



# DATA SHEET

SEMICONDUCTOR

1N5221B~1N5281B

## 500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



### Maximum Ratings (Note 1)

| Rating   | Symbol         | Value       | Unit                 |
|--|----------------|-------------|----------------------|
| Maximum Steady State Power Dissipation<br>@ $T_L \leq 75^\circ\text{C}$ , Lead Length = 3/8" | $P_D$          | 500         | mW                   |
| Derate Above $75^\circ\text{C}$  |                | 4.0         | mW/ $^\circ\text{C}$ |
| Operating and Storage Temperature Range  | $T_J, T_{stg}$ | -65 to +200 | $^\circ\text{C}$     |

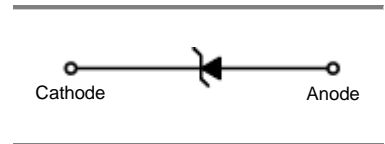
1. Some part number series have lower JEDEC registered ratings.



AXIAL LEAD  
DO35

### Specification Features

- Zener Voltage Range = 2.4 V to 200 V
- ESD Rating of Class 3 (>16 KV) per Human Body Model
- DO-35 Package (DO-204AH)
- Double Slug Type Construction
- Metallurgical Bonding

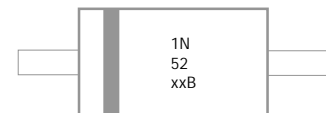


### Mechanical Characteristics

- Case** : 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

**Maximum Lead Temperature for Soldering Purposes**  
230 $^\circ\text{C}$ , 1/16" from the case for 10 seconds

### MARKING DIAGRAM

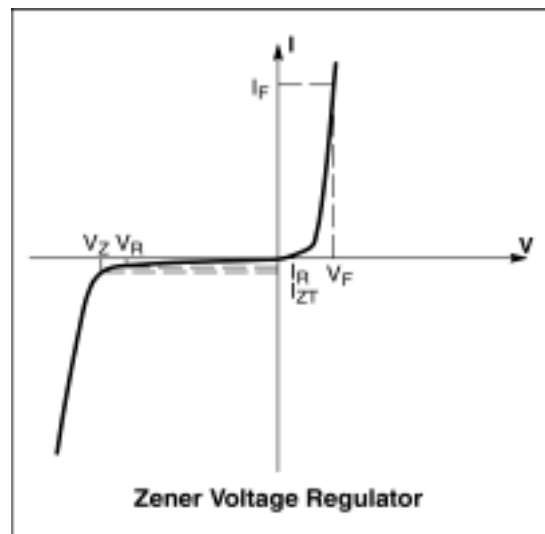


1N52xxB = Device Code

# 1N5221B~1N5281B

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted. Based on DC measurements at thermal equilibrium; lead length = 3/8"; thermal resistance of heat sink =  $30^\circ\text{C/W}$ ,  $V_F = 1.1\text{ V Max}$  @  $I_F = 200\text{mA}$  for all types)

| Symbol        | Parameter                                     |
|---------------|---|
| $V_Z$         | Reverse Zener Voltage @ $I_{ZT}$              |
| $I_{ZT}$      | Reverse Zener Current                         |
| $Z_{ZT}$      | Maximum Zener Impedance @ $I_{ZT}$            |
| $I_{ZK}$      | Reverse Zener Current                         |
| $I_R$         | Reverse Leakage Current @ $V_R$               |
| $V_R$         | Reverse Voltage                               |
| $I_F$         | Forward Current                               |
| $V_F$         | Forward Voltage @ $I_F$                       |
| $\theta_{VZ}$ | Maximum Zener Voltage Temperature Coefficient |



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 1.1\text{ V Max}$  @  $I_F = 200\text{mA}$  for all types)

| Device<br>(Note 2.) | Device<br>Marking | Zener Voltage (Note 3.) |            |              |            | Zener Impedance (Note 4.) |                     |               | Leakage Current   |          | $\theta_{VZ}$<br>(Note 5.)<br>(%/°C) |
|---------------------|-------------------|-------------------------|------------|--------------|------------|---------------------------|---------------------|---------------|-------------------|----------|--------------------------------------|
|                     |                   | $V_Z$ (Volts)           |            |              | @ $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$       | $Z_{ZK}$ @ $I_{ZK}$ | $I_R$ @ $V_R$ |                   |          |                                      |
|                     |                   | Min                     | Nom        | Max          | (mA)       | ( $\Omega$ )              | ( $\Omega$ )        | (mA)          | ( $\mu\text{A}$ ) | (Volts)  |                                      |
| 1N5221B             | 1N5221B           | 2.28                    | 2.4        | 2.52         | 20         | 30                        | 1200                | 0.25          | 100               | 1        | -0.085                               |
| 1N5222B             | 1N5222B           | 2.375                   | 2.5        | 2.625        | 20         | 30                        | 1250                | 0.25          | 100               | 1        | -0.085                               |
| 1N5223B             | 1N5223B           | 2.565                   | 2.7        | 2.835        | 20         | 30                        | 1300                | 0.25          | 75                | 1        | -0.08                                |
| 1N5224B             | 1N5224B           | 2.66                    | 2.8        | 2.94         | 20         | 30                        | 1400                | 0.25          | 75                | 1        | -0.08                                |
| 1N5225B             | 1N5225B           | 2.85                    | 3          | 3.15         | 20         | 29                        | 1600                | 0.25          | 50                | 1        | -0.075                               |
| <b>1N5226B</b>      | <b>1N5226B</b>    | <b>3.135</b>            | <b>3.3</b> | <b>3.465</b> | <b>20</b>  | <b>28</b>                 | <b>1600</b>         | <b>0.25</b>   | <b>25</b>         | <b>1</b> | <b>-0.07</b>                         |
| 1N5227B             | 1N5227B           | 3.42                    | 3.6        | 3.78         | 20         | 24                        | 1700                | 0.25          | 15                | 1        | -0.065                               |
| <b>1N5228B</b>      | <b>1N5228B</b>    | <b>3.705</b>            | <b>3.9</b> | <b>4.095</b> | <b>20</b>  | <b>23</b>                 | <b>1900</b>         | <b>0.25</b>   | <b>10</b>         | <b>1</b> | <b>-0.06</b>                         |
| 1N5229B             | 1N5229B           | 4.085                   | 4.3        | 4.515        | 20         | 22                        | 2000                | 0.25          | 5                 | 1        | $\pm 0.055$                          |
| 1N5230B             | 1N5230B           | 4.465                   | 4.7        | 4.935        | 20         | 19                        | 1900                | 0.25          | 5                 | 2        | $\pm 0.03$                           |
| <b>1N5231B</b>      | <b>1N5231B</b>    | <b>4.845</b>            | <b>5.1</b> | <b>5.355</b> | <b>20</b>  | <b>17</b>                 | <b>1600</b>         | <b>0.25</b>   | <b>5</b>          | <b>2</b> | <b><math>\pm 0.03</math></b>         |
| <b>1N5232B</b>      | <b>1N5232B</b>    | <b>5.32</b>             | <b>5.6</b> | <b>5.88</b>  | <b>20</b>  | <b>11</b>                 | <b>1600</b>         | <b>0.25</b>   | <b>5</b>          | <b>3</b> | <b>+0.038</b>                        |
| 1N5233B             | 1N5233B           | 5.7                     | 6          | 6.3          | 20         | 7                         | 1600                | 0.25          | 5                 | 3.5      | +0.038                               |
| <b>1N5234B</b>      | <b>1N5234B</b>    | <b>5.89</b>             | <b>6.2</b> | <b>6.51</b>  | <b>20</b>  | <b>7</b>                  | <b>1000</b>         | <b>0.25</b>   | <b>5</b>          | <b>4</b> | <b>+0.045</b>                        |
| <b>1N5235B</b>      | <b>1N5235B</b>    | <b>6.46</b>             | <b>6.8</b> | <b>7.14</b>  | <b>20</b>  | <b>5</b>                  | <b>750</b>          | <b>0.25</b>   | <b>3</b>          | <b>5</b> | <b>+0.05</b>                         |

## 2. TOLERANCE AND TYPE NUMBER DESIGNATION ( $V_Z$ )

The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

## 3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT

Nominal zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.

## 4. ZENER IMPEDANCE ( $Z_Z$ ) 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.

## 5. 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.

# 1N5221B~1N5281B

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 1.1\text{ V Max}$  @  $I_F = 200\text{mA}$  for all types)

| Device<br>(Note 6.) | Device<br>Marking | Zener Voltage (Note 7.) |            |              |            | Zener Impedance (Note 8.) |                     |             | Leakage Current   |            | $\theta_{VZ}$<br>(Note 9.) |
|---------------------|-------------------|-------------------------|------------|--------------|------------|---------------------------|---------------------|-------------|-------------------|------------|----------------------------|
|                     |                   | $V_Z$ (Volts)           |            |              | @ $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$       | $Z_{ZK}$ @ $I_{ZK}$ |             | $I_R$ @ $V_R$     |            |                            |
|                     |                   | Min                     | Nom        | Max          | (mA)       | ( $\Omega$ )              | ( $\Omega$ )        | (mA)        | ( $\mu\text{A}$ ) | (Volts)    | (%/°C)                     |
| 1N5236B             | 1N5236B           | 7.125                   | 7.5        | 7.875        | 20         | 6                         | 500                 | 0.25        | 3                 | 6          | +0.058                     |
| <b>1N5237B</b>      | <b>1N5237B</b>    | <b>7.79</b>             | <b>8.2</b> | <b>8.61</b>  | <b>20</b>  | <b>8</b>                  | <b>500</b>          | <b>0.25</b> | <b>3</b>          | <b>6.5</b> | <b>+0.062</b>              |
| 1N5238B             | 1N5238B           | 8.265                   | 8.7        | 9.135        | 20         | 8                         | 600                 | 0.25        | 3                 | 6.5        | +0.065                     |
| 1N5239B             | 1N5239B           | 8.645                   | 9.1        | 9.555        | 20         | 10                        | 600                 | 0.25        | 3                 | 7          | +0.068                     |
| <b>1N5240B</b>      | <b>1N5240B</b>    | <b>9.5</b>              | <b>10</b>  | <b>10.5</b>  | <b>20</b>  | <b>17</b>                 | <b>600</b>          | <b>0.25</b> | <b>3</b>          | <b>8</b>   | <b>+0.075</b>              |
| 1N5241B             | 1N5241B           | 10.45                   | 11         | 11.55        | 20         | 22                        | 600                 | 0.25        | 2                 | 8.4        | +0.076                     |
| <b>1N5242B</b>      | <b>1N5242B</b>    | <b>11.4</b>             | <b>12</b>  | <b>12.6</b>  | <b>20</b>  | <b>30</b>                 | <b>600</b>          | <b>0.25</b> | <b>1</b>          | <b>9.1</b> | <b>+0.077</b>              |
| 1N5243B             | 1N5243B           | 12.35                   | 13         | 13.65        | 9.5        | 13                        | 600                 | 0.25        | 0.5               | 9.9        | +0.079                     |
| 1N5244B             | 1N5244B           | 13.3                    | 14         | 14.7         | 9          | 15                        | 600                 | 0.25        | 0.1               | 10         | +0.082                     |
| <b>1N5245B</b>      | <b>1N5245B</b>    | <b>14.25</b>            | <b>15</b>  | <b>15.75</b> | <b>8.5</b> | <b>16</b>                 | <b>600</b>          | <b>0.25</b> | <b>0.1</b>        | <b>11</b>  | <b>+0.082</b>              |
| <b>1N5246B</b>      | <b>1N5246B</b>    | <b>15.2</b>             | <b>16</b>  | <b>16.8</b>  | <b>7.8</b> | <b>17</b>                 | <b>600</b>          | <b>0.25</b> | <b>0.1</b>        | <b>12</b>  | <b>+0.083</b>              |
| 1N5247B             | 1N5247B           | 16.15                   | 17         | 17.85        | 7.4        | 19                        | 600                 | 0.25        | 0.1               | 13         | +0.084                     |
| 1N5248B             | 1N5248B           | 17.1                    | 18         | 18.9         | 7          | 21                        | 600                 | 0.25        | 0.1               | 14         | +0.085                     |
| 1N5249B             | 1N5249B           | 18.05                   | 19         | 19.95        | 6.6        | 23                        | 600                 | 0.25        | 0.1               | 14         | +0.086                     |
| <b>1N5250B</b>      | <b>1N5250B</b>    | <b>19</b>               | <b>20</b>  | <b>21</b>    | <b>6.2</b> | <b>25</b>                 | <b>600</b>          | <b>0.25</b> | <b>0.1</b>        | <b>15</b>  | <b>+0.086</b>              |
| 1N5251B             | 1N5251B           | 20.9                    | 22         | 23.1         | 5.6        | 29                        | 600                 | 0.25        | 0.1               | 17         | +0.087                     |
| 1N5252B             | 1N5252B           | 22.8                    | 24         | 25.2         | 5.2        | 33                        | 600                 | 0.25        | 0.1               | 18         | +0.088                     |
| 1N5253B             | 1N5253B           | 23.75                   | 25         | 26.25        | 5          | 35                        | 600                 | 0.25        | 0.1               | 19         | +0.089                     |
| 1N5254B             | 1N5254B           | 25.65                   | 27         | 28.35        | 4.6        | 41                        | 600                 | 0.25        | 0.1               | 21         | +0.09                      |
| 1N5255B             | 1N5255B           | 26.6                    | 28         | 29.4         | 4.5        | 44                        | 600                 | 0.25        | 0.1               | 21         | +0.091                     |
| 1N5256B             | 1N5256B           | 28.5                    | 30         | 31.5         | 4.2        | 49                        | 600                 | 0.25        | 0.1               | 23         | +0.091                     |
| 1N5257B             | 1N5257B           | 31.35                   | 33         | 34.65        | 3.8        | 58                        | 700                 | 0.25        | 0.1               | 25         | +0.092                     |
| 1N5258B             | 1N5258B           | 34.2                    | 36         | 37.8         | 3.4        | 70                        | 700                 | 0.25        | 0.1               | 27         | +0.093                     |
| 1N5259B             | 1N5259B           | 37.05                   | 39         | 40.95        | 3.2        | 80                        | 800                 | 0.25        | 0.1               | 30         | +0.094                     |
| 1N5260B             | 1N5260B           | 40.85                   | 43         | 45.15        | 3          | 93                        | 900                 | 0.25        | 0.1               | 33         | +0.095                     |
| 1N5261B             | 1N5261B           | 44.65                   | 47         | 49.35        | 2.7        | 105                       | 1000                | 0.25        | 0.1               | 36         | +0.095                     |
| 1N5262B             | 1N5262B           | 48.45                   | 51         | 53.55        | 2.5        | 125                       | 1100                | 0.25        | 0.1               | 39         | +0.096                     |
| 1N5263B             | 1N5263B           | 53.2                    | 56         | 58.8         | 2.2        | 150                       | 1300                | 0.25        | 0.1               | 43         | +0.096                     |
| 1N5264B             | 1N5264B           | 57                      | 60         | 63           | 2.1        | 170                       | 1400                | 0.25        | 0.1               | 46         | +0.097                     |
| 1N5265B             | 1N5265B           | 58.9                    | 62         | 65.1         | 2          | 185                       | 1400                | 0.25        | 0.1               | 47         | +0.097                     |

**6. TOLERANCE AND TYPE NUMBER DESIGNATION ( $V_Z$ )**

The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

**7. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

Nominal zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.

**8. ZENER IMPEDANCE ( $Z_Z$ ) 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.

**9. 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.

# 1N5221B~1N5281B

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.1\text{ V Max}$ @ $I_F = 200\text{mA}$ for all types)

| Device<br>(Note 10.) | Device<br>Marking | Zener Voltage (Note 11.) |     |       |            | Zener Impedance (Note 12.) |                     |      | Leakage Current   |         | $\theta_{VZ}$ |
|----------------------|-------------------|--------------------------|-----|-------|------------|----------------------------|---------------------|------|-------------------|---------|---------------|
|                      |                   | $V_Z$ (Volts)            |     |       | @ $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$        | $Z_{ZK}$ @ $I_{ZK}$ |      | $I_R$ @ $V_R$     |         | (Note 13.)    |
|                      |                   | Min                      | Nom | Max   | (mA)       | ( $\Omega$ )               | ( $\Omega$ )        | (mA) | ( $\mu\text{A}$ ) | (Volts) | (%/°C)        |
| 1N5266B              | 1N5266B           | 64.6                     | 68  | 71.4  | 1.8        | 230                        | 1600                | 0.25 | 0.1               | 52      | +0.097        |
| 1N5267B              | 1N5267B           | 71.25                    | 75  | 78.75 | 1.7        | 270                        | 1700                | 0.25 | 0.1               | 56      | +0.098        |
| 1N5268B              | 1N5268B           | 77.9                     | 82  | 86.1  | 1.5        | 330                        | 2000                | 0.25 | 0.1               | 62      | +0.098        |
| 1N5269B              | 1N5269B           | 82.65                    | 87  | 91.35 | 1.4        | 370                        | 2200                | 0.25 | 0.1               | 68      | +0.099        |
| 1N5270B              | 1N5270B           | 86.45                    | 91  | 95.55 | 1.4        | 400                        | 2300                | 0.25 | 0.1               | 69      | +0.099        |
| 1N5271B              | 1N5271B           | 95                       | 100 | 105   | 1.3        | 500                        | 2600                | 0.25 | 0.1               | 76      | +0.11         |
| 1N5272B              | 1N5272B           | 104.5                    | 110 | 115.5 | 1.1        | 750                        | 3000                | 0.25 | 0.1               | 84      | +0.11         |
| 1N5273B              | 1N5273B           | 114                      | 120 | 126   | 1          | 900                        | 4000                | 0.25 | 0.1               | 91      | +0.11         |
| 1N5274B              | 1N5274B           | 123.5                    | 130 | 136.5 | 0.95       | 1100                       | 4500                | 0.25 | 0.1               | 99      | +0.11         |
| 1N5275B              | 1N5275B           | 133                      | 140 | 147   | 0.9        | 1300                       | 4500                | 0.25 | 0.1               | 106     | +0.11         |
| 1N5276B              | 1N5276B           | 142.5                    | 150 | 157.5 | 0.85       | 1500                       | 5000                | 0.25 | 0.1               | 114     | +0.11         |
| 1N5277B              | 1N5277B           | 152                      | 160 | 168   | 0.8        | 1700                       | 5500                | 0.25 | 0.1               | 122     | +0.11         |
| 1N5278B              | 1N5278B           | 161.5                    | 170 | 178.5 | 0.74       | 1900                       | 5500                | 0.25 | 0.1               | 129     | +0.11         |
| 1N5279B              | 1N5279B           | 171                      | 180 | 189   | 0.68       | 2200                       | 6000                | 0.25 | 0.1               | 137     | +0.11         |
| 1N5280B              | 1N5280B           | 180.5                    | 190 | 199.5 | 0.66       | 2400                       | 6500                | 0.25 | 0.1               | 144     | +0.11         |
| 1N5281B              | 1N5281B           | 190                      | 200 | 210   | 0.65       | 2500                       | 7000                | 0.25 | 0.1               | 152     | +0.11         |

### 10. TOLERANCE AND TYPE NUMBER DESIGNATION ( $V_Z$ )

The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

### 11. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT

Nominal zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C}$   $\pm 1^\circ\text{C}$  and 3/8" lead length.

### 12. ZENER IMPEDANCE ( $Z_Z$ ) 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.

### 13. 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.

# DEVICE CHARACTERISTICS

## 1N5221B~1N5281B

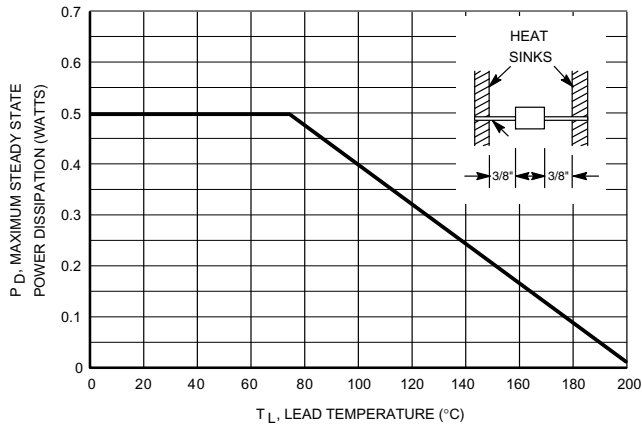


Figure 1. Steady State Power Derating

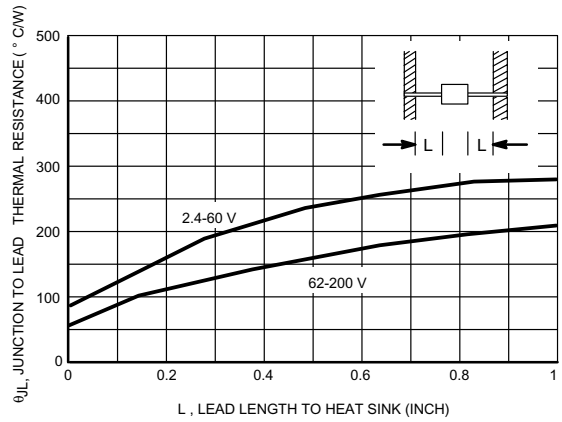


Figure 2. Typical Thermal Resistance

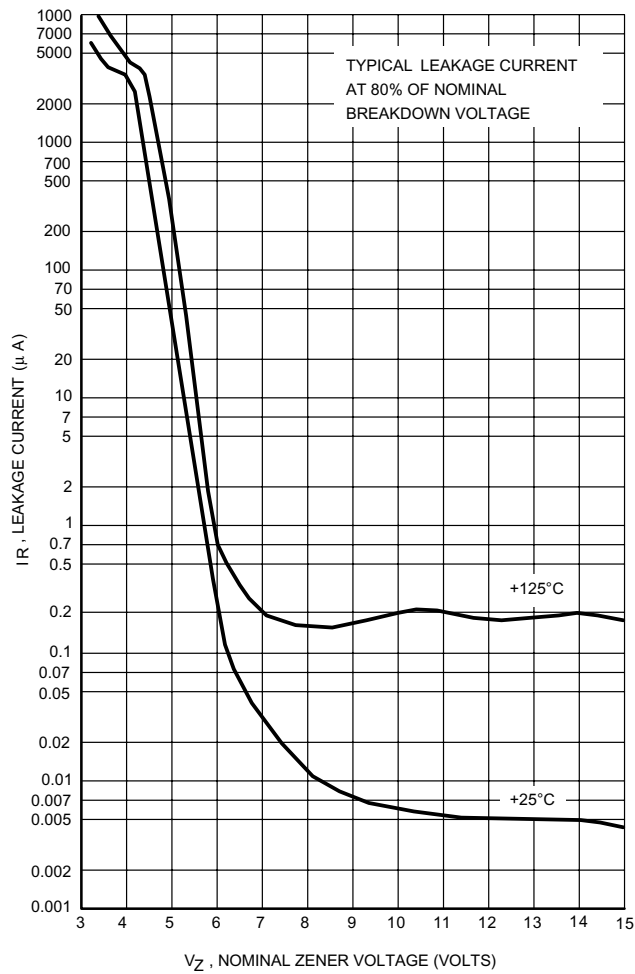


Figure 3. Typical Leakage Current

# DEVICE CHARACTERISTICS

## 1N5221B~1N5281B

### TEMPERATURE COEFFICIENTS

(-55°C to +150°C temperature range; 90% of the units are in the ranges indicated.)

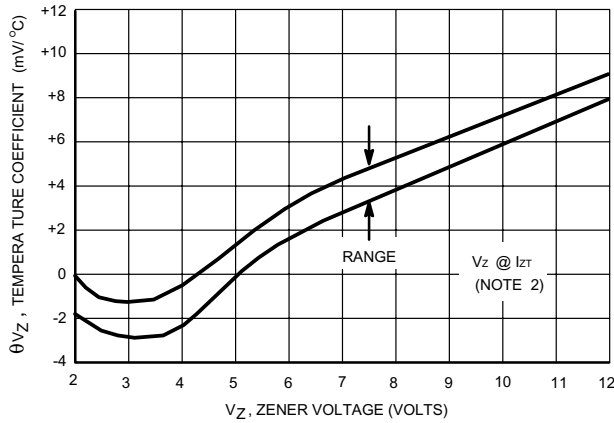


Figure 4a. Range for Units to 12 Volts

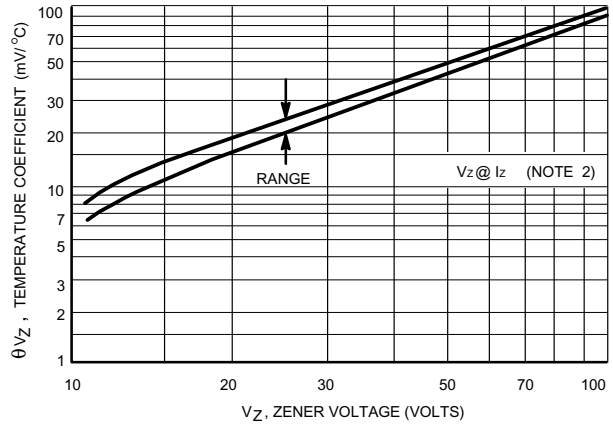


Figure 4b. Range for Units 12 to 100 Volts

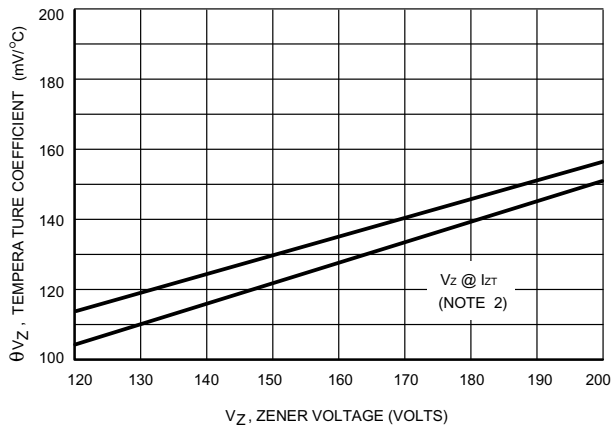


Figure 4c. Range for Units 120 to 200 Volts

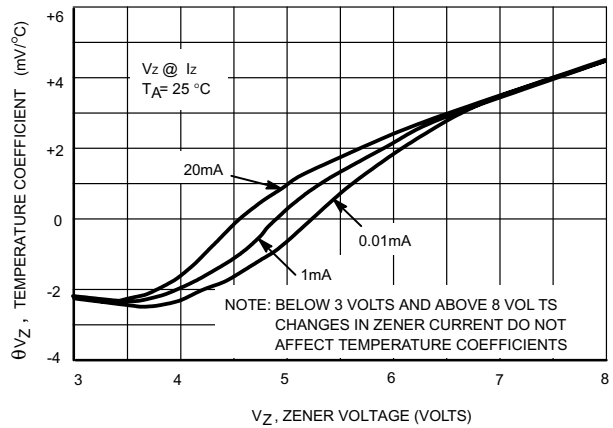


Figure 5. Effect of Zener Current

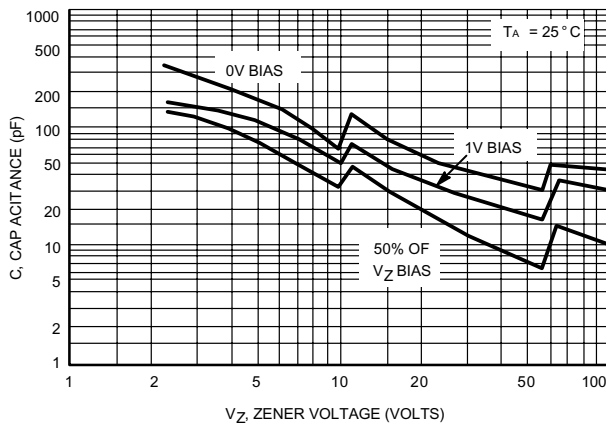


Figure 6a. Typical Capacitance 2.4-100 Volts

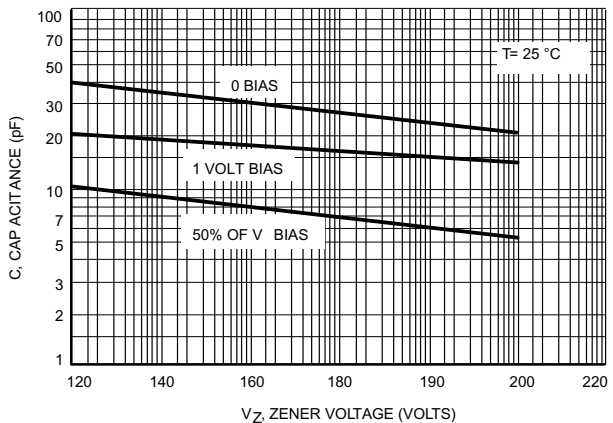


Figure 6b. Typical Capacitance 120-200 Volts

# DEVICE CHARACTERISTICS

## 1N5221B~1N5281B

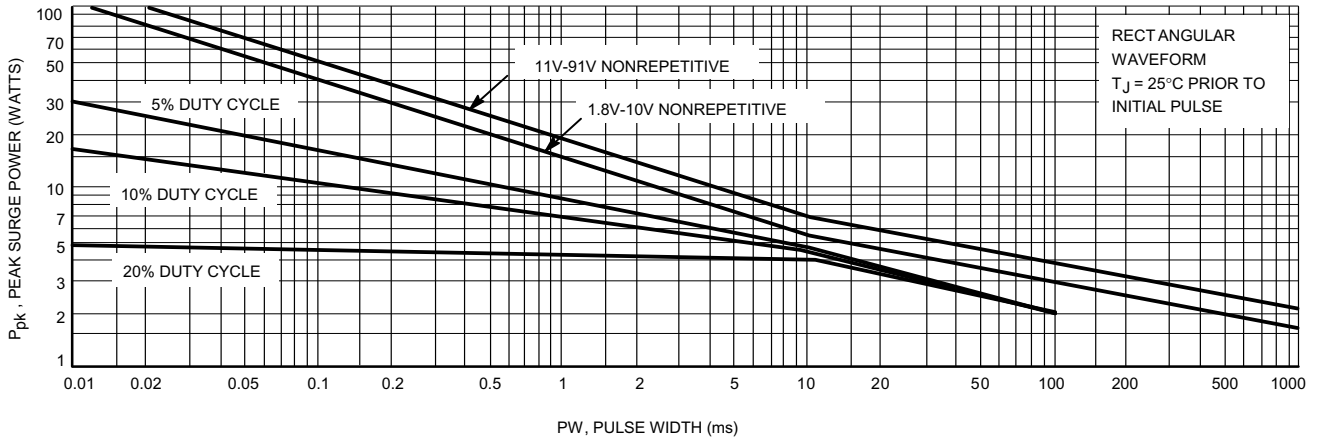


Figure 7a. Maximum Surge Power 1.8-91 Volts

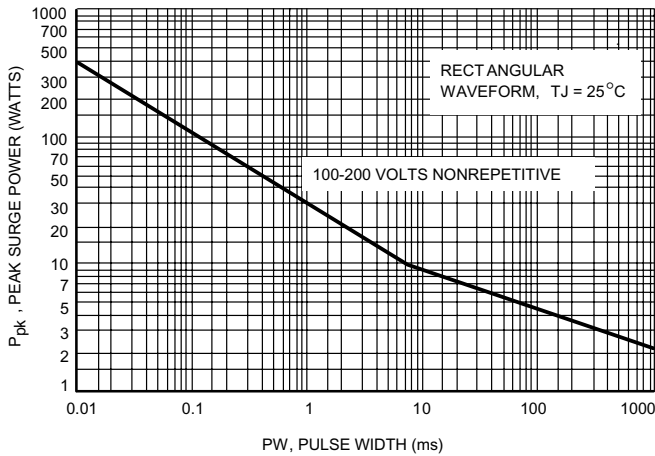


Figure 7b. Maximum Surge Power DO-35  
100-200Volts

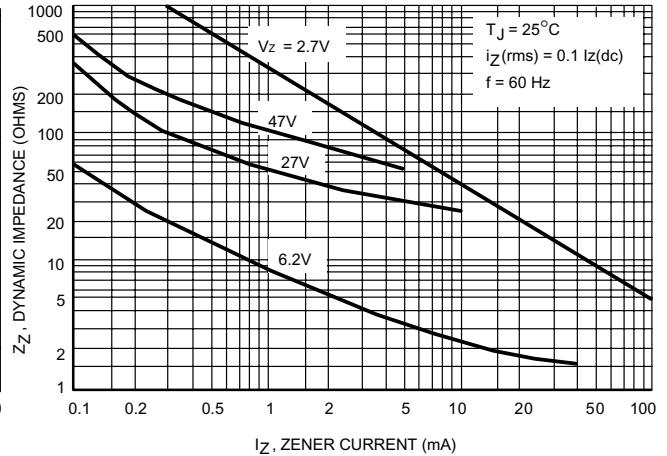


Figure 8. Effect of Zener Current on  
Zener Impedance

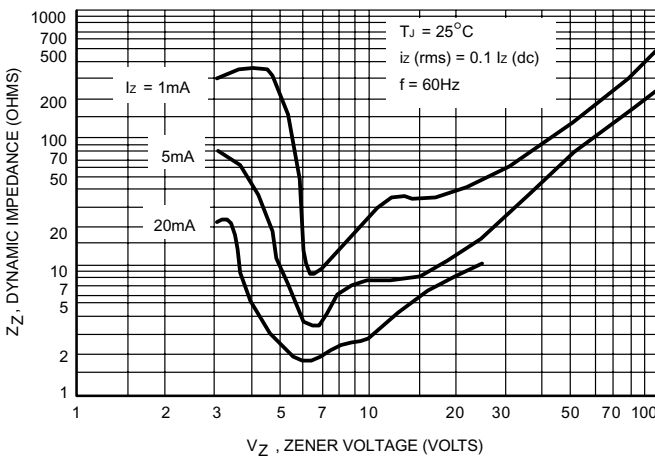


Figure 9. Effect of Zener Voltage on Zener Impedance

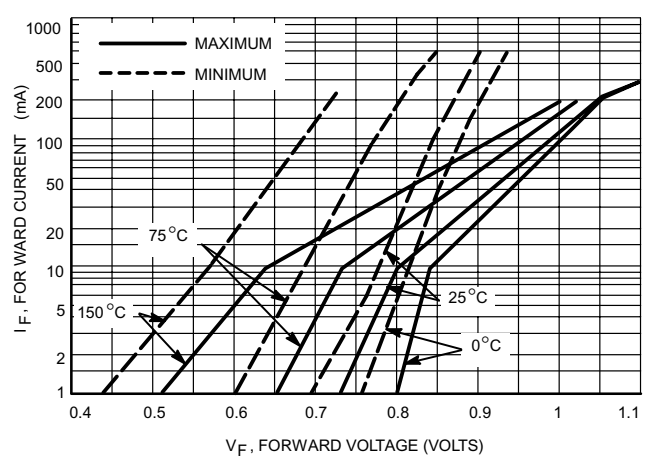


Figure 10. Typical Forward Characteristics

# DEVICE CHARACTERISTICS

## 1N5221B~1N5281B

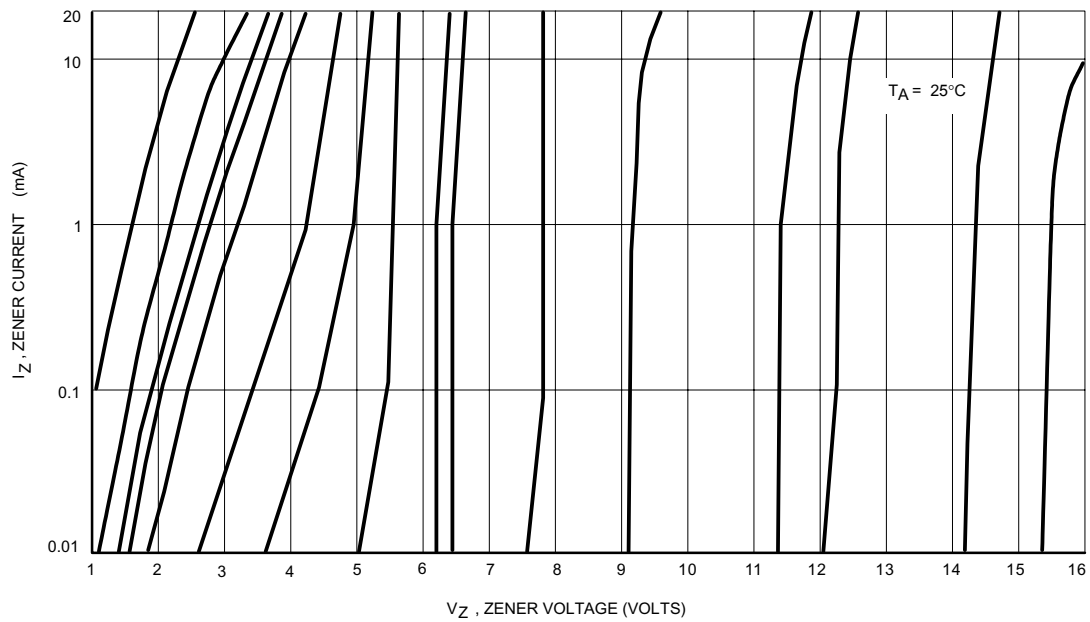


Figure 1 1. Zener Voltage versus Zener Current -  $V_Z = 1$  thru 16 Volts

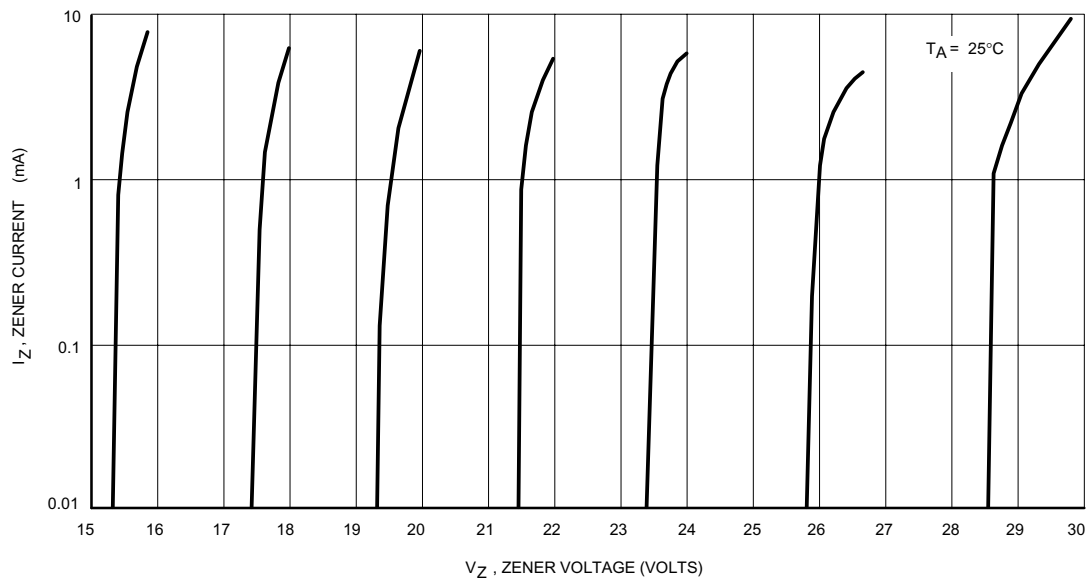


Figure 12. Zener Voltage versus Zener Current -  $V_Z = 15$  thru 30 Volts



# DEVICE CHARACTERISTICS

## 1N5221B~1N5281B

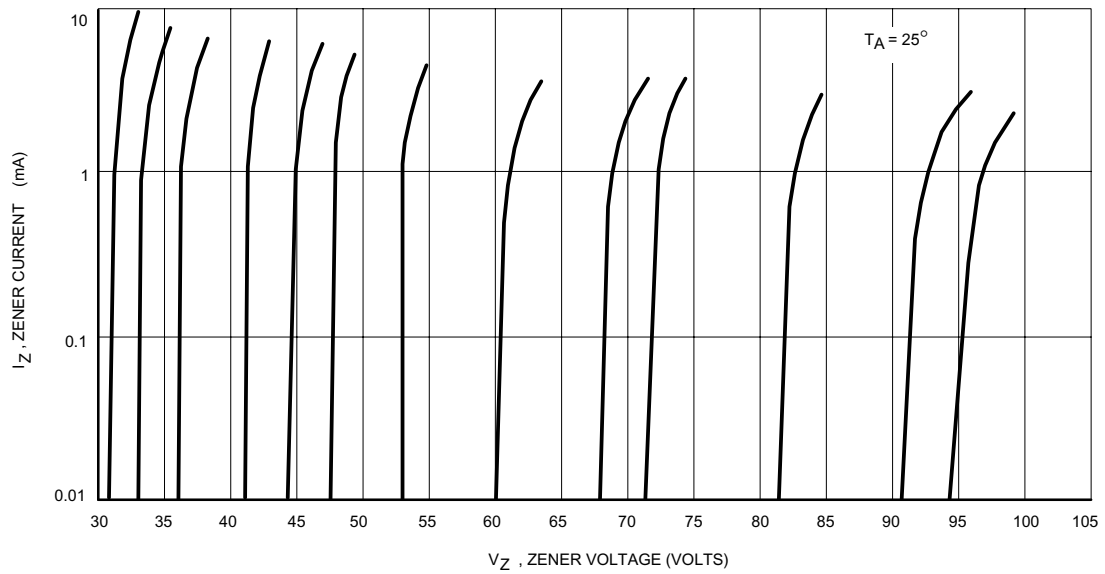


Figure 13. Zener Voltage versus Zener Current -  $V_Z = 30$  thru 105 Volts

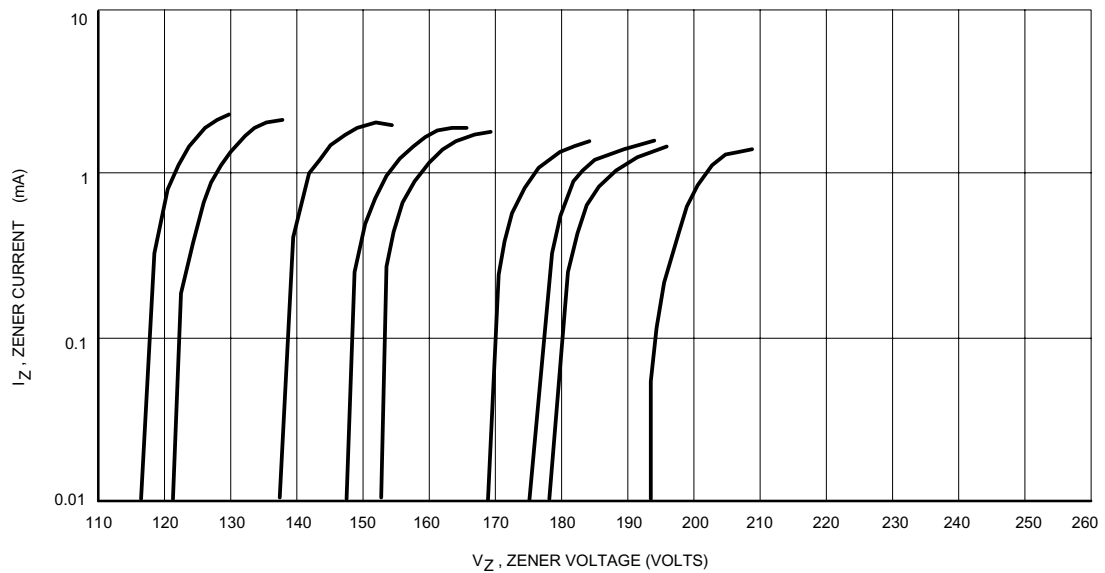
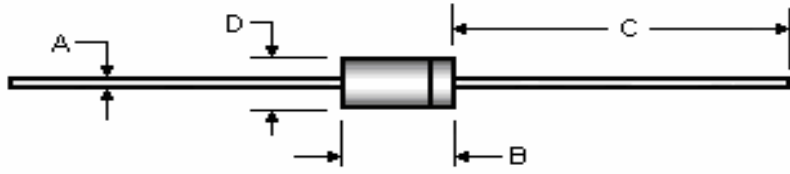


Figure 14. Zener Voltage versus Zener Current -  $V_Z = 110$  thru 220 Volts

# PACKAGE OUTLINE & DIMENSIONS

1N5221B~1N5281B

## Package Outline

| Package  | Case Outline   |             |       |        |       |
|----------|--|-------------|-------|--------|-------|
| DO-35    |  |             |       |        |       |
|          | DO-35  |             |       |        |       |
|          | DIM  | Millimeters |       | Inches |       |
|          |  | Min         | Max   | Min    | Max   |
|          | <b>A</b>   | 0.46        | 0.55  | 0.018  | 0.022 |
| <b>B</b> | 3.05   | 5.08        | 0.120 | 0.200  |       |
| <b>C</b> | 25.40  | 38.10       | 1.000 | 1.500  |       |
| <b>D</b> | 1.53   | 2.28        | 0.060 | 0.090  |       |

**Notes:**

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.