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# 1N5985B - 1N6025B

## Zener Diodes



### Absolute Maximum Ratings \* $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol         | Parameter   | Value       | Units                |
|----------------|---|-------------|----------------------|
| $P_D$          | Power Dissipation<br>@ $T_L \leq 75^\circ\text{C}$ , Lead Length = 3/8" | 500         | mW                   |
|                | Derate above $75^\circ\text{C}$   | 4.0         | mW/ $^\circ\text{C}$ |
| $T_J, T_{STG}$ | Operating and Storage Temperature Range                                 | -65 to +200 | $^\circ\text{C}$     |

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

### Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Device  | $V_Z$ (V) @ $I_Z$ (Note 1) |      |       | Test Current<br>$I_Z$ (mA) | Zener Impedance               |  | leakage Current |              | $I_{ZM}$ (mA)<br>(Note 2) |
|---------|----------------------------|------|-------|----------------------------|-------------------------------|--|-----------------|--------------|---------------------------|
|         | Min.                       | Typ. | Max.  |                            | $Z_Z$ @ $I_Z$<br>( $\Omega$ ) | $Z_{ZK}$ @ $I_{ZK} = 250\mu\text{A}$<br>( $\Omega$ ) | $I_R$<br>(mA)   | $V_R$<br>(V) |                           |
| 1N5985B | 2.58                       | 2.4  | 2.52  | 5                          | 100                           | 1800   | 100             | 1            | 208                       |
| 1N5986B | 2.565                      | 2.7  | 2.835 | 5                          | 100                           | 1900   | 75              | 1            | 185                       |
| 1N5987B | 2.85                       | 3    | 3.15  | 5                          | 95                            | 2000   | 50              | 1            | 167                       |
| 1N5988B | 3.135                      | 3.3  | 3.465 | 5                          | 95                            | 2200   | 25              | 1            | 152                       |
| 1N5989B | 3.42                       | 3.6  | 3.78  | 5                          | 90                            | 2300   | 15              | 1            | 139                       |
| 1N5990B | 3.705                      | 3.9  | 4.095 | 5                          | 90                            | 2400   | 10              | 1            | 128                       |
| 1N5991B | 4.085                      | 4.3  | 4.515 | 5                          | 88                            | 2500   | 5               | 1            | 116                       |
| 1N5992B | 4.465                      | 4.7  | 4.935 | 5                          | 70                            | 2200   | 3               | 1.5          | 106                       |
| 1N5993B | 4.845                      | 5.1  | 5.355 | 5                          | 50                            | 2050   | 2               | 2            | 98                        |
| 1N5994B | 5.32                       | 5.6  | 5.88  | 5                          | 25                            | 1800   | 2               | 3            | 89                        |
| 1N5995B | 5.89                       | 6.2  | 6.51  | 5                          | 10                            | 1300   | 1               | 4            | 81                        |
| 1N5996B | 6.46                       | 6.8  | 7.14  | 5                          | 8                             | 750  | 1               | 5.2          | 74                        |
| 1N5997B | 7.125                      | 7.5  | 7.875 | 5                          | 7                             | 600  | 0.5             | 6            | 67                        |
| 1N5998B | 7.79                       | 8.2  | 8.61  | 5                          | 7                             | 600  | 0.5             | 6.5          | 61                        |
| 1N5999B | 8.645                      | 9.1  | 9.555 | 5                          | 10                            | 600  | 0.1             | 7            | 55                        |

**Electrical Characteristics** (Continued)  $T_A=25^\circ\text{C}$  unless otherwise noted

| Device  | $V_Z$ (V) @ $I_Z$ (Note 1) |      |       | Test Current<br>$I_Z$ (mA) | Zener Impedance               |  | leakage Current |              | $I_{ZM}$ (mA)<br>(Note 2) |
|---------|----------------------------|------|-------|----------------------------|-------------------------------|--|-----------------|--------------|---------------------------|
|         | Min.                       | Typ. | Max.  |                            | $Z_Z$ @ $I_Z$<br>( $\Omega$ ) | $Z_{ZK}$ @ $I_{ZK} = 250\mu\text{A}$<br>( $\Omega$ ) | $I_R$<br>(mA)   | $V_R$<br>(V) |                           |
| 1N6000B | 9.5                        | 10   | 10.5  | 5                          | 15                            | 600  | 0.1             | 8            | 50                        |
| 1N6001B | 10.45                      | 11   | 11.55 | 5                          | 18                            | 600  | 0.1             | 8.4          | 45                        |
| 1N6002B | 11.4                       | 12   | 12.6  | 5                          | 22                            | 600  | 0.1             | 9.1          | 42                        |
| 1N6003B | 12.35                      | 13   | 13.65 | 5                          | 25                            | 600  | 0.1             | 9.9          | 38                        |
| 1N6004B | 14.25                      | 15   | 15.75 | 5                          | 32                            | 600  | 0.1             | 11           | 33                        |
| 1N6005B | 15.2                       | 16   | 16.8  | 5                          | 36                            | 600  | 0.1             | 12           | 31                        |
| 1N6006B | 17.1                       | 18   | 18.9  | 5                          | 42                            | 600  | 0.1             | 14           | 28                        |
| 1N6007B | 19                         | 20   | 21    | 5                          | 48                            | 600  | 0.1             | 15           | 25                        |
| 1N6008B | 20.9                       | 22   | 23.1  | 5                          | 55                            | 600  | 0.1             | 17           | 23                        |
| 1N6009B | 22.8                       | 24   | 25.2  | 5                          | 62                            | 600  | 0.1             | 18           | 21                        |
| 1N6010B | 25.65                      | 27   | 28.35 | 5                          | 70                            | 600  | 0.1             | 21           | 19                        |
| 1N6011B | 28.5                       | 30   | 31.5  | 5                          | 78                            | 600  | 0.1             | 23           | 17                        |
| 1N6012B | 31.35                      | 33   | 34.65 | 5                          | 88                            | 700  | 0.1             | 25           | 15                        |
| 1N6013B | 34.2                       | 36   | 37.8  | 5                          | 95                            | 700  | 0.1             | 27           | 14                        |
| 1N6014B | 37.05                      | 39   | 40.95 | 2                          | 130                           | 800  | 0.1             | 30           | 13                        |
| 1N6015B | 40.85                      | 43   | 45.15 | 2                          | 150                           | 900  | 0.1             | 33           | 12                        |
| 1N6016B | 44.65                      | 47   | 49.35 | 2                          | 170                           | 1000   | 0.1             | 36           | 11                        |
| 1N6017B | 48.45                      | 51   | 53.55 | 2                          | 180                           | 1300   | 0.1             | 39           | 9.8                       |
| 1N6018B | 53.2                       | 56   | 58.8  | 2                          | 200                           | 1400   | 0.1             | 43           | 8.9                       |
| 1N6019B | 58.9                       | 62   | 65.1  | 2                          | 225                           | 1400   | 0.1             | 47           | 8                         |
| 1N6020B | 64.6                       | 68   | 71.4  | 2                          | 240                           | 1600   | 0.1             | 52           | 7.4                       |
| 1N6021B | 71.25                      | 75   | 78.75 | 2                          | 265                           | 1700   | 0.1             | 56           | 6.7                       |
| 1N6022B | 77.9                       | 82   | 86.1  | 2                          | 280                           | 2000   | 0.1             | 62           | 6.1                       |
| 1N6023B | 86.45                      | 91   | 95.55 | 2                          | 300                           | 2300   | 0.1             | 69           | 5.5                       |
| 1N6024B | 95                         | 100  | 105   | 1                          | 500                           | 2600   | 0.1             | 76           | 5                         |
| 1N6025B | 104.5                      | 110  | 115.5 | 1                          | 650                           | 3000   | 0.1             | 84           | 4.5                       |

**$V_F$  Forward Voltage = 1.2V Max @  $I_F = 200\text{mA}$**

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

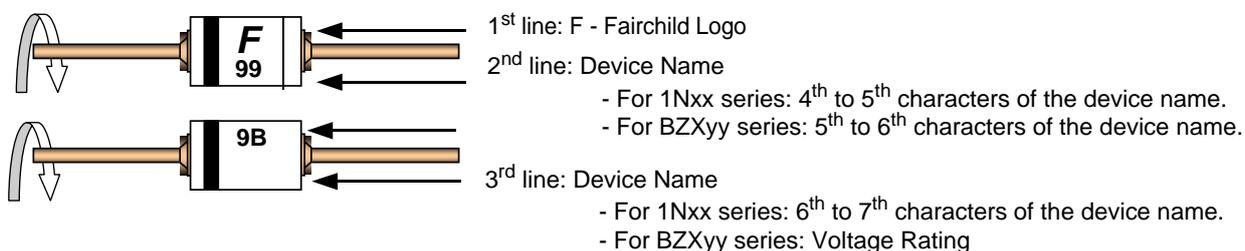
The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.

2. 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 |
|---------|--------|--------|--------|
| 1N5985B | LOGO   | 98     | 5B     |
| 1N5986B | LOGO   | 98     | 6B     |
| 1N5987B | LOGO   | 98     | 7B     |
| 1N5988B | LOGO   | 98     | 8B     |
| 1N5989B | LOGO   | 98     | 9B     |
| 1N5990B | LOGO   | 99     | 0B     |
| 1N5991B | LOGO   | 99     | 1B     |
| 1N5992B | LOGO   | 99     | 2B     |
| 1N5993B | LOGO   | 99     | 3B     |
| 1N5994B | LOGO   | 99     | 4B     |
| 1N5995B | LOGO   | 99     | 5B     |
| 1N5996B | LOGO   | 99     | 6B     |
| 1N5997B | LOGO   | 99     | 7B     |
| 1N5998B | LOGO   | 99     | 8B     |
| 1N5999B | LOGO   | 99     | 9B     |
| 1N6000B | LOGO   | 00     | 0B     |
| 1N6001B | LOGO   | 00     | 1B     |
| 1N6002B | LOGO   | 00     | 2B     |
| 1N6003B | LOGO   | 00     | 3B     |
| 1N6004B | LOGO   | 00     | 4B     |
| 1N6005B | LOGO   | 00     | 5B     |
| 1N6006B | LOGO   | 00     | 6B     |
| 1N6007B | LOGO   | 00     | 7B     |
| 1N6008B | LOGO   | 00     | 8B     |
| 1N6009B | LOGO   | 00     | 9B     |
| 1N6010B | LOGO   | 01     | 0B     |
| 1N6011B | LOGO   | 01     | 1B     |
| 1N6012B | LOGO   | 01     | 2B     |
| 1N6013B | LOGO   | 01     | 3B     |
| 1N6014B | LOGO   | 01     | 4B     |
| 1N6015B | LOGO   | 01     | 5B     |
| 1N6016B | LOGO   | 01     | 6B     |
| 1N6017B | LOGO   | 01     | 7B     |
| 1N6018B | LOGO   | 01     | 8B     |
| 1N6019B | LOGO   | 01     | 9B     |
| 1N6020B | LOGO   | 02     | 0B     |
| 1N6021B | LOGO   | 02     | 1B     |
| 1N6022B | LOGO   | 02     | 2B     |
| 1N6023B | LOGO   | 02     | 3B     |
| 1N6024B | LOGO   | 02     | 4B     |
| 1N6025B | LOGO   | 02     | 5B     |

**Top Mark Information** (Continued)**General Requirements:**

1.0 Cathod 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 BZXyy 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



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