



## 稳压（齐纳）二极管 Zener Diodes

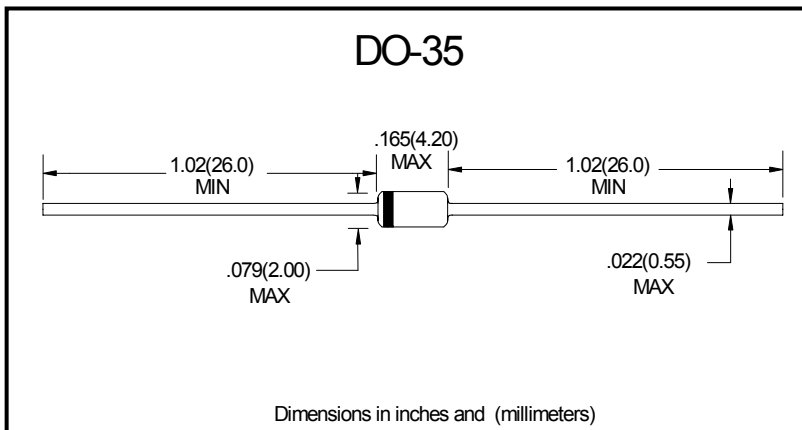
### ■特征 Features

- $P_{tot}$  500mW
- $V_z$  2.4V-75V

### ■用途 Applications

- 稳定电压用 Stabilizing Voltage

### ■外形尺寸和印记 Outline Dimensions and Mark



### ■极限值（绝对最大额定值）

#### Limiting Values (Absolute Maximum Rating)

| 参数名称<br>Item                         | 符号<br>Symbol | 单位<br>Unit       | 条件<br>Conditions                     | 最大值<br>Max       |
|--------------------------------------|--------------|------------------|--------------------------------------|------------------|
| 损耗功率<br>Power dissipation            | $P_{tot}$    | mW               | $L=4\text{mm}, T_L=25^\circ\text{C}$ | 500              |
| 齐纳电流<br>Zener current                | $I_z$        | mA               | $P_{tot}/V_z$                        | 见表格<br>See Table |
| 最大结温<br>Maximum junction temperature | $T_j$        | $^\circ\text{C}$ |                                      | 175              |
| 存储温度范围<br>Storage temperature range  | $T_{stg}$    | $^\circ\text{C}$ |                                      | -65 to +175      |

### ■电特性（ $T_a=25^\circ\text{C}$ 除非另有规定）

#### Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

| 参数名称<br>Item                  | 符号<br>Symbol    | 单位<br>Unit                | 条件<br>Conditions                                                                                       | 最大值<br>Max |
|-------------------------------|-----------------|---------------------------|--------------------------------------------------------------------------------------------------------|------------|
| 典型热阻(1)<br>Thermal resistance | $R_{\theta JA}$ | $^\circ\text{C}/\text{W}$ | 结到环境, $L=4\text{毫米}$ , $T_L=\text{常温}$<br>junction to ambient air, $L=4\text{mm}, T_L=\text{constant}$ | 300        |
| 正向电压<br>Forward voltage       | $V_F$           | V                         | $I_F=200\text{mA}$                                                                                     | 1.5        |

■ 电性参数 (T<sub>A</sub>=25℃ 除非另有规定)

Electrical Characteristics (T<sub>A</sub>=25℃ unless otherwise noted)

BZX55C..

| 产品型号<br>Part Number | 齐纳电压范围<br>Zener voltage range     |      | 动态电阻<br>Dynamic resistance                       |                                                  | 测试电流<br>Test current | 温度系数<br>Temperature Coefficient |        | 测试电流<br>Test current | 反向漏电流<br>Reverse leakage current           |                                             |                   |
|---------------------|-----------------------------------|------|--------------------------------------------------|--------------------------------------------------|----------------------|---------------------------------|--------|----------------------|--------------------------------------------|---------------------------------------------|-------------------|
|                     | V <sub>Z</sub> at I <sub>ZT</sub> |      | R <sub>ZJT</sub> at I <sub>ZT</sub><br>f = 1 KHz | R <sub>ZJK</sub> at I <sub>ZK</sub><br>f = 1 KHz | I <sub>ZT</sub>      | TK <sub>VZ</sub>                |        | I <sub>ZK</sub>      | I <sub>R</sub> at<br>T <sub>amb</sub> =25℃ | I <sub>R</sub> at<br>T <sub>amb</sub> =150℃ | at V <sub>R</sub> |
|                     | V                                 |      | Ω                                                |                                                  | mA                   | % / K                           |        | mA                   | μA                                         |                                             | V                 |
|                     | Min.                              | Max. |                                                  |                                                  |                      | Min.                            | Max.   |                      |                                            |                                             |                   |
| BZX55C2V4           | 2.28                              | 2.56 | < 85                                             | < 600                                            | 5                    | - 0.09                          | - 0.06 | 1                    | < 50                                       | < 100                                       | 1                 |
| BZX55C2V7           | 2.5                               | 2.9  | < 85                                             | < 600                                            | 5                    | - 0.09                          | - 0.06 | 1                    | < 10                                       | < 50                                        | 1                 |
| BZX55C3V0           | 2.8                               | 3.2  | < 85                                             | < 600                                            | 5                    | - 0.08                          | - 0.05 | 1                    | < 4                                        | < 40                                        | 1                 |
| BZX55C3V3           | 3.1                               | 3.5  | < 85                                             | < 600                                            | 5                    | - 0.08                          | - 0.05 | 1                    | < 2                                        | < 40                                        | 1                 |
| BZX55C3V6           | 3.4                               | 3.8  | < 85                                             | < 600                                            | 5                    | - 0.08                          | - 0.05 | 1                    | < 2                                        | < 40                                        | 1                 |
| BZX55C3V9           | 3.7                               | 4.1  | < 85                                             | < 600                                            | 5                    | - 0.08                          | - 0.05 | 1                    | < 2                                        | < 40                                        | 1                 |
| BZX55C4V3           | 4                                 | 4.6  | < 75                                             | < 600                                            | 5                    | - 0.06                          | - 0.03 | 1                    | < 1                                        | < 20                                        | 1                 |
| BZX55C4V7           | 4.4                               | 5    | < 60                                             | < 600                                            | 5                    | - 0.05                          | 0.02   | 1                    | < 0.5                                      | < 10                                        | 1                 |
| BZX55C5V1           | 4.8                               | 5.4  | < 35                                             | < 550                                            | 5                    | - 0.02                          | 0.02   | 1                    | < 0.1                                      | < 2                                         | 1                 |
| BZX55C5V6           | 5.2                               | 6    | < 25                                             | < 450                                            | 5                    | - 0.05                          | 0.05   | 1                    | < 0.1                                      | < 2                                         | 1                 |
| BZX55C6V2           | 5.8                               | 6.6  | < 10                                             | < 200                                            | 5                    | 0.03                            | 0.06   | 1                    | < 0.1                                      | < 2                                         | 2                 |
| BZX55C6V8           | 6.4                               | 7.2  | < 8                                              | < 150                                            | 5                    | 0.03                            | 0.07   | 1                    | < 0.1                                      | < 2                                         | 3                 |
| BZX55C7V5           | 7                                 | 7.9  | < 7                                              | < 50                                             | 5                    | 0.03                            | 0.07   | 1                    | < 0.1                                      | < 2                                         | 5                 |
| BZX55C8V2           | 7.7                               | 8.7  | < 7                                              | < 50                                             | 5                    | 0.03                            | 0.08   | 1                    | < 0.1                                      | < 2                                         | 6.2               |
| BZX55C9V1           | 8.5                               | 9.6  | < 10                                             | < 50                                             | 5                    | 0.03                            | 0.09   | 1                    | < 0.1                                      | < 2                                         | 6.8               |
| BZX55C10            | 9.4                               | 10.6 | < 15                                             | < 70                                             | 5                    | 0.03                            | 0.1    | 1                    | < 0.1                                      | < 2                                         | 7.5               |
| BZX55C11            | 10.4                              | 11.6 | < 20                                             | < 70                                             | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 8.2               |
| BZX55C12            | 11.4                              | 12.7 | < 20                                             | < 90                                             | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 9.1               |
| BZX55C13            | 12.4                              | 14.1 | < 26                                             | < 110                                            | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 10                |
| BZX55C15            | 13.8                              | 15.6 | < 30                                             | < 110                                            | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 11                |
| BZX55C16            | 15.3                              | 17.1 | < 40                                             | < 170                                            | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 12                |
| BZX55C18            | 16.8                              | 19.1 | < 50                                             | < 170                                            | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 13                |
| BZX55C20            | 18.8                              | 21.2 | < 55                                             | < 220                                            | 5                    | 0.03                            | 0.11   | 1                    | < 0.1                                      | < 2                                         | 15                |
| BZX55C22            | 20.8                              | 23.3 | < 55                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 16                |
| BZX55C24            | 22.8                              | 25.6 | < 80                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 18                |
| BZX55C27            | 25.1                              | 28.9 | < 80                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 20                |
| BZX55C30            | 28                                | 32   | < 80                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 22                |
| BZX55C33            | 31                                | 35   | < 80                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 24                |
| BZX55C36            | 34                                | 38   | < 80                                             | < 220                                            | 5                    | 0.04                            | 0.12   | 1                    | < 0.1                                      | < 2                                         | 27                |
| BZX55C39            | 37                                | 41   | < 90                                             | < 500                                            | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 5                                         | 30                |
| BZX55C43            | 40                                | 46   | < 90                                             | < 600                                            | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 5                                         | 33                |
| BZX55C47            | 44                                | 50   | < 110                                            | < 700                                            | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 5                                         | 36                |
| BZX55C51            | 48                                | 54   | < 125                                            | < 700                                            | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 10                                        | 39                |
| BZX55C56            | 52                                | 60   | < 135                                            | < 1000                                           | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 10                                        | 43                |
| BZX55C62            | 58                                | 66   | < 150                                            | < 1000                                           | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 10                                        | 47                |
| BZX55C68            | 64                                | 72   | < 200                                            | < 1000                                           | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 10                                        | 51                |
| BZX55C75            | 70                                | 79   | < 250                                            | < 1500                                           | 2.5                  | 0.04                            | 0.12   | 0.5                  | < 0.1                                      | < 10                                        | 56                |



# BZX55 SERIES

■ 电性参数 ( $T_A=25^{\circ}\text{C}$  除非另有规定)

Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

BZX55B..

| 产品型号<br>Part Number | 齐纳电压范围<br>Zener voltage<br>range |       | 动态电阻<br>Dynamic resistance                  |                                             | 测试电流<br>Test current | 温度系数<br>Temperature<br>Coefficient |        | 测试电流<br>Test current | 反向漏电流<br>Reverse leakage current         |                                           |          |
|---------------------|----------------------------------|-------|---------------------------------------------|---------------------------------------------|----------------------|------------------------------------|--------|----------------------|------------------------------------------|-------------------------------------------|----------|
|                     | $V_Z$ at $I_{ZT}$                |       | $R_{ZJT}$ at $I_{ZT}$<br>$f = 1\text{ KHz}$ | $R_{ZJK}$ at $I_{ZK}$<br>$f = 1\text{ KHz}$ | $I_{ZT}$             | $TK_{VZ}$                          |        | $I_{ZK}$             | $I_R$ at<br>$T_{amb}=25^{\circ}\text{C}$ | $I_R$ at<br>$T_{amb}=150^{\circ}\text{C}$ | at $V_R$ |
|                     | V                                |       | $\Omega$                                    |                                             | mA                   | %K                                 |        | mA                   | $\mu\text{A}$                            |                                           | V        |
|                     | Min.                             | Max.  |                                             |                                             |                      | Min.                               | Max.   |                      |                                          |                                           |          |
| BZX55B2V7           | 2.64                             | 2.76  | < 85                                        | < 600                                       | 5                    | - 0.09                             | - 0.06 | 1                    | < 10                                     | < 50                                      | 1        |
| BZX55B3V0           | 2.94                             | 3.06  | < 90                                        | < 600                                       | 5                    | - 0.08                             | - 0.05 | 1                    | < 4                                      | < 40                                      | 1        |
| BZX55B3V3           | 3.24                             | 3.36  | < 90                                        | < 600                                       | 5                    | - 0.08                             | - 0.05 | 1                    | < 2                                      | < 40                                      | 1        |
| BZX55B3V6           | 3.52                             | 3.68  | < 90                                        | < 600                                       | 5                    | - 0.08                             | - 0.05 | 1                    | < 2                                      | < 40                                      | 1        |
| BZX55B3V9           | 3.82                             | 3.98  | < 90                                        | < 600                                       | 5                    | - 0.08                             | - 0.05 | 1                    | < 2                                      | < 40                                      | 1        |
| BZX55B4V3           | 4.22                             | 4.38  | < 90                                        | < 600                                       | 5                    | - 0.06                             | - 0.03 | 1                    | < 1                                      | < 20                                      | 1        |
| BZX55B4V7           | 4.6                              | 4.8   | < 80                                        | < 600                                       | 5                    | - 0.05                             | 0.02   | 1                    | < 0.5                                    | < 10                                      | 1        |
| BZX55B5V1           | 5                                | 5.2   | < 60                                        | < 550                                       | 5                    | - 0.02                             | 0.02   | 1                    | < 0.1                                    | < 2                                       | 1        |
| BZX55B5V6           | 5.48                             | 5.72  | < 40                                        | < 450                                       | 5                    | - 0.05                             | 0.05   | 1                    | < 0.1                                    | < 2                                       | 1        |
| BZX55B6V2           | 6.08                             | 6.32  | < 10                                        | < 200                                       | 5                    | 0.03                               | 0.06   | 1                    | < 0.1                                    | < 2                                       | 2        |
| BZX55B6V8           | 6.66                             | 6.94  | < 8                                         | < 150                                       | 5                    | 0.03                               | 0.07   | 1                    | < 0.1                                    | < 2                                       | 3        |
| BZX55B7V5           | 7.35                             | 7.65  | < 7                                         | < 50                                        | 5                    | 0.03                               | 0.07   | 1                    | < 0.1                                    | < 2                                       | 5        |
| BZX55B8V2           | 8.04                             | 8.36  | < 7                                         | < 50                                        | 5                    | 0.03                               | 0.08   | 1                    | < 0.1                                    | < 2                                       | 6.2      |
| BZX55B9V1           | 8.92                             | 9.28  | < 10                                        | < 50                                        | 5                    | 0.03                               | 0.09   | 1                    | < 0.1                                    | < 2                                       | 6.8      |
| BZX55B10            | 9.8                              | 10.2  | < 15                                        | < 70                                        | 5                    | 0.03                               | 0.1    | 1                    | < 0.1                                    | < 2                                       | 7.5      |
| BZX55B11            | 10.78                            | 11.22 | < 20                                        | < 70                                        | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 8.2      |
| BZX55B12            | 11.76                            | 12.24 | < 20                                        | < 90                                        | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 9.1      |
| BZX55B13            | 12.74                            | 13.26 | < 26                                        | < 110                                       | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 10       |
| BZX55B15            | 14.7                             | 15.3  | < 30                                        | < 110                                       | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 11       |
| BZX55B16            | 15.7                             | 16.3  | < 40                                        | < 170                                       | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 12       |
| BZX55B18            | 17.64                            | 18.36 | < 50                                        | < 170                                       | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 13       |
| BZX55B20            | 19.6                             | 20.4  | < 55                                        | < 220                                       | 5                    | 0.03                               | 0.11   | 1                    | < 0.1                                    | < 2                                       | 15       |
| BZX55B22            | 21.55                            | 22.45 | < 55                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 16       |
| BZX55B24            | 23.5                             | 24.5  | < 80                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 18       |
| BZX55B27            | 26.4                             | 27.6  | < 80                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 20       |
| BZX55B30            | 29.4                             | 30.6  | < 80                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 22       |
| BZX55B33            | 32.4                             | 33.6  | < 80                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 24       |
| BZX55B36            | 35.3                             | 36.7  | < 80                                        | < 220                                       | 5                    | 0.04                               | 0.12   | 1                    | < 0.1                                    | < 2                                       | 27       |
| BZX55B39            | 38.2                             | 39.8  | < 90                                        | < 500                                       | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 5                                       | 30       |
| BZX55B43            | 42.1                             | 43.9  | < 90                                        | < 600                                       | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 5                                       | 33       |
| BZX55B47            | 46.1                             | 47.9  | < 110                                       | < 700                                       | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 5                                       | 36       |
| BZX55B51            | 50                               | 52    | < 125                                       | < 700                                       | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 10                                      | 39       |
| BZX55B56            | 54.9                             | 57.1  | < 135                                       | < 1000                                      | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 10                                      | 43       |
| BZX55B62            | 60.8                             | 63.2  | < 150                                       | < 1000                                      | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 10                                      | 47       |
| BZX55B68            | 66.6                             | 69.4  | < 200                                       | < 1000                                      | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 10                                      | 51       |
| BZX55B75            | 73                               | 76.5  | < 250                                       | < 1500                                      | 2.5                  | 0.04                               | 0.12   | 0.5                  | < 0.1                                    | < 10                                      | 56       |

## ■特性曲线（典型） Characteristics(Typical)

图1: 总功率损耗与环境温度关系

FIG1: Total Power Dissipation vs. Ambient Temperature

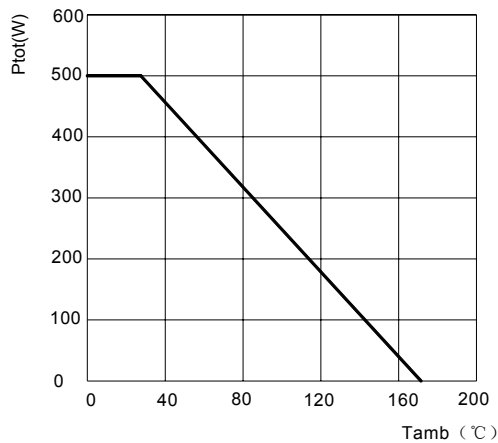


图2: 热阻与引线长度关系

FIG2: Thermal Resistance vs. Lead Length

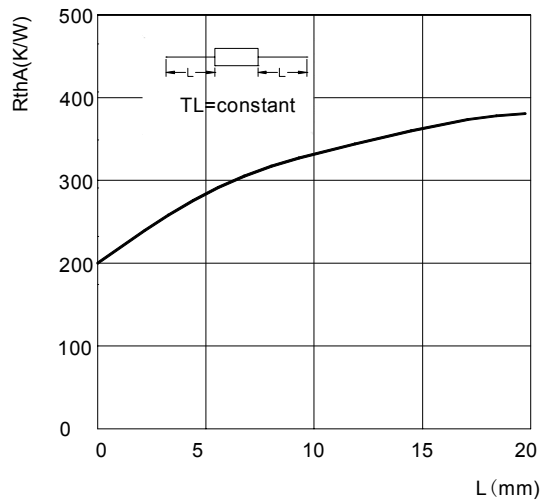


图3: 工作电压在工作条件Tamb=25度下的典型变化

FIG3: Typical Change of Working Voltage under Operating Conditions at Tamb=25°C

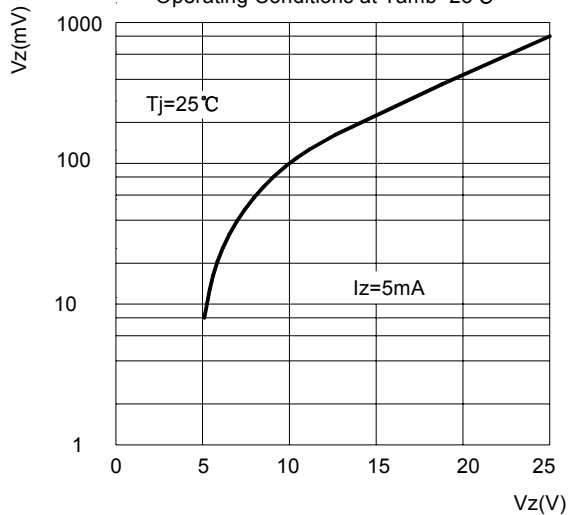


图4: 工作电压的典型变化与结温的关系

FIG4: Typical Change of Working Voltage vs. Junction Temperature

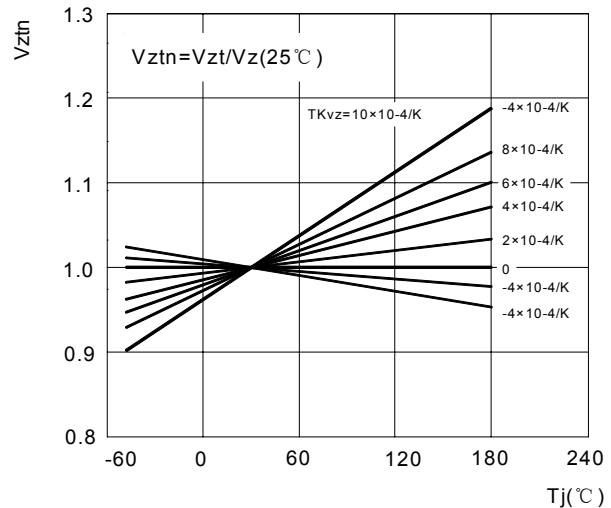


图5: 温度系数与齐纳电压的关系

FIG5: Temperature Coefficient of Vz vs. Z-voltage

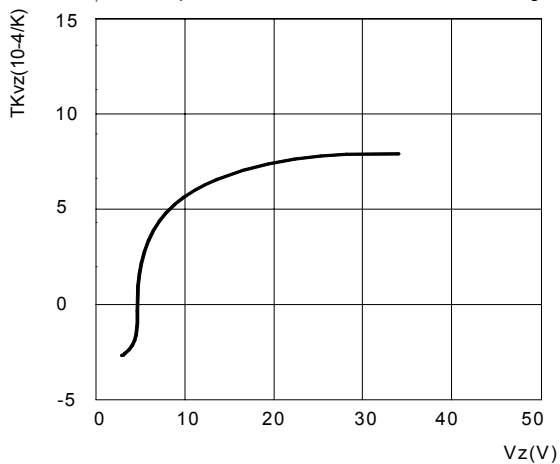
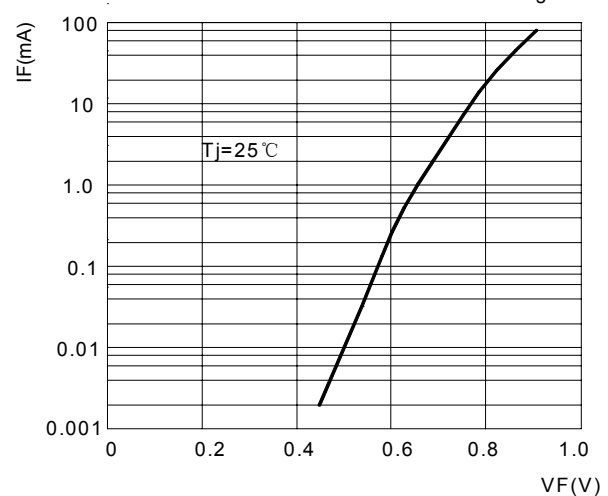


图6: 正向电流与正向电压的关系

FIG6: Forward Current vs. Forward Voltage





## ■特性曲线（典型） Characteristics(Typical)

图7：齐纳电流与齐纳电压的关系

FIG7: Z-Current vs. Z-Voltage

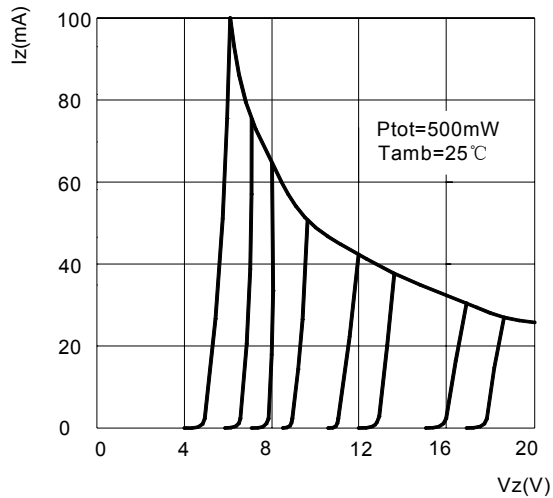


图8：齐纳电流与齐纳电压的关系

FIG8: Z-Current vs. Z-Voltage

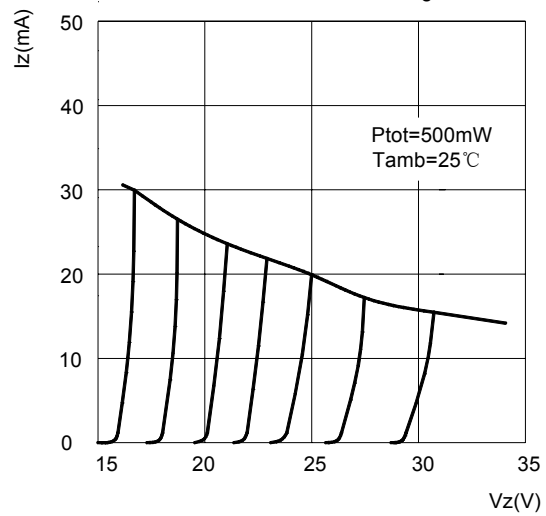


图9：不同齐纳阻抗与齐纳电压的关系

FIG9: Differential Z-Resistance vs. Z-Voltage

