

# 1N957B - 1N979B

## 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 | V <sub>Z</sub> (Volts) (Note 1) |      |       |                          | Z <sub>Z</sub> (Ω) (Note 2)     |                                   |      | I <sub>R</sub> @ V <sub>R</sub> |       | I <sub>ZM</sub> (mA)<br>(Note 3) |
|--------|---------------------------------|------|-------|--------------------------|---------------------------------|-----------------------------------|------|---------------------------------|-------|----------------------------------|
|        | Min.                            | Typ. | Max.  | @ I <sub>Z</sub><br>(mA) | Z <sub>Z</sub> @ I <sub>Z</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | μA                              | Volts |                                  |
|        |                                 |      |       |                          |                                 | Ω                                 | mA   |                                 |       |                                  |
| 1N957B | 6.46                            | 6.8  | 7.14  | 18.5                     | 4.5                             | 700                               | 1.0  | 150                             | 5.2   | 47                               |
| 1N958B | 7.125                           | 7.5  | 7.875 | 16.5                     | 5.5                             | 700                               | 0.5  | 75                              | 5.7   | 42                               |
| 1N959B | 7.79                            | 8.2  | 8.61  | 15                       | 6.5                             | 700                               | 0.5  | 50                              | 6.2   | 38                               |
| 1N960B | 8.645                           | 9.1  | 9.555 | 14                       | 7.5                             | 700                               | 0.5  | 25                              | 6.9   | 35                               |
| 1N961B | 9.5                             | 10   | 10.5  | 12.5                     | 8.5                             | 700                               | 0.25 | 10                              | 7.6   | 32                               |
| 1N962B | 10.45                           | 11   | 11.55 | 11.5                     | 9.5                             | 700                               | 0.25 | 5                               | 8.4   | 28                               |
| 1N963B | 11.4                            | 12   | 12.6  | 10.5                     | 11.5                            | 700                               | 0.25 | 5                               | 9.1   | 26                               |
| 1N964B | 12.35                           | 13   | 13.65 | 9.5                      | 13                              | 700                               | 0.25 | 5                               | 9.9   | 24                               |
| 1N965B | 14.25                           | 15   | 15.75 | 8.5                      | 16                              | 700                               | 0.25 | 5                               | 11.4  | 21                               |
| 1N966B | 15.2                            | 16   | 16.8  | 7.8                      | 17                              | 700                               | 0.25 | 5                               | 12.2  | 19                               |
| 1N967B | 17.1                            | 18   | 18.9  | 7.0                      | 21                              | 750                               | 0.25 | 5                               | 13.7  | 17                               |
| 1N968B | 19                              | 20   | 21    | 6.2                      | 25                              | 750                               | 0.25 | 5                               | 15.2  | 15                               |
| 1N969B | 20.9                            | 22   | 23.1  | 5.6                      | 29                              | 750                               | 0.25 | 5                               | 16.7  | 14                               |
| 1N970B | 22.8                            | 24   | 25.2  | 5.2                      | 33                              | 750                               | 0.25 | 5                               | 18.2  | 13                               |
| 1N971B | 25.652                          | 27   | 28.35 | 4.6                      | 41                              | 750                               | 0.25 | 5                               | 20.6  | 11                               |
| 1N972B | 8.5                             | 30   | 31.5  | 4.2                      | 49                              | 1000                              | 0.25 | 5                               | 22.8  | 10                               |
| 1N973B | 31.35                           | 33   | 34.65 | 3.8                      | 58                              | 1000                              | 0.25 | 5                               | 25.1  | 9.2                              |
| 1N974B | 34.2                            | 36   | 37.8  | 3.4                      | 70                              | 1000                              | 0.25 | 5                               | 27.4  | 8.5                              |
| 1N975B | 37.05                           | 39   | 40.95 | 3.2                      | 80                              | 1000                              | 0.25 | 5                               | 29.7  | 7.8                              |
| 1N976B | 40.85                           | 43   | 45.15 | 3.0                      | 93                              | 1500                              | 0.25 | 5                               | 32.7  | 7.0                              |
| 1N977B | 44.65                           | 47   | 49.35 | 2.7                      | 105                             | 1500                              | 0.25 | 5                               | 35.8  | 6.4                              |
| 1N978B | 48.45                           | 51   | 53.55 | 2.5                      | 125                             | 1500                              | 0.25 | 5                               | 38.8  | 5.9                              |
| 1N979B | 53.2                            | 56   | 58.8  | 2.2                      | 150                             | 2000                              | 0.25 | 5                               | 42.6  | 5.4                              |

**Notes:****1. Zener Voltage ( $V_Z$ ) Measurement**

Nominal 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.

**2. Zener Impedance ( $Z_Z$ ) Derivation**

$Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the ac voltage drop across the device by the ac current applied. The specified limits are for  $I_{Z(ac)} = 0.1 I_{Z(dc)}$  with the ac frequency = 60Hz.

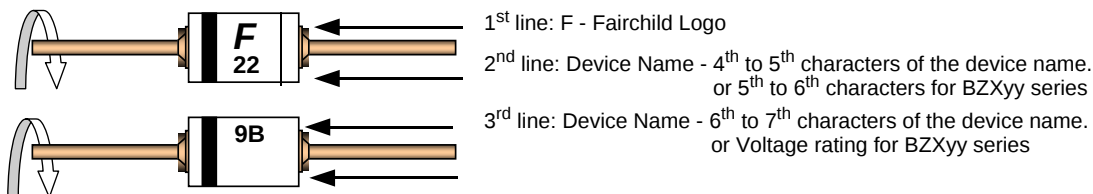
**3. Maximum Zener Current Ratings ( $I_{ZM}$ )**

The maximum current handling capability on a worst case basis is limited by the actual zener voltage at the operation point and the power derating curve.

**Top Mark Information**

| Device | Line 1 | Line 2 | Line 3 |
|--------|--------|--------|--------|
| 1N957B | LOGO   | 57     | B      |
| 1N958B | LOGO   | 58     | B      |
| 1N959B | LOGO   | 59     | B      |
| 1N960B | LOGO   | 60     | B      |
| 1N961B | LOGO   | 61     | B      |
| 1N962B | LOGO   | 62     | B      |
| 1N963B | LOGO   | 63     | B      |
| 1N964B | LOGO   | 64     | B      |
| 1N965B | LOGO   | 65     | B      |
| 1N966B | LOGO   | 66     | B      |
| 1N967B | LOGO   | 67     | B      |
| 1N968B | LOGO   | 68     | B      |
| 1N969B | LOGO   | 69     | B      |
| 1N970B | LOGO   | 70     | B      |
| 1N971B | LOGO   | 71     | B      |
| 1N972B | LOGO   | 72     | B      |
| 1N973B | LOGO   | 73     | B      |
| 1N974B | LOGO   | 74     | B      |
| 1N975B | LOGO   | 75     | B      |
| 1N976B | LOGO   | 76     | B      |
| 1N977B | LOGO   | 77     | B      |
| 1N978B | LOGO   | 78     | B      |
| 1N979B | LOGO   | 79     | B      |

## 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 BZXxx 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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Rev. I23