

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

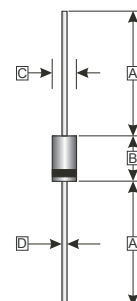
## FEATURES

- Zener voltage range = 2.4V to 200V
- ESD rating of class 3 (>6 KV) per human body model
- Double slug type construction
- Metallurgical bonded construction
- Solder hot dip tin (Sn) lead finish

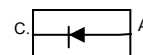
## PACKAGING INFORMATION

- Case: DO-35
- Case Material: Double slug type, hermetically sealed glass
- Finish: All external surfaces are corrosion resistant and leads are readily solderable
- Polarity: Cathode indicated by polarity band
- Mounting: Any

DO-35



| REF. | Millimeter |      |
|------|------------|------|
|      | Min.       | Max. |
| A    | 25.0       | 26.0 |
| B    | -          | 4.50 |
| C    | -          | 2.00 |
| D    | 0.46       | 0.56 |



## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise specified)<sup>1</sup>

| Parameter                                                              | Symbol                            | Value   | Unit  |
|------------------------------------------------------------------------|-----------------------------------|---------|-------|
| Maximum Steady State Power Dissipation @ TL ≤ 75°C, Lead Length = 3/8" | P <sub>D</sub>                    | 500     | mW    |
| Maximum Steady State Power Dissipation, Derate above 75°C              | P <sub>D</sub>                    | 4.0     | mW/°C |
| Operating and Storage Temperature Range                                | T <sub>J</sub> , T <sub>STG</sub> | -65~200 | °C    |

Note:

1. Some part number series have lower JEDEC registered ratings.

## ELECTRICAL RATINGS (T<sub>A</sub> = 25°C unless otherwise specified)

| Type Number <sup>1</sup> | Zener Voltage Range <sup>2</sup> |        |        |                  | Zener Impedance <sup>3</sup>                 |                                 | Leakage Current <sup>1</sup> |      | θ <sub>vz</sub> <sup>4</sup> |
|--------------------------|----------------------------------|--------|--------|------------------|----------------------------------------------|---------------------------------|------------------------------|------|------------------------------|
|                          | V <sub>Z</sub>                   |        |        | @I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub><br>=0.25mA | I <sub>R</sub> @ V <sub>R</sub> |                              |      |                              |
|                          | Min(V)                           | Nom(V) | Max(V) | mA               | Ω                                            | μA                              | V                            | %/°C |                              |
| 1N5221B                  | 2.28                             | 2.4    | 2.52   | 20               | 30                                           | 1200                            | 100                          | 1    | -0.085                       |
| 1N5222B                  | 2.375                            | 2.5    | 2.625  | 20               | 30                                           | 1250                            | 100                          | 1    | -0.085                       |
| 1N5223B                  | 2.565                            | 2.7    | 2.835  | 20               | 30                                           | 1300                            | 75                           | 1    | -0.080                       |
| 1N5224B                  | 2.66                             | 2.8    | 2.94   | 20               | 30                                           | 1400                            | 75                           | 1    | -0.080                       |
| 1N5225B                  | 2.85                             | 3.0    | 3.15   | 20               | 29                                           | 1600                            | 50                           | 1    | -0.075                       |
| 1N5226B                  | 3.135                            | 3.3    | 3.465  | 20               | 28                                           | 1600                            | 25                           | 1    | -0.070                       |
| 1N5227B                  | 3.420                            | 3.6    | 3.780  | 20               | 24                                           | 1700                            | 15                           | 1    | -0.065                       |
| 1N5228B                  | 3.705                            | 3.9    | 4.095  | 20               | 23                                           | 1900                            | 10                           | 1    | -0.060                       |
| 1N5229B                  | 4.085                            | 4.3    | 4.515  | 20               | 22                                           | 2000                            | 5                            | 1    | ±0.055                       |
| 1N5230B                  | 4.465                            | 4.7    | 4.935  | 20               | 19                                           | 1900                            | 5                            | 2    | ±0.030                       |
| 1N5231B                  | 4.845                            | 5.1    | 5.355  | 20               | 17                                           | 1600                            | 5                            | 2    | ±0.030                       |
| 1N5232B                  | 5.32                             | 5.6    | 5.88   | 20               | 11                                           | 1600                            | 5                            | 3    | +0.038                       |
| 1N5233B                  | 5.7                              | 6.0    | 6.3    | 20               | 7                                            | 1600                            | 5                            | 3.5  | +0.038                       |
| 1N5234B                  | 5.89                             | 6.2    | 6.51   | 20               | 7                                            | 1000                            | 5                            | 4    | +0.045                       |
| 1N5235B                  | 6.46                             | 6.8    | 7.14   | 20               | 5                                            | 750                             | 3                            | 5    | +0.050                       |
| 1N5236B                  | 7.125                            | 7.5    | 7.875  | 20               | 6                                            | 500                             | 3                            | 6    | +0.058                       |
| 1N5237B                  | 7.79                             | 8.2    | 8.61   | 20               | 8                                            | 500                             | 3                            | 6.5  | +0.062                       |
| 1N5238B                  | 8.265                            | 8.7    | 9.135  | 20               | 8                                            | 600                             | 3                            | 6.5  | +0.065                       |
| 1N5239B                  | 8.645                            | 9.1    | 9.555  | 20               | 10                                           | 600                             | 3                            | 7    | +0.068                       |
| 1N5240B                  | 9.5                              | 10     | 10.5   | 20               | 17                                           | 600                             | 3                            | 8    | +0.075                       |
| 1N5241B                  | 10.45                            | 11     | 11.55  | 20               | 22                                           | 600                             | 2                            | 8.4  | +0.076                       |
| 1N5242B                  | 11.4                             | 12     | 12.6   | 20               | 30                                           | 600                             | 1                            | 9.1  | +0.077                       |
| 1N5243B                  | 12.35                            | 13     | 13.65  | 9.5              | 13                                           | 600                             | 0.5                          | 9.9  | +0.079                       |

**ELECTRICAL RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

| Type Number <sup>1</sup>                                                                                                                   | Zener Voltage Range <sup>2</sup> |        |        |                 | Zener Impedance <sup>3</sup>      |                                              | Leakage Current <sup>1</sup>    |      | $\theta_{vz}$ <sup>4</sup> |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------|--------|-----------------|-----------------------------------|----------------------------------------------|---------------------------------|------|----------------------------|
|                                                                                                                                            | V <sub>Z</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> @ V <sub>R</sub> |      |                            |
|                                                                                                                                            | Min(V)                           | Nom(V) | Max(V) | mA              | $\Omega$                          | $\mu$ A                                      | V                               | %/°C |                            |
| 1N5244B                                                                                                                                    | 13.3                             | 14     | 14.7   | 9               | 15                                | 600                                          | 0.1                             | 10   | +0.082                     |
| 1N5245B                                                                                                                                    | 14.25                            | 15     | 15.75  | 8.5             | 16                                | 600                                          | 0.1                             | 11   | +0.082                     |
| 1N5246B                                                                                                                                    | 15.2                             | 16     | 16.8   | 7.8             | 17                                | 600                                          | 0.1                             | 12   | +0.083                     |
| 1N5247B                                                                                                                                    | 16.15                            | 17     | 17.85  | 7.4             | 19                                | 600                                          | 0.1                             | 13   | +0.084                     |
| 1N5248B                                                                                                                                    | 17.1                             | 18     | 18.9   | 7               | 21                                | 600                                          | 0.1                             | 14   | +0.085                     |
| 1N5249B                                                                                                                                    | 18.05                            | 19     | 19.95  | 6.6             | 23                                | 600                                          | 0.1                             | 14   | +0.086                     |
| 1N5250B                                                                                                                                    | 19                               | 20     | 21     | 6.2             | 25                                | 600                                          | 0.1                             | 15   | +0.086                     |
| 1N5251B                                                                                                                                    | 20.9                             | 22     | 23.1   | 5.6             | 29                                | 600                                          | 0.1                             | 17   | +0.087                     |
| 1N5252B                                                                                                                                    | 22.8                             | 24     | 25.2   | 5.2             | 33                                | 600                                          | 0.1                             | 18   | +0.088                     |
| 1N5253B                                                                                                                                    | 23.75                            | 25     | 26.25  | 5               | 35                                | 600                                          | 0.1                             | 19   | +0.089                     |
| 1N5254B                                                                                                                                    | 25.65                            | 27     | 28.35  | 4.6             | 41                                | 600                                          | 0.1                             | 21   | +0.090                     |
| 1N5255B                                                                                                                                    | 26.6                             | 28     | 29.4   | 4.5             | 44                                | 600                                          | 0.1                             | 21   | +0.091                     |
| 1N5256B                                                                                                                                    | 28.5                             | 30     | 31.5   | 4.2             | 49                                | 600                                          | 0.1                             | 23   | +0.091                     |
| 1N5257B                                                                                                                                    | 31.35                            | 33     | 34.65  | 3.8             | 58                                | 700                                          | 0.1                             | 25   | +0.092                     |
| 1N5258B                                                                                                                                    | 34.2                             | 36     | 37.8   | 3.4             | 70                                | 700                                          | 0.1                             | 27   | +0.093                     |
| 1N5259B                                                                                                                                    | 37.05                            | 39     | 40.95  | 3.2             | 80                                | 800                                          | 0.1                             | 30   | +0.094                     |
| 1N5260B                                                                                                                                    | 40.85                            | 43     | 45.15  | 3               | 93                                | 800                                          | 0.1                             | 33   | +0.095                     |
| 1N5261B                                                                                                                                    | 44.65                            | 47     | 49.35  | 2.7             | 105                               | 1000                                         | 0.1                             | 36   | +0.095                     |
| 1N5262B                                                                                                                                    | 48.45                            | 51     | 53.55  | 2.5             | 125                               | 1100                                         | 0.1                             | 39   | +0.096                     |
| 1N5263B                                                                                                                                    | 53.2                             | 56     | 58.8   | 2.2             | 150                               | 1300                                         | 0.1                             | 43   | +0.096                     |
| V <sub>F</sub> =1.1V Max @ I <sub>F</sub> =200mA for 60V below types, V <sub>F</sub> =1.4V Max @ I <sub>F</sub> =200mA for 60V above types |                                  |        |        |                 |                                   |                                              |                                 |      |                            |

Notes:

- TOLERANCE AND TYPE NUMBER DESIGNATION ( $V_Z$ )**  
The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
- ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**  
The zener voltage ( $V_Z$ ) is tested under pulse condition. The measured  $V_Z$  is guaranteed to be within specification with device junction in thermal equilibrium.
- ZENER IMPEDANCE ( $V_Z$ ) 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 AC frequency = 60Hz.
- TEMPERATURE COEFFICIENT( $\theta_{vz}$ )**  
Test conditions for temperature coefficient are as follows:  
A.  $I_{ZT} = 7.5\text{mA}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5221B through 1N5242B)  
B.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5243B through 1N5281B)  
Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.