



## Zener Diodes

### Features

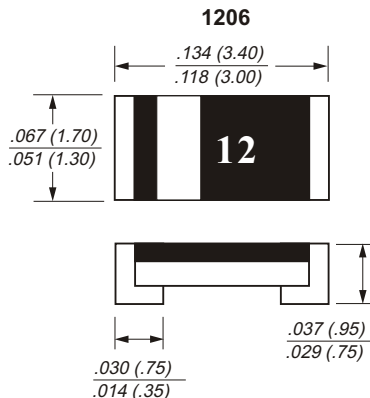
- This diode is also available in other case styles including the 0805 case with the type designation CDZ55C-S-Series.
- Silicon Planar Power Zener Diodes.

### Mechanical Data

Case: 1206

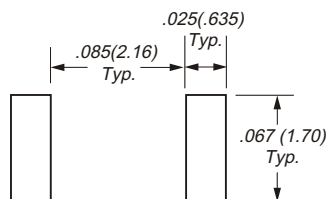
Weight : approx. 10 mg

Marking : Cathode band



Dimensions in inches and (millimeters)

### Mounting Pad Layout



## Maximum Ratings and Thermal Characteristics (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| Parameter                                  | Symbol           | Value       | Unit |
|--------------------------------------------|------------------|-------------|------|
| Power dissipation                          | P <sub>tot</sub> | 500         | mW   |
| Junction temperature                       | T <sub>j</sub>   | 175         | °C   |
| Storage temperature range                  | T <sub>stg</sub> | -65 to +175 | °C   |
| Thermal resistance Junction to ambient air | R <sub>θJA</sub> | 300         | °C/W |

## Electrical Characteristics

| Parameter                               | Symbol         | Max | Unit |
|-----------------------------------------|----------------|-----|------|
| Forward voltage I <sub>F</sub> = 200 mA | V <sub>F</sub> | 1.5 | V    |



## Electrical Characteristics

| Part Number | Marking Code | Nominal Zener Voltage |       | Max Zener Impedance |    |                   |    | Max Reverse Leakage Current |     |
|-------------|--------------|-----------------------|-------|---------------------|----|-------------------|----|-----------------------------|-----|
|             |              | $V_Z @ I_{ZT}$        |       | $Z_{ZT} @ I_{ZT}$   |    | $Z_{ZK} @ I_{ZK}$ |    | $I_R @ V_R$                 |     |
|             |              | Min V                 | Max V | $\Omega$            | mA | $\Omega$          | mA | $\mu A$                     | V   |
| CDZ55C5V1   | 5V1          | 4.8                   | 5.4   | 35                  | 5  | 550               | 1  | 0.1                         | 1   |
| CDZ55C5V6   | 5V6          | 5.2                   | 6     | 25                  | 5  | 450               | 1  | 0.1                         | 1   |
| CDZ55C6V2   | 6V2          | 5.8                   | 6.6   | 10                  | 5  | 200               | 1  | 0.1                         | 2   |
| CDZ55C6V8   | 6V8          | 6.4                   | 7.2   | 8                   | 5  | 150               | 1  | 0.1                         | 3   |
| CDZ55C7V5   | 7V5          | 7                     | 7.9   | 7                   | 5  | 50                | 1  | 0.1                         | 5   |
| CDZ55C8V2   | 8V2          | 7.7                   | 8.7   | 7                   | 5  | 50                | 1  | 0.1                         | 6.2 |
| CDZ55C9V1   | 9V1          | 8.5                   | 9.6   | 10                  | 5  | 50                | 1  | 0.1                         | 6.8 |
| CDZ55C10    | 10           | 9.4                   | 10.6  | 15                  | 5  | 70                | 1  | 0.1                         | 7.5 |
| CDZ55C11    | 11           | 10.4                  | 11.6  | 20                  | 5  | 70                | 1  | 0.1                         | 8.2 |
| CDZ55C12    | 12           | 11.4                  | 12.7  | 20                  | 5  | 90                | 1  | 0.1                         | 9.1 |
| CDZ55C13    | 13           | 12.4                  | 14.1  | 26                  | 5  | 110               | 1  | 0.1                         | 10  |
| CDZ55C15    | 15           | 13.8                  | 15.6  | 30                  | 5  | 110               | 1  | 0.1                         | 11  |
| CDZ55C16    | 16           | 15.3                  | 17.1  | 40                  | 5  | 170               | 1  | 0.1                         | 12  |
| CDZ55C18    | 18           | 16.8                  | 19.1  | 50                  | 5  | 170               | 1  | 0.1                         | 13  |
| CDZ55C20    | 20           | 18.8                  | 21.2  | 55                  | 5  | 220               | 1  | 0.1                         | 15  |
| CDZ55C22    | 22           | 20.8                  | 23.3  | 55                  | 5  | 220               | 1  | 0.1                         | 16  |
| CDZ55C24    | 24           | 22.8                  | 25.6  | 80                  | 5  | 220               | 1  | 0.1                         | 18  |
| CDZ55C27    | 27           | 25.1                  | 28.9  | 80                  | 5  | 220               | 1  | 0.1                         | 20  |
| CDZ55C30    | 30           | 28                    | 32    | 80                  | 5  | 220               | 1  | 0.1                         | 22  |
| CDZ55C33    | 33           | 31                    | 35    | 80                  | 5  | 220               | 1  | 0.1                         | 24  |
| CDZ55C36    | 36           | 34                    | 38    | 80                  | 5  | 220               | 1  | 0.1                         | 27  |



## Typical Characteristics ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

Fig1. Thermal Resistance vs. Lead Length

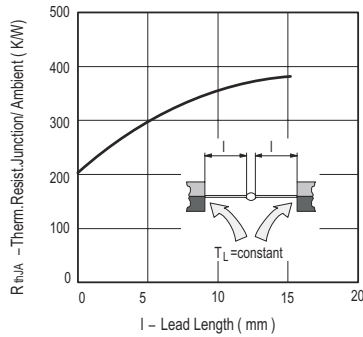


Fig2. Total Power Dissipation vs. Ambient Temperature

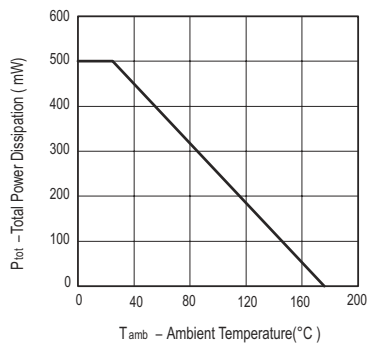
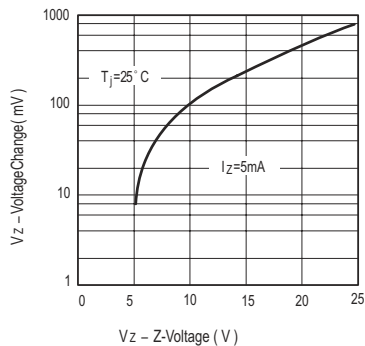
Fig3. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^{\circ}\text{C}$ 

Fig 4. Typical Change of Working Voltage vs. Junction Temperature

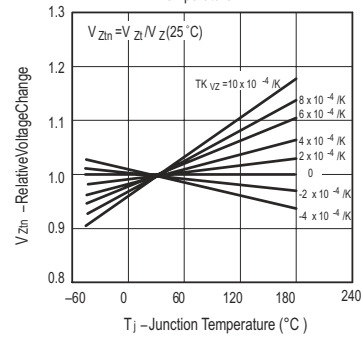
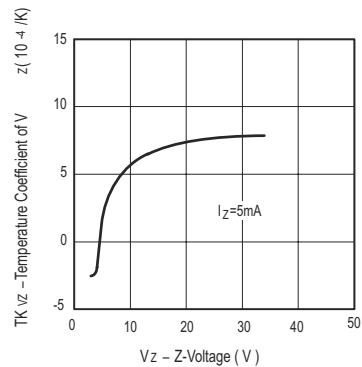
Fig5. Temperature Coefficient of  $V_z$  vs. Z-Voltage

Fig 6. Diode Capacitance vs. Z-Voltage

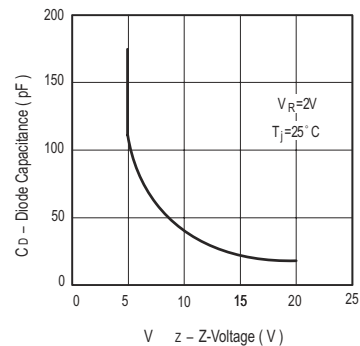




Fig 7. Forward Current vs. Forward Voltage

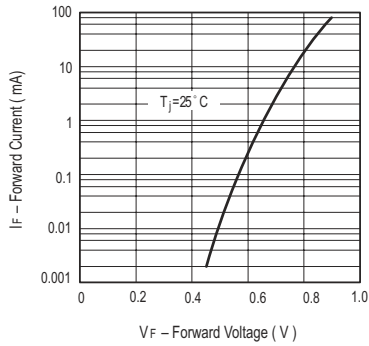


Fig 9. Z-Current vs. Z-Voltage

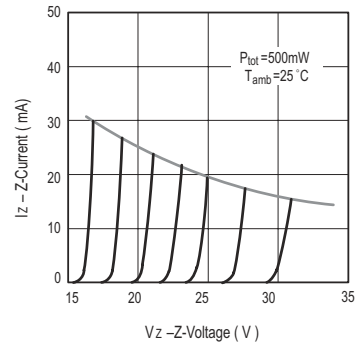


Fig 8. Z-Current vs. Z-Voltage

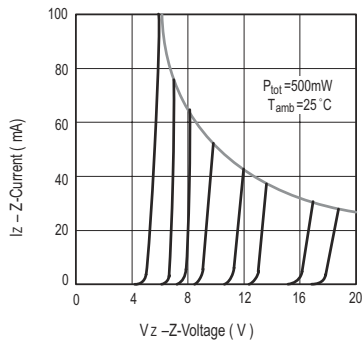


Fig10. Differential Z-Resistance vs. Z-Voltage

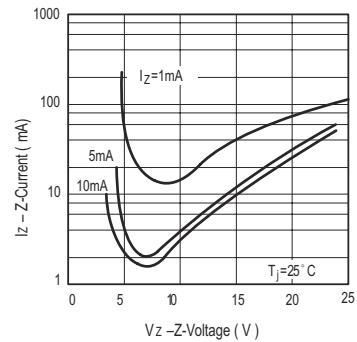
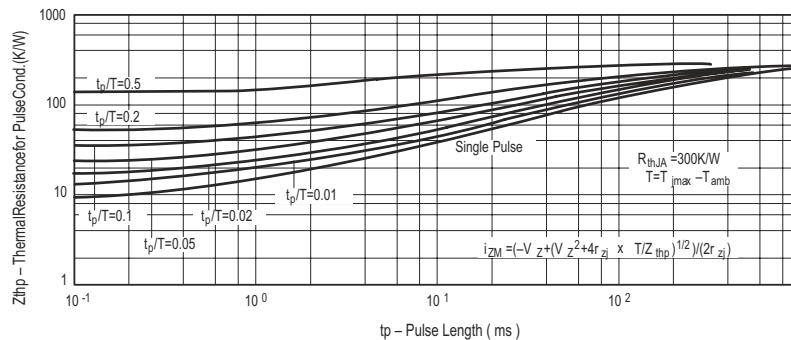


Fig 11. Thermal Response



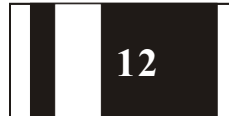


Device outlook

Shanghai plant (front side)



Kunshan plant (front side)



Shanghai plant (back side)



Kunshan plant (back side)





## Suggested thermal profiles for soldering processes

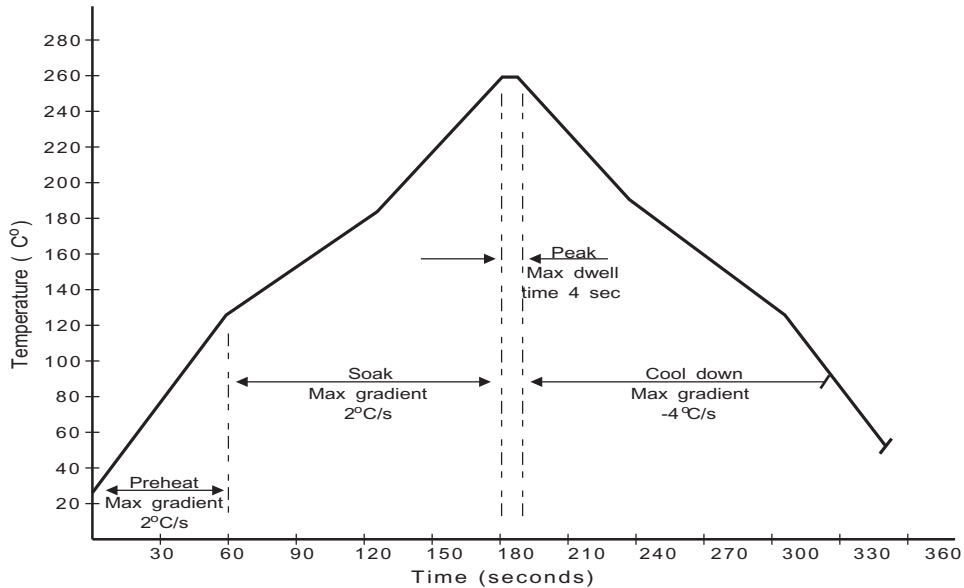


Fig.1 Typical Wave Soldering Thermal Profile

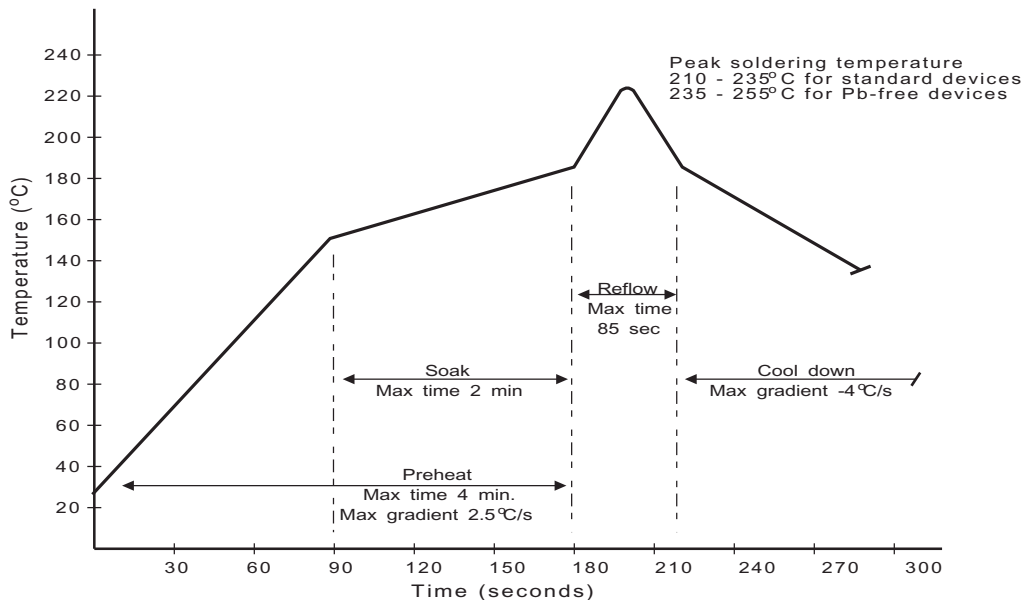


Fig.2 Typical IR Reflow Soldering Thermal Profile