

# 500mw Epitaxial Zener Diode

## 1N5221B thru 1N5267B

Nominal Zener Voltage: 2.4 to 75V

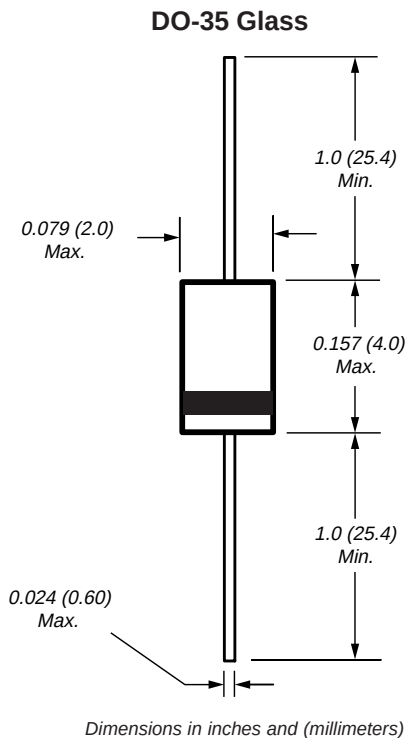
Power Dissipation: 0.5W

### Features

- 500mW Power Dissipation
- 2.4V - 75V Nominal Zener Voltage
- Low Noise
- Surface Mount Equivalents Available
- Hermetic Package
- VZ - Tolerance 5%

### Mechanical Data

- Case: DO-35, Glass
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Approx. Weight: 0.13 grams



### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                       | Symbol          | Value       | Unit               |
|------------------------------------------------------|-----------------|-------------|--------------------|
| Power Dissipation (Note 1)                           | $P_d$           | 500         | mW                 |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 300         | $^\circ\text{C/W}$ |
| Forward Voltage @ $I_F = 200\text{mA}$               | $V_F$           | 1.1         | V                  |
| Operating and Storage Temperature Range              | $T_j, T_{STG}$  | -65 to +200 | $^\circ\text{C}$   |

Notes: 1. Valid provided that leads are kept at  $T_L \leq 75^\circ\text{C}$  with lead length = 9.5mm (3/8") from case; derate above  $75^\circ\text{C}$ .

# 500mw Epitaxial Zener Diode

**Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

| Type<br>Number | Zener Voltage Range<br>(Note 2)  |         |         | Test<br>Current | Maximum Zener<br>Impedance |                                   | Maximum Reverse<br>Current                    |                | Maximum<br>Temperature<br>Coefficient<br>@ I <sub>ZT</sub> |
|----------------|----------------------------------|---------|---------|-----------------|----------------------------|-----------------------------------|-----------------------------------------------|----------------|------------------------------------------------------------|
|                | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         |                 | I <sub>ZT</sub>            | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> =<br>0.25mA | I <sub>R</sub> |                                                            |
|                | Nom (V)                          | Min (V) | Max (V) | mA              | Ω                          | Ω                                 | μA                                            | V              | %/°C                                                       |
| 1N5221B        | 2.4                              | 2.28    | 2.52    | 20              | 30                         | 1200                              | 100                                           | 1.0            | -0.085                                                     |
| 1N5222B        | 2.5                              | 2.38    | 2.63    | 20              | 30                         | 1250                              | 100                                           | 1.0            | -0.085                                                     |
| 1N5223B        | 2.7                              | 2.57    | 2.84    | 20              | 30                         | 1300                              | 75                                            | 1.0            | -0.080                                                     |
| 1N5224B        | 2.8                              | 2.66    | 2.94    | 20              | 30                         | 1400                              | 75                                            | 1.0            | -0.080                                                     |
| 1N5225B        | 3.0                              | 2.85    | 3.15    | 20              | 29                         | 1600                              | 50                                            | 1.0            | -0.075                                                     |
| 1N5226B        | 3.3                              | 3.14    | 3.47    | 20              | 28                         | 1600                              | 25                                            | 1.0            | -0.070                                                     |
| 1N5227B        | 3.6                              | 3.42    | 3.78    | 20              | 24                         | 1700                              | 15                                            | 1.0            | -0.065                                                     |
| 1N5228B        | 3.9                              | 3.71    | 4.10    | 20              | 23                         | 1900                              | 10                                            | 1.0            | -0.060                                                     |
| 1N5229B        | 4.3                              | 4.09    | 4.52    | 20              | 22                         | 2000                              | 5.0                                           | 1.0            | +0.055                                                     |
| 1N5230B        | 4.7                              | 4.47    | 4.94    | 20              | 19                         | 1900                              | 5.0                                           | 2.0            | +0.030                                                     |
| 1N5231B        | 5.1                              | 4.85    | 5.36    | 20              | 17                         | 1600                              | 5.0                                           | 2.0            | +0.030                                                     |
| 1N5232B        | 5.6                              | 5.32    | 5.88    | 20              | 11                         | 1600                              | 5.0                                           | 3.0            | +0.038                                                     |
| 1N5233B        | 6.0                              | 5.70    | 6.30    | 20              | 7.0                        | 1600                              | 5.0                                           | 3.5            | +0.038                                                     |
| 1N5234B        | 6.2                              | 5.89    | 6.51    | 20              | 7.0                        | 1000                              | 5.0                                           | 4.0            | +0.045                                                     |
| 1N5235B        | 6.8                              | 6.46    | 7.14    | 20              | 5.0                        | 750                               | 3.0                                           | 5.0            | +0.050                                                     |
| 1N5236B        | 7.5                              | 7.13    | 7.88    | 20              | 6.0                        | 500                               | 3.0                                           | 6.0            | +0.058                                                     |
| 1N5237B        | 8.2                              | 7.79    | 8.61    | 20              | 8.0                        | 500                               | 3.0                                           | 6.5            | +0.062                                                     |
| 1N5238B        | 8.7                              | 8.27    | 9.14    | 20              | 8.0                        | 600                               | 3.0                                           | 6.5            | +0.065                                                     |
| 1N5239B        | 9.1                              | 8.65    | 9.56    | 20              | 10                         | 600                               | 3.0                                           | 7.0            | +0.068                                                     |
| 1N5240B        | 10                               | 9.50    | 10.50   | 20              | 17                         | 600                               | 3.0                                           | 8.0            | +0.075                                                     |
| 1N5241B        | 11                               | 10.45   | 11.55   | 20              | 22                         | 600                               | 2.0                                           | 8.4            | +0.076                                                     |
| 1N5242B        | 12                               | 11.40   | 12.60   | 20              | 30                         | 600                               | 1.0                                           | 9.1            | +0.077                                                     |
| 1N5243B        | 13                               | 12.35   | 13.65   | 9.5             | 13                         | 600                               | 0.5                                           | 9.9            | +0.079                                                     |
| 1N5244B        | 14                               | 13.30   | 14.70   | 9.0             | 15                         | 600                               | 0.1                                           | 10             | +0.082                                                     |
| 1N5245B        | 15                               | 14.25   | 15.75   | 8.5             | 16                         | 600                               | 0.1                                           | 11             | +0.082                                                     |
| 1N5246B        | 16                               | 15.20   | 16.80   | 7.8             | 17                         | 600                               | 0.1                                           | 12             | +0.083                                                     |
| 1N5247B        | 17                               | 16.15   | 17.85   | 7.4             | 19                         | 600                               | 0.1                                           | 13             | +0.084                                                     |
| 1N5248B        | 18                               | 17.10   | 18.90   | 7.0             | 21                         | 600                               | 0.1                                           | 14             | +0.085                                                     |
| 1N5249B        | 19                               | 18.05   | 19.95   | 6.6             | 23                         | 600                               | 0.1                                           | 14             | +0.086                                                     |
| 1N5250B        | 20                               | 19.00   | 21.00   | 6.2             | 25                         | 600                               | 0.1                                           | 15             | +0.086                                                     |
| 1N5251B        | 22                               | 20.90   | 23.10   | 5.6             | 29                         | 600                               | 0.1                                           | 17             | +0.087                                                     |
| 1N5252B        | 24                               | 22.80   | 25.20   | 5.2             | 33                         | 600                               | 0.1                                           | 18             | +0.087                                                     |
| 1N5253B        | 25                               | 23.75   | 26.25   | 5.0             | 35                         | 600                               | 0.1                                           | 19             | +0.089                                                     |
| 1N5254B        | 27                               | 25.65   | 28.35   | 4.6             | 41                         | 600                               | 0.1                                           | 21             | +0.090                                                     |
| 1N5255B        | 28                               | 26.60   | 29.40   | 4.5             | 44                         | 600                               | 0.1                                           | 21             | +0.091                                                     |
| 1N5256B        | 30                               | 28.50   | 31.50   | 4.2             | 49                         | 600                               | 0.1                                           | 23             | +0.091                                                     |
| 1N5257B        | 33                               | 31.35   | 34.65   | 3.8             | 58                         | 700                               | 0.1                                           | 25             | +0.092                                                     |
| 1N5258B        | 36                               | 34.20   | 37.80   | 3.4             | 70                         | 700                               | 0.1                                           | 27             | +0.093                                                     |
| 1N5259B        | 39                               | 37.05   | 40.95   | 3.2             | 80                         | 800                               | 0.1                                           | 30             | +0.094                                                     |
| 1N5260B        | 43                               | 40.85   | 45.15   | 3.0             | 93                         | 900                               | 0.1                                           | 33             | +0.095                                                     |
| 1N5261B        | 47                               | 44.65   | 49.35   | 2.7             | 105                        | 1000                              | 0.1                                           | 36             | +0.095                                                     |
| 1N5262B        | 51                               | 48.45   | 53.55   | 2.5             | 125                        | 1100                              | 0.1                                           | 39             | +0.096                                                     |
| 1N5263B        | 56                               | 53.20   | 58.80   | 2.2             | 150                        | 1300                              | 0.1                                           | 43             | +0.096                                                     |
| 1N5264B        | 60                               | 57.00   | 63.00   | 2.1             | 170                        | 1400                              | 0.1                                           | 46             | +0.097                                                     |
| 1N5265B        | 62                               | 58.90   | 65.10   | 2.0             | 185                        | 1400                              | 0.1                                           | 47             | +0.097                                                     |
| 1N5266B        | 68                               | 64.60   | 71.40   | 1.8             | 230                        | 1600                              | 0.1                                           | 52             | +0.097                                                     |
| 1N5267B        | 75                               | 71.25   | 78.75   | 1.7             | 270                        | 1700                              | 0.1                                           | 56             | +0.098                                                     |

Notes: 2. Based on dc measurement at thermal equilibrium; lead length = 9.5mm (3/8"); thermal resistance of heat sink = 30°C/W.