

1N5221B - 1N5263B

Zener Diodes

Tolerance = 5%



DO-35 Glass case
COLOR BAND DENOTES CATHODE

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

| Symbol | Parameter | Value | Units |
|-----------|---|-------------|----------------------|
| P_D | Power Dissipation | 500 | mW |
| | Derate above 50°C | 4.0 | mW/ $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -65 to +200 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature Range | -65 to +200 | $^\circ\text{C}$ |
| | Lead Temperature (1/16" from case for 10 seconds) | +230 | $^\circ\text{C}$ |

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

** Non-recurrent square wave $PW = 8.3\text{ms}$, $T_A = 50$ degrees C.

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

| Device | V_Z (V) @ I_Z (Note 1) | | | Z_Z (Ω) @ I_Z (mA) | | Z_{ZK} (Ω) @ I_{ZK} (mA) | | I_R (μA) @ V_R (V) | | T_C (%/ $^\circ\text{C}$) |
|---------|----------------------------|------|-------|---------------------------------|----|---------------------------------------|------|-------------------------------------|-----|------------------------------|
| | Min. | Typ. | Max. | | | | | | | |
| 1N5221B | 2.28 | 2.4 | 2.52 | 30 | 20 | 1,200 | 0.25 | 100 | 1.0 | -0.085 |
| 1N5222B | 2.375 | 2.5 | 2.625 | 30 | 20 | 1,250 | 0.25 | 100 | 1.0 | -0.085 |
| 1N5223B | 2.565 | 2.7 | 2.835 | 30 | 20 | 1,300 | 0.25 | 75 | 1.0 | -0.080 |
| 1N5224B | 2.66 | 2.8 | 2.94 | 30 | 20 | 1,400 | 0.25 | 75 | 1.0 | -0.080 |
| 1N5225B | 2.85 | 3 | 3.15 | 29 | 20 | 1,600 | 0.25 | 50 | 1.0 | -0.075 |
| 1N5226B | 3.135 | 3.3 | 3.465 | 28 | 20 | 1,600 | 0.25 | 25 | 1.0 | -0.07 |
| 1N5227B | 3.42 | 3.6 | 3.78 | 24 | 20 | 1,700 | 0.25 | 15 | 1.0 | -0.065 |
| 1N5228B | 3.705 | 3.9 | 4.095 | 23 | 20 | 1,900 | 0.25 | 10 | 1.0 | -0.06 |
| 1N5229B | 4.085 | 4.3 | 4.515 | 22 | 20 | 2,000 | 0.25 | 5.0 | 1.0 | +/-0.055 |
| 1N5230B | 4.465 | 4.7 | 4.935 | 19 | 20 | 1,900 | 0.25 | 2.0 | 1.0 | +/-0.03 |
| 1N5231B | 4.845 | 5.1 | 5.355 | 17 | 20 | 1,600 | 0.25 | 5.0 | 2.0 | +/-0.03 |
| 1N5232B | 5.32 | 5.6 | 5.88 | 11 | 20 | 1,600 | 0.25 | 5.0 | 3.0 | 0.038 |
| 1N5233B | 5.7 | 6 | 6.3 | 7.0 | 20 | 1,600 | 0.25 | 5.0 | 3.5 | 0.038 |
| 1N5234B | 5.89 | 6.2 | 6.51 | 7.0 | 20 | 1,000 | 0.25 | 5.0 | 4.0 | 0.045 |
| 1N5235B | 6.46 | 6.8 | 7.14 | 5.0 | 20 | 750 | 0.25 | 3.0 | 5.0 | 0.05 |
| 1N5236B | 7.125 | 7.5 | 7.875 | 6.0 | 20 | 500 | 0.25 | 3.0 | 6.0 | 0.058 |
| 1N5237B | 7.79 | 8.2 | 8.61 | 8.0 | 20 | 500 | 0.25 | 3.0 | 6.5 | 0.062 |
| 1N5238B | 8.265 | 8.7 | 9.135 | 8.0 | 20 | 600 | 0.25 | 3.0 | 6.5 | 0.065 |
| 1N5239B | 8.645 | 9.1 | 9.555 | 10 | 20 | 600 | 0.25 | 3.0 | 7.0 | 0.068 |
| 1N5240B | 9.5 | 10 | 10.5 | 17 | 20 | 600 | 0.25 | 3.0 | 8.0 | 0.075 |

| Device | V _Z (V) @ I _Z (Note 1) | | | Z _Z (Ω) @ I _Z (mA) | | Z _{ZK} (Ω) @ I _{ZK} (mA) | | I _R (μA) @ V _R (V) | | T _C (%/°C) |
|---------|--|------|-------|--|-----|--|------|--|-----|-----------------------|
| | Min. | Typ. | Max. | | | | | | | |
| 1N5241B | 10.45 | 11 | 11.55 | 22 | 20 | 600 | 0.25 | 2.0 | 8.4 | 0.076 |
| 1N5242B | 11.4 | 12 | 12.6 | 30 | 20 | 600 | 0.25 | 1.0 | 9.1 | 0.077 |
| 1N5243B | 12.35 | 13 | 13.65 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 | 0.079 |
| 1N5244B | 13.3 | 14 | 14.7 | 15 | 9.0 | 600 | 0.25 | 0.1 | 10 | 0.080 |
| 1N5245B | 14.25 | 15 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11 | 0.082 |
| 1N5246B | 15.2 | 16 | 16.8 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 | 0.083 |
| 1N5247B | 16.15 | 17 | 17.85 | 19 | 7.4 | 600 | 0.25 | 0.1 | 13 | 0.084 |
| 1N5248B | 17.1 | 18 | 18.9 | 21 | 7.0 | 600 | 0.25 | 0.1 | 14 | 0.085 |
| 1N5247B | 18.05 | 19 | 19.95 | 23 | 6.6 | 600 | 0.25 | 0.1 | 14 | 0.085 |
| 1N5250B | 19 | 20 | 21 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 | 0.086 |
| 1N5251B | 20.9 | 22 | 23.1 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 | 0.087 |
| 1N5252B | 22.8 | 24 | 25.2 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 | 0.088 |
| 1N5253B | 23.75 | 25 | 26.25 | 35 | 5.0 | 600 | 0.25 | 0.1 | 19 | 0.088 |
| 1N5254B | 25.65 | 27 | 28.35 | 41 | 4.6 | 600 | 0.25 | 0.1 | 21 | 0.089 |
| 1N5255B | 26.6 | 28 | 29.4 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21 | 0.090 |
| 1N5256B | 28.5 | 30 | 31.5 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 | 0.09 |
| 1N5257B | 31.35 | 33 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25 | 0.092 |
| 1N5258B | 34.2 | 36 | 37.8 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27 | 0.093 |
| 1N5259B | 37.05 | 39 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30 | 0.094 |
| 1N5260B | 40.85 | 43 | 45.15 | 93 | 3.0 | 900 | 0.25 | 0.1 | 33 | 0.095 |
| 1N5261B | 44.65 | 47 | 49.35 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36 | 0.095 |
| 1N5262B | 48.45 | 51 | 53.55 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39 | 0.096 |
| 1N5263B | 53.2 | 56 | 58.8 | 150 | 2.2 | 1300 | 0.25 | 0.1 | 43 | 0.096 |

V_F Forward Voltage = 1.2V Max. @ I_F = 200mA

Notes:

1. Zener Voltage (V_Z)

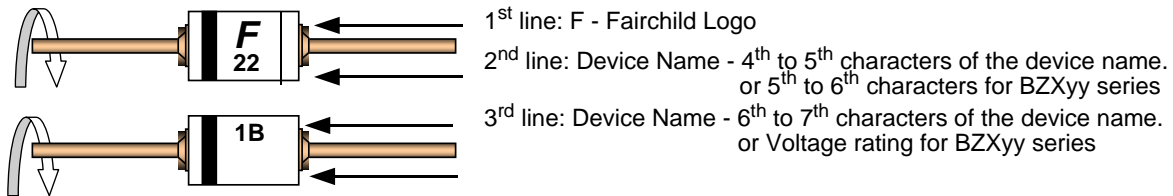
The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (T_L) at 30°C ± 1°C and 3/8" lead length

Top Mark Information

| Device | Line 1 | Line 2 | Line 3 |
|---------|--------|--------|--------|
| 1N5221B | LOGO | 22 | 1B |
| 1N5222B | LOGO | 22 | 2B |
| 1N5223B | LOGO | 22 | 3B |
| 1N5224B | LOGO | 22 | 4B |
| 1N5225B | LOGO | 22 | 5B |
| 1N5226B | LOGO | 22 | 6B |
| 1N5227B | LOGO | 22 | 7B |
| 1N5228B | LOGO | 22 | 8B |
| 1N5229B | LOGO | 22 | 9B |
| 1N5230B | LOGO | 23 | 0B |
| 1N5231B | LOGO | 23 | 1B |
| 1N5232B | LOGO | 23 | 2B |
| 1N5233B | LOGO | 23 | 3B |
| 1N5234B | LOGO | 23 | 4B |
| 1N5235B | LOGO | 23 | 5B |
| 1N5236B | LOGO | 23 | 6B |
| 1N5237B | LOGO | 23 | 7B |
| 1N5238B | LOGO | 23 | 8B |
| 1N5239B | LOGO | 23 | 9B |
| 1N5240B | LOGO | 24 | 0B |

| Device | Line 1 | Line 2 | Line 3 |
|---------|--------|--------|--------|
| 1N5241B | LOGO | 24 | 1B |
| 1N5242B | LOGO | 24 | 2B |
| 1N5243B | LOGO | 24 | 3B |
| 1N5244B | LOGO | 24 | 4B |
| 1N5245B | LOGO | 24 | 5B |
| 1N5246B | LOGO | 24 | 6B |
| 1N5247B | LOGO | 24 | 7B |
| 1N5248B | LOGO | 24 | 8B |
| 1N5247B | LOGO | 24 | 9B |
| 1N5250B | LOGO | 25 | 0B |
| 1N5251B | LOGO | 25 | 1B |
| 1N5252B | LOGO | 25 | 2B |
| 1N5253B | LOGO | 25 | 3B |
| 1N5254B | LOGO | 25 | 4B |
| 1N5255B | LOGO | 25 | 5B |
| 1N5256B | LOGO | 25 | 6B |
| 1N5257B | LOGO | 25 | 7B |
| 1N5258B | LOGO | 25 | 8B |
| 1N5259B | LOGO | 25 | 9B |
| 1N5260B | LOGO | 26 | 0B |
| 1N5261B | LOGO | 26 | 1B |
| 1N5262B | LOGO | 26 | 2B |
| 1N5263B | LOGO | 26 | 3B |

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: 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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