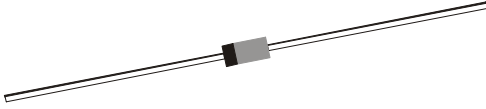


## SILICON PLANAR ZENER DIODES

1N5223B to 1N5279B  
2.7V to 180V



DO- 35  
Glass Axial Package

### FEATURES

The zeners with glass passivated junction in the hermetically sealed glass package with double studs, provides excellent stability, reliability and better power dissipation.

### ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION                       | SYMBOL    | VALUE        | UNIT  |
|-----------------------------------|-----------|--------------|-------|
| DC Power Dissipation              | $P_D$     | 500          | mW    |
| Power Derating above 75°C         |           | 4.0          | mW/°C |
| Operating and Storage Temperature | $T_{stg}$ | - 65 to +200 | °C    |

### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless specified otherwise)

Forward Voltage at  $I_F=200\text{mA}$   $V_F < 1.1\text{V}$

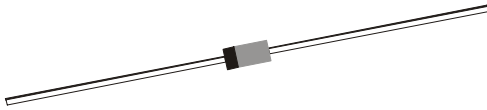
No Suffix  $\pm 20\%$  tolerance, Suffix 'A'  $\pm 10\%$  tolerance, and Suffix 'B'  $\pm 5\%$  tolerance

| Device<br>(Note 1) | Nominal<br>Voltage<br>$V_Z$ at $I_{ZT}$<br><br>V | Test<br>Current<br>$I_{ZT}$<br><br>mA | Max Zener<br>Impedance<br>A & B Suffix only<br>(Note 2) |  | Max Reverse Leakage Current<br><br>$I_R$ at $V_R$ |     | Max Zener<br>Voltage<br>Temp. Coeff.<br>$\alpha V_Z$ (Note 3)<br><br>(A&B Suffix only)<br>$a V_Z$ (% /°C) |
|--------------------|--|---------------------------------------|---|--|---|-----|---|
|                    |  |                                       | $Z_{ZT}$ at<br>$I_{ZT}$<br>W                            | $Z_{ZK}$ at<br>$I_{ZK}=0.25\text{mA}$<br>W | mA  | V   |   |
| 1N5223B            | 2.7  | 20                                    | 30  | 1300                                       | 75  | 1.0 | -0.080  |
| 1N5224B            | 2.8  | 20                                    | 30  | 1400                                       | 75  | 1.0 | -0.080  |
| 1N5225B            | 3.0  | 20                                    | 29  | 1600                                       | 50  | 1.0 | -0.075  |
| 1N5226B            | 3.3  | 20                                    | 28  | 1600                                       | 25  | 1.0 | -0.070  |
| 1N5227B            | 3.6  | 20                                    | 24  | 1700                                       | 15  | 1.0 | -0.065  |
| 1N5228B            | 3.9  | 20                                    | 23  | 1900                                       | 10  | 1.0 | -0.060  |
| 1N5229B            | 4.3  | 20                                    | 22  | 2000                                       | 5.0   | 1.0 | +/-0.055  |
| 1N5230B            | 4.7  | 20                                    | 19  | 1900                                       | 5.0   | 2.0 | +/-0.030  |
| 1N5231B            | 5.1  | 20                                    | 17  | 1600                                       | 5.0   | 2.0 | +/-0.030  |
| 1N5232B            | 5.6  | 20                                    | 11  | 1600                                       | 5.0   | 3.0 | 0.038   |
| 1N5233B            | 6.0  | 20                                    | 7   | 1600                                       | 5.0   | 3.5 | 0.038   |
| 1N5234B            | 6.2  | 20                                    | 7   | 1000                                       | 5.0   | 4.0 | 0.045   |
| 1N5235B            | 6.8  | 20                                    | 5   | 750  | 3.0   | 5.0 | 0.050   |
| 1N5236B            | 7.5  | 20                                    | 6   | 500  | 3.0   | 6.0 | 0.058   |
| 1N5237B            | 8.2  | 20                                    | 8   | 500  | 3.0   | 6.5 | 0.062   |
| 1N5238B            | 8.7  | 20                                    | 8   | 600  | 3.0   | 6.5 | 0.065   |
| 1N5239B            | 9.1  | 20                                    | 10  | 600  | 3.0   | 7.0 | 0.068   |
| 1N5240B            | 10   | 20                                    | 17  | 600  | 3.0   | 8.0 | 0.075   |
| 1N5241B            | 11   | 20                                    | 22  | 600  | 2.0   | 8.4 | 0.076   |
| 1N5242B            | 12   | 20                                    | 30  | 600  | 1.0   | 9.1 | 0.077   |

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# SILICON PLANAR ZENER DIODES

1N5223B to 1N5279B  
2.7V to 180V



DO- 35  
Glass Axial Package

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

Forward Voltage at I<sub>F</sub>=200mA V<sub>F</sub> <1.1 V

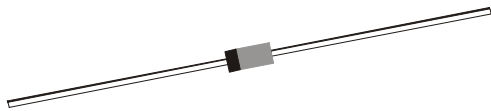
No Suffix ±20% tolerance, Suffix 'A' ±10% tolerance, and Suffix 'B' ±5% tolerance

| Device<br>(Note 1) | Nominal<br>Voltage<br>V <sub>Z</sub> at I <sub>ZT</sub><br><br>V | Test<br>Current<br>I <sub>ZT</sub><br><br>mA | Max Zener<br>Impedance<br>A & B Suffix only<br>(Note 2)<br>Z <sub>ZT</sub> at I <sub>ZT</sub> Z <sub>ZK</sub> at I <sub>ZK</sub> =0.25mA |      | Max Reverse Leakage Current<br><br>I <sub>R</sub> at V <sub>R</sub> |     | Max Zener<br>Voltage<br>Temp. Coeff.<br>qV <sub>Z</sub> (Note 3)<br><br>(A&B Suffix only)<br>a V <sub>Z</sub> (% /°C) |
|--------------------|--|--|--|------|---|-----|---|
|                    |  |  | W  | W    | mA  | V   |   |
| 1N5243B            | 13   | 9.5  | 13   | 600  | 0.5   | 9.9 | 0.079   |
| 1N5244B            | 14   | 9.0  | 15   | 600  | 0.1   | 10  | 0.082   |
| 1N5245B            | 15   | 8.5  | 16   | 600  | 0.1   | 11  | 0.082   |
| 1N5246B            | 16   | 7.8  | 17   | 600  | 0.1   | 12  | 0.083   |
| 1N5247B            | 17   | 7.4  | 19   | 600  | 0.1   | 13  | 0.084   |
| 1N5248B            | 18   | 7.0  | 21   | 600  | 0.1   | 14  | 0.085   |
| 1N5249B            | 19   | 6.6  | 23   | 600  | 0.1   | 14  | 0.086   |
| 1N5250B            | 20   | 6.2  | 25   | 600  | 0.1   | 15  | 0.086   |
| 1N5251B            | 22   | 5.6  | 29   | 600  | 0.1   | 17  | 0.087   |
| 1N5252B            | 24   | 5.2  | 33   | 600  | 0.1   | 18  | 0.088   |
| 1N5253B            | 25   | 5.0  | 35   | 600  | 0.1   | 19  | 0.089   |
| 1N5254B            | 27   | 4.6  | 41   | 600  | 0.1   | 21  | 0.090   |
| 1N5255B            | 28   | 4.5  | 44   | 600  | 0.1   | 21  | 0.091   |
| 1N5256B            | 30   | 4.2  | 49   | 600  | 0.1   | 23  | 0.091   |
| 1N5257B            | 33   | 3.8  | 58   | 700  | 0.1   | 25  | 0.092   |
| 1N5258B            | 36   | 3.4  | 70   | 700  | 0.1   | 27  | 0.093   |
| 1N5259B            | 39   | 3.2  | 80   | 800  | 0.1   | 30  | 0.094   |
| 1N5260B            | 43   | 3.0  | 93   | 900  | 0.1   | 33  | 0.095   |
| 1N5261B            | 47   | 2.7  | 105  | 1000 | 0.1   | 36  | 0.095   |
| 1N5262B            | 51   | 2.5  | 125  | 1100 | 0.1   | 39  | 0.096   |
| 1N5263B            | 56   | 2.2  | 150  | 1300 | 0.1   | 43  | 0.096   |
| 1N5264B            | 60   | 2.1  | 170  | 1400 | 0.1   | 46  | 0.097   |
| 1N5265B            | 62   | 2.0  | 185  | 1400 | 0.1   | 47  | 0.097   |
| 1N5266B            | 68   | 1.8  | 230  | 1600 | 0.1   | 52  | 0.097   |
| 1N5267B            | 75   | 1.7  | 270  | 1700 | 0.1   | 56  | 0.098   |
| 1N5268B            | 82   | 1.5  | 330  | 2000 | 0.1   | 62  | 0.098   |
| 1N5269B            | 87   | 1.4  | 370  | 2200 | 0.1   | 68  | 0.099   |

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# SILICON PLANAR ZENER DIODES

1N5223B to 1N5279B  
2.7V to 180V



DO- 35  
Glass Axial Package

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

Forward Voltage at I<sub>F</sub>=200mA V<sub>F</sub> <1.1 V

No Suffix ±20% tolerance, Suffix 'A' ±10% tolerance, and Suffix 'B' ±5% tolerance

| Device<br>(Note 1) | Nominal<br>Voltage<br>V <sub>Z</sub> @ I <sub>ZT</sub><br><br>V | Test<br>Current<br>I <sub>ZT</sub><br><br>mA | Max Zener<br>Impedance<br>A & B Suffix only<br>(Note 2)<br>Z <sub>ZT</sub> @ I <sub>ZT</sub> Z <sub>ZK</sub> @ I <sub>ZK</sub> =0.25mA<br>W                      W |      | Max Reverse Leakage Current<br><br>I <sub>R</sub> at V <sub>R</sub><br><br>mA                      V |     | Max Zener<br>Voltage<br>Temp. Coeff.<br>qV <sub>Z</sub> (Note 3)<br><br>(A&B Suffix only)<br>a V <sub>Z</sub> (% /°C) |
|--------------------|---|--|--|------|--|-----|---|
|                    |   |  |  |      |  |     |   |
| 1N5270B            | 91  | 1.4  | 400  | 2300 | 0.1  | 69  | 0.099   |
| 1N5271B            | 100   | 1.3  | 500  | 2600 | 0.1  | 76  | 0.099   |
| 1N5272B            | 110   | 1.1  | 750  | 3000 | 0.1  | 84  | 0.11  |
| 1N5273B            | 120   | 1.0  | 900  | 4000 | 0.1  | 91  | 0.11  |
| 1N5274B            | 130   | 0.95   | 1100   | 4500 | 0.1  | 99  | 0.11  |
| 1N5275B            | 140   | 0.90   | 1300   | 4500 | 0.1  | 106 | 0.11  |
| 1N5276B            | 150   | 0.85   | 1500   | 5000 | 0.1  | 114 | 0.11  |
| 1N5277B            | 160   | 0.80   | 1700   | 5500 | 0.1  | 122 | 0.11  |
| 1N5278B            | 170   | 0.74   | 1900   | 5500 | 0.1  | 129 | 0.11  |
| 1N5279B            | 180   | 0.68   | 2200   | 6000 | 0.1  | 137 | 0.11  |

**NOTE 1:** The electrical characteristics are measured after allowing the device to stabilize for 20 seconds when mounted with a 9.525 mm (3/8") minimum lead length from the case.

**NOTE 2:** The zener impedance is derived from the 50 Hz AC voltage, which results when AC current having an RMS value equal to 10% of the DC zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. Zener impedance is measured at two points to insure a sharp knee on the breakdown curve, thereby, eliminating unstable units.

**NOTE 3:** Temperature coefficient (qV<sub>Z</sub>).

Test conditions for temperature coefficient are as follows.

a. I<sub>ZT</sub>=7.5mA, T<sub>J</sub>=25°C

T<sub>2</sub>=125°C(1N5223A, B thru 1N5242A, B )

b. I<sub>ZT</sub>=Rated I<sub>ZT</sub>, T<sub>J</sub>=25°C

T<sub>2</sub>=125°C(1N5243A, B thru 1N5279A, B )

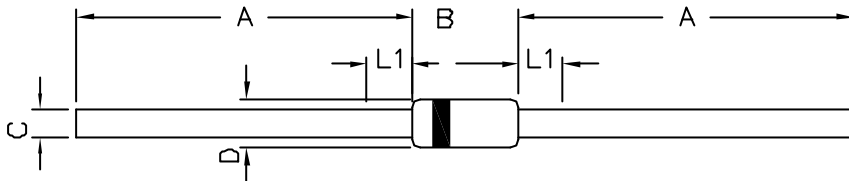
Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature

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**1N5223B to 1N5279B  
2.7V to 180V**

**DO-35  
Glass Axial Package**

**DO-35 Glass Axial Package**

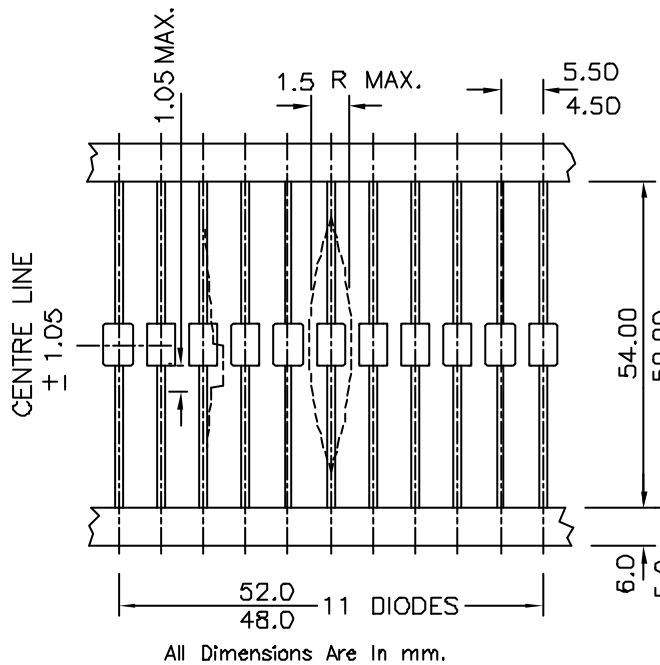


| DIM | MIN   | MAX   |
|-----|-------|-------|
| A   | 25.40 | 38.10 |
| B   | 3.05  | 5.08  |
| C   | 0.46  | 0.55  |
| D   | 1.53  | 2.28  |
| L1  | -     | 1.27  |

**NOTES:-**

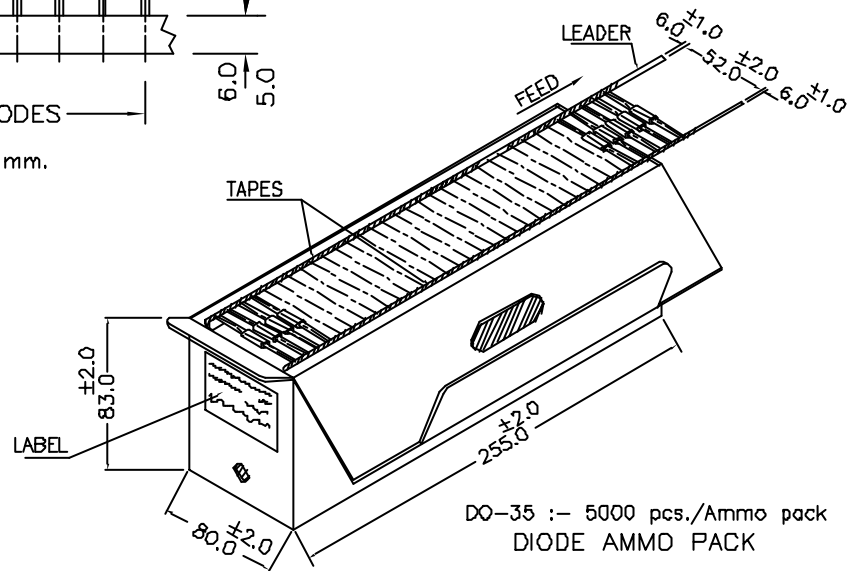
Cathode is marked by Band.  
All Dimensions Are In mm.

**DO-35, 52mm Taping Specification**



**52mm Taping Specification**

1. T & A Indicates Axial Tape & Ammo packing (52 mm Tape Specing)
2. 300 mm (min) leader tape on every spool.
3. No. of empty places allowed 0.25% without consecutive empty places.
4. Ends of leads shall preferably not protrude beyond the tapes.
5. Components shall be held sufficiently in the tape or tapes so that they can not come free in normal handling.



on request also available in 26 mm Tape and Ammo Pack

**Packing Detail**

| PACKAGE   | STANDARD PACK |                | INNER CARTON BOX |      | OUTER CARTON BOX |        |       |
|-----------|---------------|----------------|------------------|------|------------------|--------|-------|
|           | Details       | Net Weight/Qty | Size             | Qty  | Size             | Qty    | Qty   |
| DO-35 T&A | 5K/ammo box   | 0.88kg/5K pcs  | 10"X3.5"X3.5"    | 5.0K | 12.7"X12.7"X20"  | 125.0K | 25Kgs |

### **Disclaimer**

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