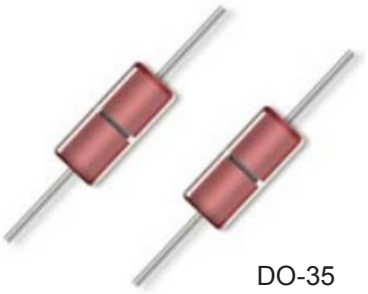
# 1N5518B-1 thru 1N5546B-1

## Low Noise Zener Diode Series

**Rev. V2**

### Features

- 1N5518 - 1N5546 Available in JAN, JANTX and JANTXV PER MIL-PRF-19500/437
- Low Reverse Leakage Characteristics
- Low Noise Characteristics
- Double Plug Construction
- Metallurgically Bonded
- Also available in DO-213 MELF style package.



DO-35

### Electrical Specifications: $T_A$ = +25°C (unless otherwise specified)

| JEDEC TYPE Number (Note1) | Normal Zener Voltage VZ @ IZT | Zener Test Current IZT | Maximum Zener Impedance B-C-D Suffix ZZT @ IZT | Maximum Reverse Leakage Current | | | B-C-D Suffix Maximum DC Zener Current IZM | B-C-D Suffix Maximum Noise Density @ IZ=250 mA ND | Regulation Factor ΔVZ (Note 2) | Low VZ Current IZL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | IR | VR = Volts | | | | | |
| | Volts | mA | Ohms | m Adc | NON & A- Suffix | B-C-D-Suffix | mAdc | mV / √Hz | Volts | mAdc |
| 1N5518B-1 | 3.3 | 20 | 26 | 5.0 | 0.90 | 1.0 | 115 | 0.5 | 0.90 | 2.0 |
| 1N5519B-1 | 3.6 | 20 | 24 | 3.0 | 0.90 | 1.0 | 105 | 0.5 | 0.90 | 2.0 |
| 1N5520B-1 | 3.9 | 20 | 22 | 1.0 | 0.90 | 1.0 | 98 | 0.5 | 0.85 | 2.0 |
| 1N5521B-1 | 4.3 | 20 | 18 | 3.0 | 1.0 | 1.5 | 88 | 0.5 | 0.75 | 2.0 |
| 1N5522B-1 | 4.7 | 10 | 22 | 2.0 | 1.5 | 2.0 | 81 | 0.5 | 0.60 | 1.0 |
| 1N5523B-1 | 5.1 | 5.0 | 26 | 2.0 | 2.0 | 2.5 | 75 | 0.5 | 0.65 | 0.25 |
| 1N5524B-1 | 5.6 | 3.0 | 30 | 2.0 | 3.0 | 3.5 | 68 | 1.0 | 0.30 | 0.25 |
| 1N5525B-1 | 6.2 | 1.0 | 30 | 1.0 | 4.5 | 5.0 | 61 | 1.0 | 0.20 | 0.01 |
| 1N5526B-1 | 6.8 | 1.0 | 30 | 1.0 | 5.5 | 6.2 | 56 | 1.0 | 0.10 | 0.01 |
| 1N5527B-1 | 7.5 | 1.0 | 35 | 0.5 | 6.0 | 6.8 | 51 | 2.0 | 0.05 | 0.01 |
| 1N5528B-1 | 8.2 | 1.0 | 40 | 0.5 | 6.5 | 7.5 | 46 | 4.0 | 0.05 | 0.01 |
| 1N5529B-1 | 9.1 | 1.0 | 45 | 0.1 | 7.0 | 8.2 | 42 | 4.0 | 0.05 | 0.01 |
| 1N5530B-1 | 10.0 | 1.0 | 60 | 0.05 | 8.0 | 9.1 | 38 | 4.0 | 0.10 | 0.01 |
| 1N5531B-1 | 11.0 | 1.0 | 80 | 0.05 | 9.0 | 9.9 | 35 | 5.0 | 0.20 | 0.01 |
| 1N5532B-1 | 12.0 | 1.0 | 90 | 0.05 | 9.5 | 0.8 | 32 | 10 | 0.20 | 0.01 |
| 1N5533B-1 | 13.0 | 1.0 | 90 | 0.01 | 10.5 | 11.7 | 29 | 15 | 0.20 | 0.01 |
| 1N5534B-1 | 14.0 | 1.0 | 100 | 0.01 | 11.5 | 12.6 | 27 | 20 | 0.20 | 0.01 |
| 1N5535B-1 | 15.0 | 1.0 | 100 | 0.01 | 12.5 | 13.5 | 25 | 20 | 0.20 | 0.01 |

*(Continued next page)*

## Electrical Specifications: $T_A$ = +25°C (unless otherwise specified)

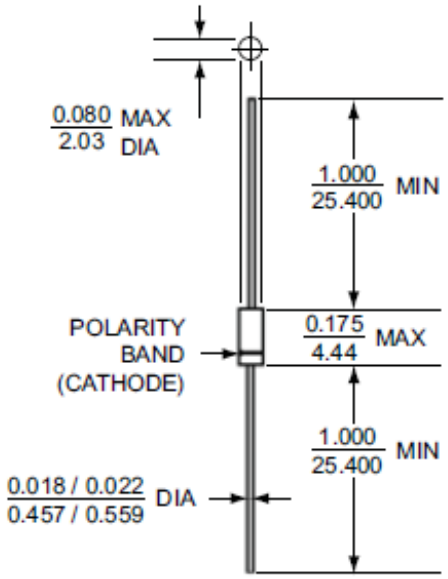
| JEDEC TYPE Number (Note1) | Normal Zener Voltage VZ @ IZT | Zener Test Current IZT | Maximum Zener Impedance B-C-D Suffix ZZT @ IZT | Maximum Reverse Leakage Current | | | B-C-D Suffix Maximum DC Zener Current IZM | B-C-D Suffix Maximum Noise Density @ IZ=250 mA ND | Regulation Factor ΔVZ (Note 2) | Low VZ Current IZL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | IR | VR = Volts | | | | | |
| | Volts | mA | Ohms | m Adc | NON & A- Suffix | B-C-D-Suffix | mAdc | mV / √Hz | Volts | mAdc |
| 1N5536B-1 | 16.0 | 1.0 | 100 | 0.01 | 13.0 | 14.4 | 24 | 20 | 0.20 | 0.01 |
| 1N5537B-1 | 17.0 | 1.0 | 100 | 0.01 | 14.0 | 15.3 | 22 | 20 | 0.20 | 0.01 |
| 1N5538B-1 | 18.0 | 1.0 | 100 | 0.01 | 15.0 | 16.2 | 21 | 20 | 0.20 | 0.01 |
| 1N5539B-1 | 19.0 | 1.0 | 100 | 0.01 | 16.0 | 17.1 | 20 | 20 | 0.20 | 0.01 |
| 1N5540B-1 | 20.0 | 1.0 | 100 | 0.01 | 17.0 | 18.0 | 19 | 20 | 0.20 | 0.01 |
| 1N5541B-1 | 22.0 | 1.0 | 100 | 0.01 | 18.0 | 19.8 | 17 | 20 | 0.25 | 0.01 |
| 1N5542B-1 | 24.0 | 1.0 | 100 | 0.01 | 20.0 | 21.6 | 16 | 20 | 0.30 | 0.01 |
| 1N5543B-1 | 25.0 | 1.0 | 100 | 0.01 | 21.0 | 22.4 | 15 | 20 | 0.35 | 0.01 |
| 1N5544B-1 | 28.0 | 1.0 | 100 | 0.01 | 23.0 | 25.2 | 14 | 20 | 0.40 | 0.01 |
| 1N5545B-1 | 30.0 | 1.0 | 100 | 0.01 | 24.0 | 27.0 | 13 | 20 | 0.45 | 0.01 |
| 1N5546B-1 | 33.0 | 1.0 | 100 | 0.01 | 28.0 | 29.7 | 12 | 20 | 0.50 | 0.01 |

1. No Suffix type numbers are +20% with guaranteed limits for only $V_Z$, $I_R$, and $V_F$. Units with “A” suffix are +10% with guaranteed limits for $V_Z$, $I_R$, and $V_F$. Units with guaranteed limits for all six parameters are indicated by a “B” suffix for +5.0% units, “C” suffix for +2.0% and “D” suffix for +1.0%.
2. Delta $V_Z$ is the maximum difference between $V_Z$ @ $I_{ZT}$ and $V_Z$ @ $I_{ZL}$ measured with the device junction in thermal equilibrium.

## Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|---|
| Steady State Power Dissipation | 500 mW @ +50°C |
| Forward Voltage | 1.1 V @ 200 mA |
| DC Power Derating | 4 mW / °C above +50°C |
| Operating & Storage Temperature | -65°C to +175°C |

## Outline Drawing




All dimensions in INCH / mm

**DESIGN DATA**

**CASE:** Hermetically sealed glass case. DO – 35 outline.

**LEAD MATERIAL:** Copper clad steel.

**LEAD FINISH:** Tin / Lead

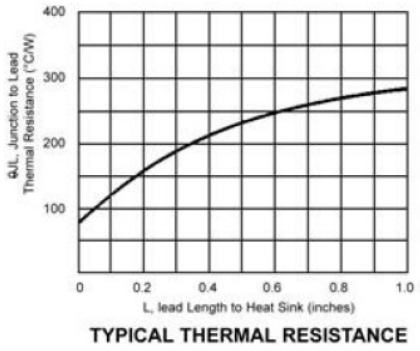
**THERMAL RESISTANCE:** ($R_{\Theta JEC}$): 250 °C/W maximum at L = .375 inch

**THERMAL IMPEDANCE:** ($Z_{\Theta JX}$): 35 °C/W maximum

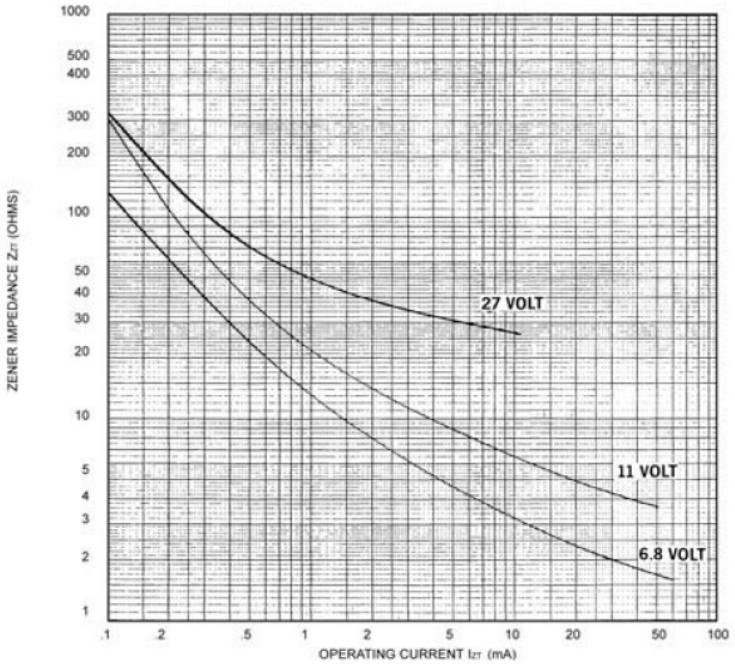
**POLARITY:** Diode to be operated with the banded (cathode) end positive.

**MOUNTING POSITION:** ANY.

## Graphs




TYPICAL THERMAL RESISTANCE




ZENER IMPEDANCE VS. OPERATING CURRENT