

Zeners 1N957B - 1N991B

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.

Tolerance = 5%



Electrical Characteristics T_A = 25°C unless otherwise noted

| Device | V _Z (Volts) (Note 1) | | | Z _Z @ I _Z (mA) | Z _Z (Ω) (Note 2) | | I _R @ V _R | | I _{ZM} (mA) (Note 3) | |
|--------|---------------------------------|------|-------|---|-----------------------------------|------|---------------------------------|-----|----------------------------------|-------|
| | Min. | Typ. | Max. | | Z _{ZK} @ I _{ZK} | Ω | mA | μA | | Volts |
| | | | | | | | | | | |
| 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 |
| 1N980B | 58.9 | 62 | 65.1 | 2.0 | 185 | 2000 | 0.25 | 5 | 47.1 | 4.9 |
| 1N981B | 64.6 | 68 | 71.4 | 1.8 | 230 | 2000 | 0.25 | 5 | 51.7 | 4.5 |

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

| Device | V_Z (Volts) (Note 1) | | | | Z_Z (Ω) (Note 2) | | | I_R @ V_R | | I_{ZM} (mA) (Note 3) |
|--------|------------------------|------|-------|---------|-----------------------------|---------------------|------|---------------|-------|---------------------------|
| | Min. | Typ. | Max. | @ I_Z | Z_Z @ I_Z | Z_{ZK} @ I_{ZK} | | μA | Volts | |
| | | | | | | Ω | mA | | | |
| 1N982B | 71.25 | 75 | 78.75 | 1.7 | 270 | 2000 | 0.25 | 5 | 56.0 | 4.1 |
| 1N983B | 77.9 | 82 | 86.1 | 1.5 | 330 | 3000 | 0.25 | 5 | 62.2 | 3.7 |
| 1N984B | 86.45 | 91 | 95.55 | 1.4 | 400 | 3000 | 0.25 | 5 | 69.2 | 3.3 |
| 1N985B | 95 | 100 | 105 | 1.3 | 500 | 3000 | 0.25 | 5 | 76.0 | 3.0 |
| 1N986B | 104.5 | 110 | 115.5 | 1.1 | 750 | 4000 | 0.25 | 5 | 83.6 | 2.7 |
| 1N987B | 114 | 120 | 126 | 1.0 | 900 | 4500 | 0.25 | 5 | 91.2 | 2.5 |
| 1N988B | 123.5 | 130 | 136.5 | 0.95 | 1100 | 5000 | 0.25 | 5 | 98.8 | 2.3 |
| 1N989B | 142.5 | 150 | 157.5 | 0.85 | 1500 | 6000 | 0.25 | 5 | 114 | 2.0 |
| 1N990B | 152 | 160 | 168 | 0.80 | 1700 | 6500 | 0.25 | 5 | 121.6 | 1.9 |
| 1N991B | 171 | 180 | 189 | 0.68 | 2200 | 7100 | 0.25 | 5 | 136.8 | 1.7 |

Notes:

- 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.
- 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.
- 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.

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Top Mark Information

| Device | Line 1 | Line 2 | Line 3 | Line 4 |
|--------|--------|--------|--------|--------|
| 1N957B | LOGO | 957 | B | XY |
| 1N958B | LOGO | 958 | B | XY |
| 1N959B | LOGO | 959 | B | XY |
| 1N960B | LOGO | 960 | B | XY |
| 1N961B | LOGO | 961 | B | XY |
| 1N962B | LOGO | 962 | B | XY |
| 1N963B | LOGO | 963 | B | XY |
| 1N964B | LOGO | 964 | B | XY |
| 1N965B | LOGO | 965 | B | XY |
| 1N966B | LOGO | 966 | B | XY |
| 1N967B | LOGO | 967 | B | XY |
| 1N968B | LOGO | 968 | B | XY |
| 1N969B | LOGO | 969 | B | XY |
| 1N970B | LOGO | 970 | B | XY |
| 1N971B | LOGO | 971 | B | XY |
| 1N972B | LOGO | 972 | B | XY |
| 1N973B | LOGO | 973 | B | XY |
| 1N974B | LOGO | 974 | B | XY |
| 1N975B | LOGO | 975 | B | XY |
| 1N976B | LOGO | 976 | B | XY |
| 1N977B | LOGO | 977 | B | XY |
| 1N978B | LOGO | 978 | B | XY |
| 1N979B | LOGO | 979 | B | XY |
| 1N980B | LOGO | 980 | B | XY |
| 1N981B | LOGO | 981 | B | XY |
| 1N982B | LOGO | 982 | B | XY |
| 1N983B | LOGO | 983 | B | XY |
| 1N984B | LOGO | 984 | B | XY |
| 1N985B | LOGO | 985 | B | XY |
| 1N986B | LOGO | 986 | B | XY |
| 1N987B | LOGO | 987 | B | XY |
| 1N988B | LOGO | 988 | B | XY |
| 1N989B | LOGO | 989 | B | XY |
| 1N990B | LOGO | 990 | B | XY |
| 1N991B | LOGO | 991 | B | XY |

Top Mark Information (Continued)

1st line: F - Fairchild Logo

2nd line: Device Name - 3rd to 5th characters of the device name.
or 4th to 6th characters for BZXyy series

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

4th line: Device Code or - Two Digit - Six Weeks Date Code.
Date code plus or Two Digit - Six Weeks Date Code
Large die identification plus Large die identification, "L"

General Requirements:

1.0 Cathod Band

2.0 First Line: F - Fairchild Logo

3.0 Second Line: Device name - For 1Nxx series: 3rd to 5th 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: 6th to 7th characters of the device name.
For BZXyy series: Voltage rating

5.0 Fourth Line: XY or XYL - Two Digit - Six Weeks Date Code

Where: X represents the last digit of the calendar year

Y represents the Six weeks numeric code

L represents the Large die identification

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

7.0 Maximum no. of marking lines: 4

8.0 Maximum no. of digits per line: 3

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

10.0 Marking Font: Arial (Except FSC Logo)

11.0 First character of each marking line must be aligned vertically

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| CoolFET™ | FPS™ | MICROCOUPLER™ | PowerSaver™ | SuperSOT™-3 |
| CROSSVOLT™ | FRFET™ | MicroFET™ | PowerTrench® | SuperSOT™-6 |
| DOME™ | GlobalOptoisolator™ | MicroPak™ | QFET® | SuperSOT™-8 |
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| E ² CMOST™ | HiSeC™ | MSX™ | QT Optoelectronics™ | TinyLogic® |
| EnSigna™ | I ² C™ | MSXPro™ | Quiet Series™ | TINYOPTO™ |
| FACT™ | i-Lo™ | OCX™ | RapidConfigure™ | TruTranslation™ |
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| Programmable Active Droop™ | OPTOPLANAR™ | | | |

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Definition of Terms

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|--------------------------|------------------------|---|
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