



ON Semiconductor®

# BZX79C2V4 - BZX79C56

## Zener Diodes

Tolerance = 5%



DO-35 Glass case

COLOR BAND DENOTES CATHODE

### Absolute Maximum Ratings \* T<sub>A</sub> = 25°C unless otherwise noted

| Symbol                            | Parameter                                                        | Value       | Units |
|-----------------------------------|------------------------------------------------------------------|-------------|-------|
| P <sub>D</sub>                    | Power Dissipation<br>@ T <sub>L</sub> ≤ 75°C, Lead Length = 3/8" | 500         | mW    |
|                                   | Derate above 75°C                                                | 4.0         | mW/°C |
| T <sub>J</sub> , T <sub>STG</sub> | 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<sub>A</sub> = 25°C unless otherwise noted

| Device    | Zener Voltage (Note 1) |      |                     | Z <sub>Z</sub> @ I <sub>Z</sub> (Ω) | Leakage Current     |                    | T <sub>C</sub> (mV / °C) |      | C (pF)                       |
|-----------|------------------------|------|---------------------|-------------------------------------|---------------------|--------------------|--------------------------|------|------------------------------|
|           | Min.                   | Max. | I <sub>Z</sub> (mA) | Max.                                | I <sub>R</sub> (μA) | V <sub>R</sub> (V) | Min.                     | Max. | V <sub>Z</sub> = 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                           |

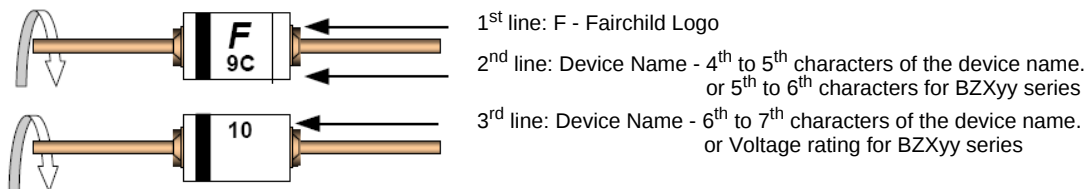
| Device   | Zener Voltage (Note 1) |      |            | $Z_Z @ I_Z (\Omega)$ | Leakage Current |           | $T_C (mV / ^\circ C)$ |      | C (pF)              |
|----------|------------------------|------|------------|----------------------|-----------------|-----------|-----------------------|------|---------------------|
|          | Min.                   | Max. | $I_Z (mA)$ | Max.                 | $I_R (\mu A)$   | $V_R (V)$ | 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                  |

**$V_F$  Forward Voltage = 1.5V Max @  $I_F = 100mA$**

**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  $30^\circ C \pm 1^\circ C$  and 3/8" lead length.**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     |

## Top Mark Information (Continued)



## General Requirements:

- 1.0 Cathode Band
- 2.0 First Line: F - Fairchild Logo
- 3.0 Second Line: Device name - For 1Nxx series: 4<sup>th</sup> to 5<sup>th</sup> characters of the device name.  
For BZxx series: 5<sup>th</sup> to 6<sup>th</sup> characters of the device name.
- 4.0 Third Line: Device name - For 1Nxx series: 6<sup>th</sup> to 7<sup>th</sup> 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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