XY |
| BZX85C27 | LOGO | 85C | 27 | | XY |
| BZX85C30 | LOGO | 85C | 30 | | XY |
| BZX85C33 | LOGO | 85C | 33 | | XY |
| BZX85C36 | LOGO | 85C | 36 | | XY |
| BZX85C39 | LOGO | 85C | 39 | | XY |
| BZX85C43 | LOGO | 85C | 43 | | XY |
| BZX85C47 | LOGO | 85C | 47 | | XY |
| BZX85C51 | LOGO | 85C | 51 | | XY |
| BZX85C56 | LOGO | 85C | 56 | | XY |

Top Mark Information (Continued)



General Requirements:

1.0 Cathode Band

2.0 First Line: - ON Semiconductor Logo

3.0 Second Line: Device name - For 1Nxx series: 3rd to 4th characters of the device name.
For BZxx series: 4th to 6th characters of the device name.

4.0 Third Line: Device name - For 1Nxx series: 5th to 6th characters of the device name.
For BZXyy series: Voltage rating

5.0 Third Line: Device name - For 1Nxx series: 7th to 8th characters of the device name.
(the 8th character is the large die identification)
For BZXyy series: Large Die Identification character

6.0 Fourth Line: Date Code - Two Digit - Six Weeks Date Code
Where: X represents the last digit of the calendar year
Y represents the Six weeks numeric code

7.0 Devices shall be marked as required in the device specification (PID or OSPI Test Spec).

8.0 Maximum no. of marking lines: 5

9.0 Maximum no. of digits per line: 3

10.0 OSPI logo must be 20% taller than the alphanumeric marking and should occupy the 2 characters of the specified line.

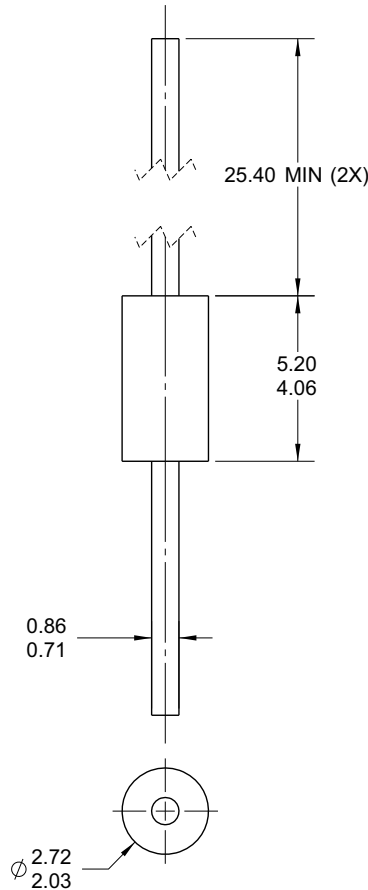
11.0 Marking Font: Arial (Except OSPI Logo)

12.0 First character of each marking line must be aligned vertically

13.0 All device markings must be based on ON Semiconductor device specification.

Physical Dimensions

DO-204AL (DO-41)



NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE: JEDEC DO-204 VARIATION AL.
- B) PACKAGE BODY CAN BE PLASTIC OR HERMETICALLY SEALED GLASS.
- D) ALL DIMENSIONS ARE IN MILLIMETERS.
- E) DRAWING FILE NAME: DO41AREV2

Figure 7. AXIAL LEADED, GLASS, JEDEC DO204, VARIATION AL

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