

July 2007

BZX79C2V4 - BZX79C56

Zener Diodes





DO-35 Glass case
COLOR BAND DENOTES CATHODE

Absolute Maximum Ratings * T_A = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------------------------|--|-------------|-------|
| P _D | Power Dissipation @ TL ≤ 75°C, Lead Length = 3/8" | 500 | mW |
| | Derate above 75°C | 4.0 | mW/°C |
| T _J , T _{STG} | Operating and Storage Temperature Range | -65 to +200 | °C |

^{*} These ratings are limiting values above which the serviceability of the diode may be impaired.

Electrical Characteristics T_A=25°C unless otherwise noted

| Device | Zener Voltage (Note 1) | | | Z _Z @ I _Z (Ω) Leakage Current | | T _C (mV / °C) | | C (pF) | |
|-----------|------------------------|------|---------------------|---|---------------------------|--------------------------|------|--------|------------------------|
| Device | Min. | Max. | I _Z (mA) | Max. | I_R (μA) | V _R (V) | Min. | Max. | $V_Z = 0$, $f = 1MHz$ |
| BZX79C2V4 | 2.2 | 2.6 | 5 | 100 | 100 | 1 | -3.5 | 0 | 255 |
| BZX79C2V7 | 2.5 | 2.9 | 5 | 100 | 75 | 1 | -3.5 | 0 | 230 |
| BZX79C3V0 | 2.8 | 3.2 | 5 | 95 | 50 | 1 | -3.5 | 0 | 215 |
| BZX79C3V3 | 3.1 | 3.5 | 5 | 95 | 25 | 1 | -3.5 | 0 | 200 |
| BZX79C3V6 | 3.4 | 3.8 | 5 | 90 | 15 | 1 | -3.5 | 0 | 185 |
| BZX79C3V9 | 3.7 | 4.1 | 5 | 90 | 10 | 1 | -3.5 | +0.3 | 175 |
| BZX79C4V3 | 4 | 4.6 | 5 | 90 | 5 | 1 | -3.5 | +1 | 160 |
| BZX79C4V7 | 4.4 | 5 | 5 | 80 | 3 | 2 | -3.5 | +0.2 | 130 |
| BZX79C5V1 | 4.8 | 5.4 | 5 | 60 | 2 | 2 | -2.7 | +1.2 | 110 |
| BZX79C5V6 | 5.2 | 6 | 5 | 40 | 1 | 2 | -2 | +2.5 | 95 |
| BZX79C6V2 | 5.8 | 6.6 | 5 | 10 | 3 | 4 | 0.4 | 3.7 | 90 |
| BZX79C6V8 | 6.4 | 7.2 | 5 | 15 | 2 | 4 | 1.2 | 4.5 | 85 |
| BZX79C7V5 | 7 | 7.9 | 5 | 15 | 1 | 5 | 2.5 | 5.3 | 80 |
| BZX79C8V2 | 7.7 | 8.7 | 5 | 15 | 0.7 | 5 | 3.2 | 6.2 | 75 |
| BZX79C9V1 | 8.5 | 9.6 | 5 | 15 | 0.5 | 6 | 3.8 | 7 | 70 |
| BZX79C10 | 9.4 | 10.6 | 5 | 20 | 0.2 | 7 | 4.5 | 8 | 70 |
| BZX79C11 | 10.4 | 11.6 | 5 | 20 | 0.1 | 8 | 5.4 | 9 | 65 |
| BZX79C12 | 11.4 | 12.7 | 5 | 25 | 0.1 | 8 | 6 | 10 | 65 |
| BZX79C13 | 12.4 | 14.1 | 5 | 30 | 0.1 | 8 | 7 | 11 | 60 |
| BZX79C15 | 13.8 | 15.6 | 5 | 30 | 0.05 | 10.5 | 9.2 | 13 | 55 |
| BZX79C16 | 15.3 | 17.1 | 5 | 40 | 0.05 | 11.2 | 10.4 | 14 | 52 |
| BZX79C18 | 16.8 | 19.1 | 5 | 45 | 0.05 | 12.6 | 12.9 | 16 | 47 |
| BZX79C20 | 18.8 | 21.2 | 5 | 55 | 0.05 | 14 | 14.4 | 18 | 36 |
| BZX79C22 | 20.8 | 23.3 | 5 | 55 | 0.05 | 15.4 | 16.4 | 20 | 34 |
| BZX79C24 | 22.8 | 25.6 | 5 | 70 | 0.05 | 16.8 | 18.4 | 22 | 33 |

| Davisa | Zener Voltage (Note 1) | | | Z _Z @ I _Z (Ω) | Leakage Current | | T _C (mV / °C) | | C (pF) |
|---|------------------------|------|---------------------|--|---------------------|--------------------|--------------------------|------|------------------------------|
| Device | Min. | Max. | I _Z (mA) | Max. | I _R (μA) | V _R (V) | Min. | Max. | V _Z = 0, f = 1MHz |
| BZX79C27 | 25.1 | 28.9 | 2 | 80 | 0.05 | 18.9 | - | 23.5 | 30 |
| BZX79C30 | 28 | 32 | 2 | 80 | 0.05 | 21 | - | 26 | 27 |
| BZX79C33 | 31 | 35 | 2 | 80 | 0.05 | 23.1 | - | 29 | 25 |
| BZX79C36 | 34 | 38 | 2 | 90 | 0.05 | 25.2 | - | 31 | 23 |
| BZX79C39 | 37 | 41 | 2 | 130 | 0.05 | 27.3 | - | 34 | 21 |
| BZX79C43 | 40 | 46 | 2 | 150 | 0.05 | 30.1 | - | 37 | 21 |
| BZX79C47 | 44 | 50 | 2 | 170 | 0.05 | 32.9 | - | 40 | 19 |
| BZX79C51 | 48 | 54 | 2 | 180 | 0.5 | 35.7 | - | 44 | 19 |
| BZX79C56 | 52 | 60 | 2 | 200 | 0.05 | 39.2 | - | 47 | 18 |
| V- Forward Voltage = 15V Max @ I- = 100mA | | | | | | | | | |

Top Mark Information

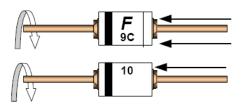
| Device | Line 1 | Line 2 | Line 3 |
|-----------|--------|--------|--------|
| BZX79C2V4 | LOGO | 9C | 2V4 |
| BZX79C2V7 | LOGO | 9C | 2V7 |
| BZX79C3V0 | LOGO | 9C | 3V0 |
| BZX79C3V3 | LOGO | 9C | 3V3 |
| BZX79C3V6 | LOGO | 9C | 3V6 |
| BZX79C3V9 | LOGO | 9C | 3V9 |
| BZX79C4V3 | LOGO | 9C | 4V3 |
| BZX79C4V7 | LOGO | 9C | 4V7 |
| BZX79C5V1 | LOGO | 9C | 5V1 |
| BZX79C5V6 | LOGO | 9C | 5V6 |
| BZX79C6V2 | LOGO | 9C | 6V2 |
| BZX79C6V8 | LOGO | 9C | 6V8 |
| BZX79C7V5 | LOGO | 9C | 7V5 |
| BZX79C8V2 | LOGO | 9C | 8V2 |
| BZX79C9V1 | LOGO | 9C | 9V1 |
| BZX79C10 | LOGO | 9C | 10 |
| BZX79C11 | LOGO | 9C | 11 |
| BZX79C12 | LOGO | 9C | 12 |
| BZX79C13 | LOGO | 9C | 13 |
| BZX79C15 | LOGO | 9C | 15 |
| BZX79C16 | LOGO | 9C | 16 |
| BZX79C18 | LOGO | 9C | 18 |
| BZX79C20 | LOGO | 9C | 20 |
| BZX79C22 | LOGO | 9C | 22 |
| BZX79C24 | LOGO | 9C | 24 |
| BZX79C27 | LOGO | 9C | 27 |
| BZX79C30 | LOGO | 9C | 30 |
| BZX79C33 | LOGO | 9C | 33 |
| BZX79C36 | LOGO | 9C | 36 |
| BZX79C39 | LOGO | 9C | 39 |
| BZX79C43 | LOGO | 9C | 43 |
| BZX79C47 | LOGO | 9C | 47 |
| BZX79C51 | LOGO | 9C | 51 |
| BZX79C56 | LOGO | 9C | 56 |

Notes:

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°C ± 1°C and 3/8" lead length.

Top Mark Information (Continued)



1st line: F - Fairchild Logo

 2^{nd} line: Device Name - 4^{th} to 5^{th} characters of the device name. or 5^{th} to 6^{th} characters for BZXyy series

3rd line: Device Name - 6th to 7th characters of the device name. or Voltage rating for BZXyy series

General Requirements:

1.0 Cathode Band

2.0 First Line: F - Fairchild Logo

3.0 Second Line: Device name - For 1Nxx series: 4th to 5th characters of the device name.

For BZxx series: 5th to 6th characters of the device name.

4.0 Third Line: Device name - For 1Nxx series: 6th to 7th characters of the device name.

For BZXyy series: Voltage rating

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

6.0 Maximum no. of marking lines: 3

7.0 Maximum no. of digits per line: 2

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

9.0 Marking Font: Arial (Except FSC Logo)

10.0 First character of each marking line must be aligned vertically.

11.0 All device markings must be based on Fairchild device specification.





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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Definition of Terms

| Datasheet Identification | Product Status | Definition |
|--------------------------|------------------------|---|
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