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January 2016

# 1N5221B - 1N5263B
# Zener Diodes

**Tolerance = 5%**

**DO-35 Glass case**
COLOR BAND DENOTES CATHODE

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A$ = 25°C unless otherwise noted.

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

**Note:**

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
   Non-recurrent square wave Pulse Width = 8.3 ms, $T_A$ = 50°C

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## Electrical Characteristics

Values are at $T_A$ = 25°C unless otherwise noted .

| Device | $V_Z$ (V) @ $I_Z$ (2) | | | $Z_Z$ (Ω) @ $I_Z$ (mA) | | $Z_{ZK}$ (Ω) @ $I_{ZK}$(mA) | | $I_R$ (μA) @ $V_R$ (V) | | $T_C$ (%/°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 | 5.0 | 2.0 | +/-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 |
| 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 |
| 1N5249B | 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** | | | | | | | | | | |

**Note:**

2. 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.

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## 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 |
| 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 |
| 1N5249B | 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 |

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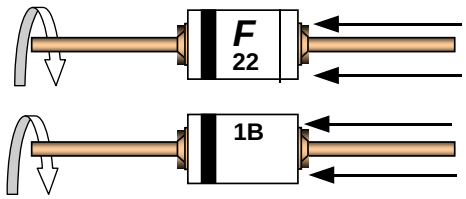
## Top Mark Information (Continued)




1st line: F - Fairchild Logo

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

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

**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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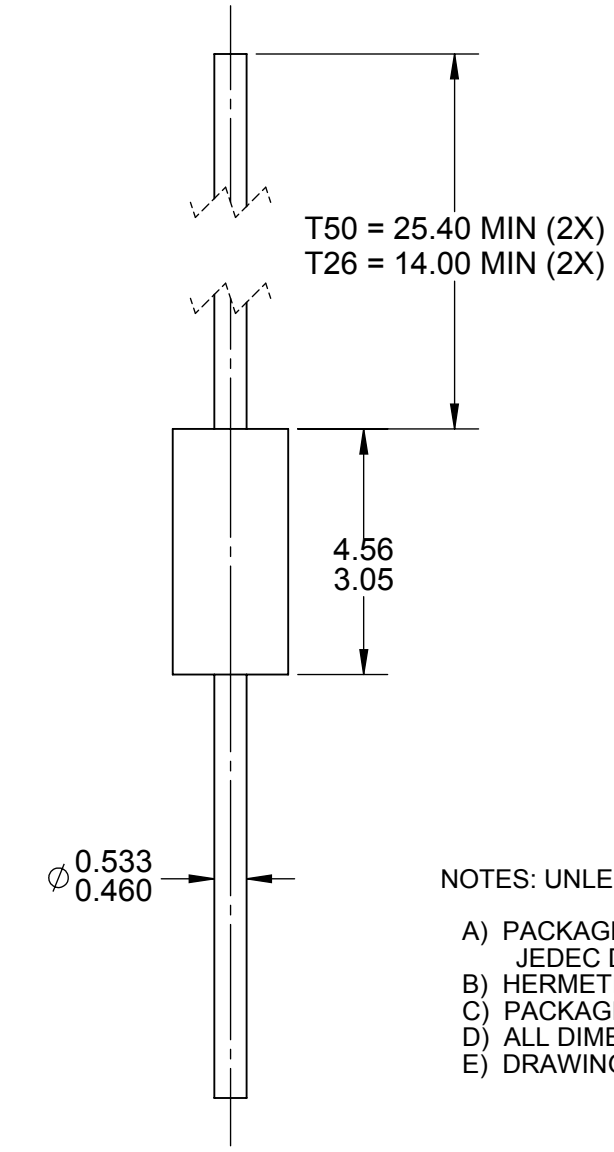


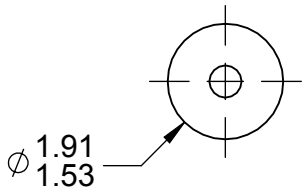


NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE:
JEDEC DO-204, VARIATION AH.
B) HERMETICALLY SEALED GLASS PACKAGE.
C) PACKAGE WEIGHT IS 0.137 GRAM.
D) ALL DIMENSIONS ARE IN MILLIMETERS.
E) DRAWING FILE NAME: DO35AREV03

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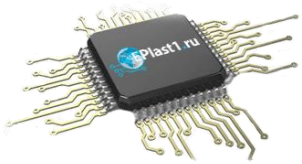
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

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