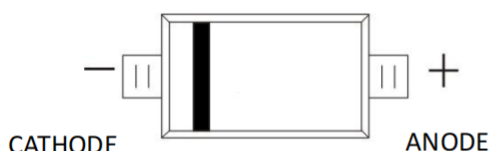


### Features

- Low Zener Impedance
- Power Dissipation of 200mW
- High Stability and High Reliability
- Halogen free and RoHS compliant
- SOD323 surface mount package

### Applications

- General voltage regulation
- Mobile & handheld systems
- Household Electric Appliances
- Industrial automation
- communication field



**SOD323**



**Pin Configuration**

### Maximum Ratings& Thermal Characteristics

(Tamb=25°C unless otherwise specified)

| Parameter                                | Symbol | Value      | Unit |
|------------------------------------------|--------|------------|------|
| Forward Voltage @ IF=10mA                | VF     | 0.9        | V    |
| Power Dissipation                        | PD     | 200        | mW   |
| Thermal Resistance (Junction-to-Ambient) | RθJA   | 556        | °C/W |
| Thermal Resistance (Junction-to-Case)    | RθJC   | 417        | °C/W |
| Junction Temperature Range               | TJ     | 150        | °C   |
| Storage Temperature Range                | TSTG   | -55 ~ +150 | °C   |

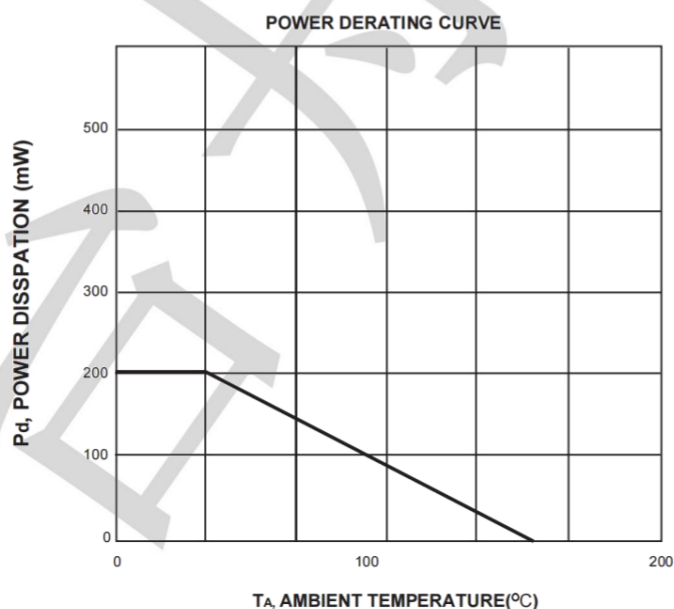
### Electrical Characteristics (TA=25°C unless otherwise specified)

| DEVICE      | VZ(V) @ IZ=5mA |     |       | ZZ @ IZ<br>= 1mA | ZZ @ IZ<br>= 5mA | ZZ @ IZ<br>= 20mA | IR@VR | VR | Typical<br>Temperature<br>Coefficient(mV/<br>°C)@ IZ=5mA |      |
|-------------|----------------|-----|-------|------------------|------------------|-------------------|-------|----|----------------------------------------------------------|------|
|             | MIN            | NOM | MAX   | Ω                |                  |                   | uA    | V  | Min                                                      | Max  |
| TPZ2V0C-323 | 1.9            | 2.0 | 2.1   | 600              | 100              | 50                | 150   | 1  | -3.5                                                     | 0    |
| TPZ2V2C-323 | 2.09           | 2.2 | 2.31  | 600              | 100              | 50                | 150   | 1  | -3.5                                                     | 0    |
| TPZ2V4C-323 | 2.28           | 2.4 | 2.60  | 600              | 100              | 50                | 50    | 1  | -3.5                                                     | 0    |
| TPZ2V7C-323 | 2.57           | 2.7 | 2.90  | 600              | 100              | 50                | 20    | 1  | -3.5                                                     | 0    |
| TPZ3V0C-323 | 2.85           | 3.0 | 3.15  | 600              | 95               | 50                | 10    | 1  | -3.5                                                     | 0    |
| TPZ3V3C-323 | 3.14           | 3.3 | 3.47  | 600              | 95               | 40                | 5     | 1  | -3.5                                                     | 0    |
| TPZ3V6C-323 | 3.42           | 3.6 | 3.78  | 600              | 90               | 40                | 5     | 1  | -3.5                                                     | 0    |
| TPZ3V9C-323 | 3.71           | 3.9 | 4.09  | 600              | 90               | 30                | 0.5   | 1  | -3.5                                                     | 0    |
| TPZ4V3C-323 | 4.09           | 4.3 | 4.52  | 600              | 90               | 30                | 0.5   | 1  | -3.5                                                     | 0    |
| TPZ4V7C-323 | 4.47           | 4.7 | 4.94  | 500              | 80               | 15                | 3.0   | 2  | -3.5                                                     | 0.2  |
| TPZ5V1C-323 | 4.85           | 5.1 | 5.36  | 480              | 60               | 15                | 2.0   | 2  | -2.7                                                     | 1.2  |
| TPZ5V6C-323 | 5.32           | 5.6 | 5.88  | 400              | 40               | 10                | 1.0   | 2  | -2                                                       | 2.5  |
| TPZ6V2C-323 | 5.89           | 6.2 | 6.51  | 150              | 9.5              | 5.7               | 2.4   | 4  | 0.4                                                      | 3.7  |
| TPZ6V8C-323 | 6.46           | 6.8 | 7.14  | 76               | 14.2             | 5.7               | 1.6   | 4  | 1.2                                                      | 4.5  |
| TPZ7V5C-323 | 7.13           | 7.5 | 7.88  | 76               | 14.2             | 5.7               | 0.8   | 5  | 2.5                                                      | 5.3  |
| TPZ8V2C-323 | 7.79           | 8.2 | 8.61  | 76               | 14.2             | 5.7               | 0.56  | 5  | 3.2                                                      | 6.2  |
| TPZ9V1C-323 | 8.65           | 9.1 | 9.56  | 95               | 14.2             | 7.6               | 0.4   | 7  | 3.8                                                      | 7.0  |
| TPZ10VC-323 | 9.50           | 10  | 10.50 | 142.5            | 19               | 9.5               | 0.1   | 8  | 4.5                                                      | 8.0  |
| TPZ11VC-323 | 10.45          | 11  | 11.55 | 142.5            | 19               | 9.5               | 0.1   | 8  | 5.4                                                      | 9.0  |
| TPZ12VC-323 | 11.4           | 12  | 12.60 | 150              | 23.7             | 9.5               | 0.1   | 8  | 6.0                                                      | 10.0 |
| TPZ13VC-323 | 12.35          | 13  | 13.65 | 190              | 28.5             | 14.2              | 0.1   | 8  | 7.0                                                      | 11.0 |
| TPZ15VC-323 | 14.25          | 15  | 15.75 | 190              | 28.5             | 19                | 0.1   | 11 | 9.2                                                      | 13.0 |
| TPZ16VC-323 | 15.2           | 16  | 16.80 | 190              | 38               | 19                | 0.1   | 11 | 10.4                                                     | 14.0 |
| TPZ18VC-323 | 17.10          | 18  | 18.90 | 213              | 42.7             | 19                | 0.1   | 13 | 12.4                                                     | 16.0 |
| TPZ20VC-323 | 19.0           | 20  | 21.0  | 213              | 52.2             | 19                | 0.1   | 14 | 14.4                                                     | 18.0 |
| TPZ22VC-323 | 20.9           | 22  | 23.10 | 237              | 52.2             | 23.7              | 0.1   | 15 | 16.4                                                     | 20.0 |

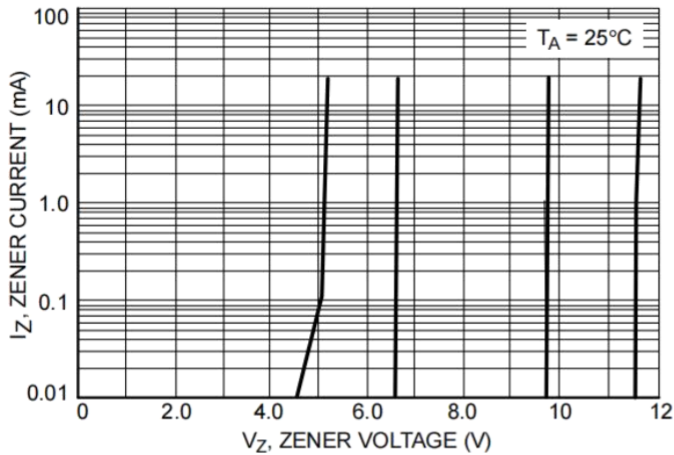
### Electrical Characteristics (TA=25°C unless otherwise specified)

| DEVICE      | VZ(V) @ IZ=5mA |     |       | ZZ @ IZ<br>= 1mA | ZZ @ IZ<br>= 5mA | ZZ @ IZ<br>= 20mA | IR@VR | VR | Typical<br>Temperature<br>Coefficient(mV/<br>°C)@ IZ=5mA |      |
|-------------|----------------|-----|-------|------------------|------------------|-------------------|-------|----|----------------------------------------------------------|------|
|             | MIN            | NOM | MAX   | Ω                |                  |                   | uA    | V  | Min                                                      | Max  |
| TPZ24VC-323 | 22.8           | 24  | 25.2  | 250              | 66.5             | 23.7              | 0.1   | 17 | 18.4                                                     | 22.0 |
| TPZ27VC-323 | 25.65          | 27  | 28.35 | 295              | 75               | 43                | 0.04  | 19 | 21.4                                                     | 25.3 |
| TPZ30VC-323 | 28.50          | 30  | 31.50 | 295              | 75               | 48                | 0.04  | 21 | 24.4                                                     | 29.4 |
| TPZ33VC-323 | 31.35          | 33  | 34.65 | 320              | 75               | 53                | 0.04  | 23 | 27.4                                                     | 33.4 |
| TPZ36VC-323 | 34.20          | 36  | 37.80 | 345              | 85               | 58                | 0.04  | 25 | 30.4                                                     | 37.4 |
| TPZ39VC-323 | 37.05          | 39  | 40.95 | 345              | 125              | 68                | 0.04  | 27 | 33.4                                                     | 41.2 |
| TPZ43VC-323 | 40.85          | 43  | 45.15 | 370              | 145              | 78                | 0.04  | 30 | 37.6                                                     | 46.6 |
| TPZ47VC-323 | 44.65          | 47  | 49.35 | 370              | 165              | 88                | 0.04  | 33 | 42.0                                                     | 51.8 |
| TPZ51VC-323 | 48.45          | 51  | 53.55 | 395              | 175              | 98                | 0.04  | 36 | 46.6                                                     | 57.2 |
| TPZ56VC-323 | 52.2           | 56  | 58.8  | 420              | 195              | 108               | 0.04  | 39 | 52.2                                                     | 63.8 |
| TPZ62VC-323 | 58.9           | 62  | 65.1  | 445              | 210              | 118               | 0.04  | 43 | 58.8                                                     | 71.6 |
| TPZ68VC-323 | 64.6           | 68  | 71.4  | 470              | 235              | 128               | 0.04  | 48 | 65.6                                                     | 79.8 |
| TPZ75VC-323 | 71.25          | 75  | 78.75 | 495              | 250              | 138               | 0.04  | 53 | 73.4                                                     | 88.6 |

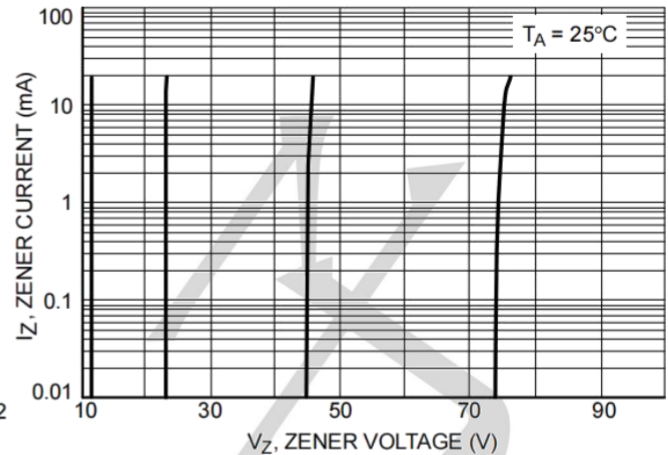
### Typical Characteristics Curves



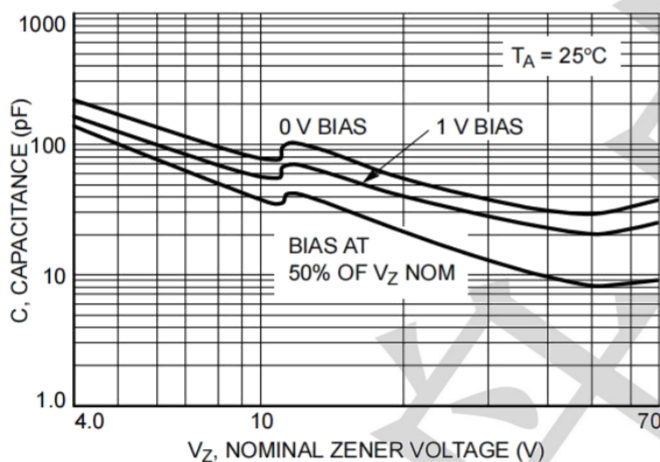
### Typical Characteristics Curves



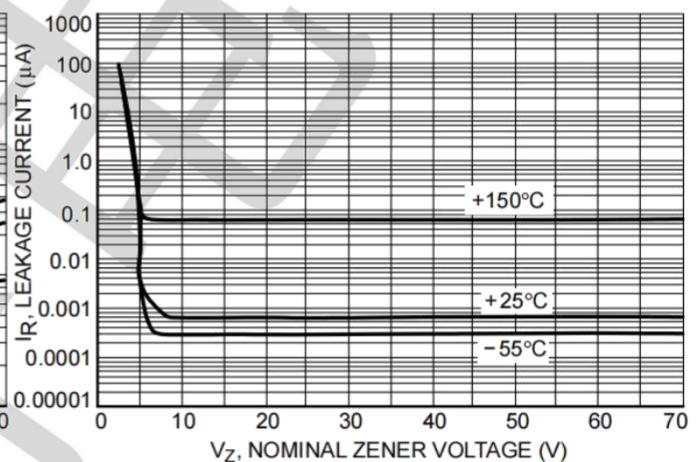
Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)



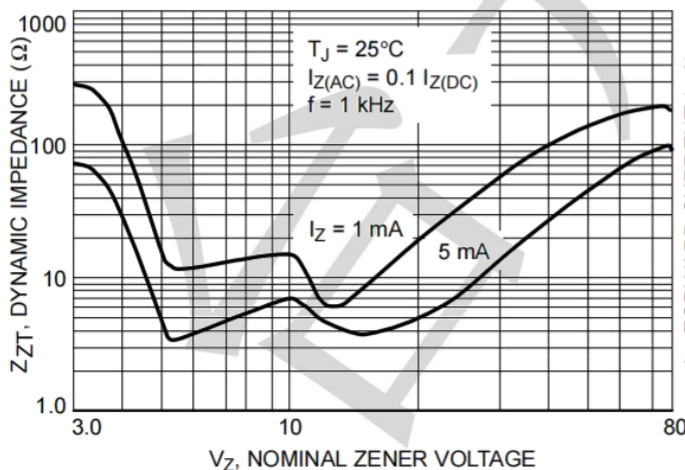
Zener Voltage versus Zener Current  
(12 V to 75 V)



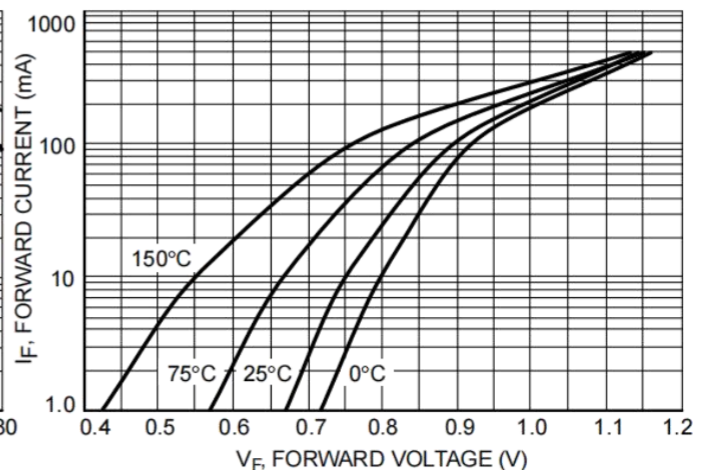
Typical Capacitance



Typical Leakage Current



Effect of Zener Voltage on Zener Impedance

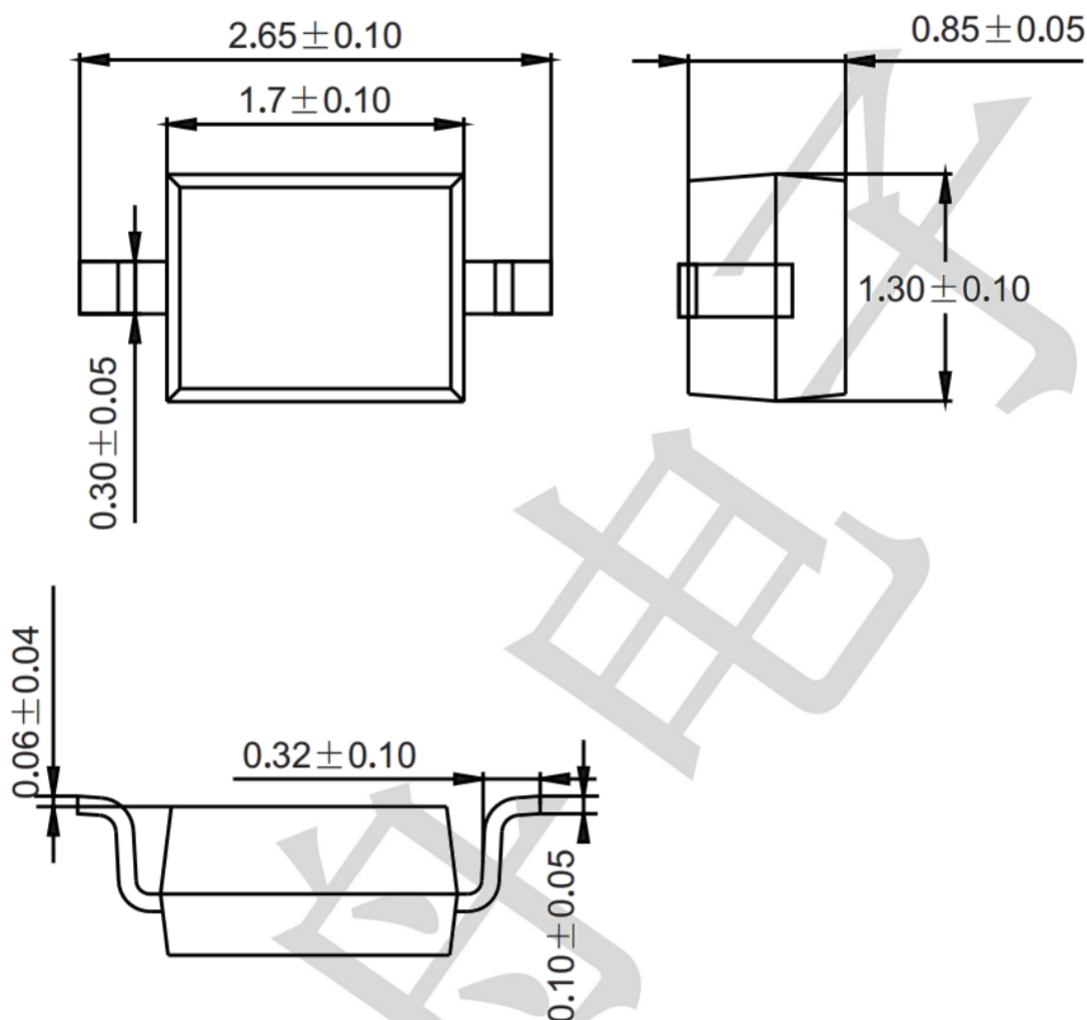


Typical Forward Voltage



**Package Outline Dimensions (unit: mm)**

**SOD323**



**Mounting Pad Layout (unit: mm)**

