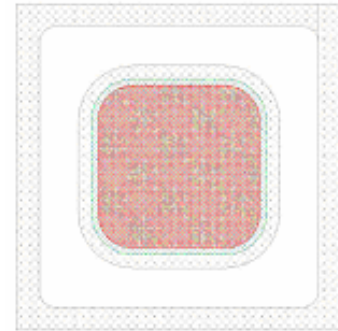
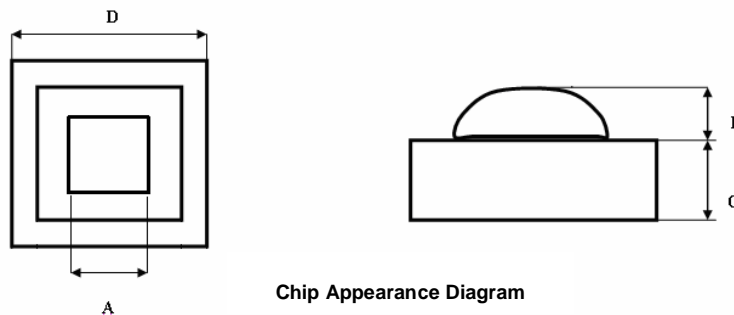


**2CW035XXXVQ-PX SERIES ZENER DIODE CHIPS FOR GLASS SEAL WITH ASYMMETRY LIMITS**
**DESCRIPTION**

- ∅ 2CW035XXXVQ-PX series are low-power zener diode chips for glass seal that fabricated in silicon epitaxial planar technology.
- ∅ The series is asymmetrical regulator voltage chips, that is the upper limit and lower limit is asymmetrical, e.g.  $V_z=3.0V$  chips: the upper limit is 3.25V, the lower limit is 2.95V, the specification is better suitable for customer's using habit
- ∅ For customer convenient selecting regulator voltage in narrow limit. The series divided into 4 types for given regulator voltage and named PA, PB, PC and PD respectively.
- ∅ The chip thickness is 140 $\mu m$ . The top electrode material is Ag bump, and the backside electrode material is Ag.
- ∅ Chip size: 0.35 X 0.35 (mm)<sup>2</sup>.


**2CW035XXXVQ-PX CHIP TOPOGRAPHY**
**2CW035XXXVQ-PX APPEARANCE**

**Chip Appearance Diagram**

| Parameter         | Symbol | Min. | Type | Max. | Unit    |
|-------------------|--------|------|------|------|---------|
| Chip Size         | D      | 280  | --   | 320  | $\mu m$ |
| Chip Thickness    | C      | 120  | --   | 160  | $\mu m$ |
| Bump Size         | A      | 215  | --   | 262  | $\mu m$ |
| Bump Height       | B      | 25   | --   | 60   | $\mu m$ |
| Scribe Line Width | /      | --   | 40   | --   | $\mu m$ |

**ABSOLUTE MAXIMUM RATINGS**

| Characteristics      | Symbol    | Test conditions | Value    | Unit        |
|----------------------|-----------|-----------------|----------|-------------|
| Junction Temperature | $T_j$     | ----            | 175      | $^{\circ}C$ |
| Storage Temperature  | $T_{stg}$ | ----            | -50~+175 | $^{\circ}C$ |

**ELECTRICAL CHARACTERISTICS (For packaged diodes, T<sub>amb</sub>=25°C)**

| Type           | Working Voltage<br>V <sub>Z</sub> @I <sub>Z</sub> =5mA | Dynamic resistance                           |  | Reverse leakage current @T <sub>amb</sub> =25@ V <sub>R</sub> |                    |
|----------------|--|--|--|---|--------------------|
|                |  | Z <sub>zk</sub> (Ω)@<br>I <sub>zk</sub> =1mA | Z <sub>zt</sub> (Ω)@<br>I <sub>zt</sub> =5mA | I <sub>R</sub> (μA)   | V <sub>R</sub> (V) |
| 2CW035XXX1Q-PX | V <sub>Zmin</sub> -V <sub>Zmax</sub> (V)               | max  | max  | max   |                    |
| 2CW035036YQ-PA | 3.47~3.68  | 120  | 1100   | 10  | 1                  |
| 2CW035036YQ-PB | 3.62~3.83  |  |  |   |                    |
| 2CW035039YQ-PA | 3.77~3.98  | 120  | 1200   | 5   | 1                  |
| 2CW035039YQ-PB | 3.92~4.14  |  |  |   |                    |
| 2CW035043YQ-PA | 4.05~4.26  | 120  | 1200   | 5   | 1                  |
| 2CW035043YQ-PB | 4.2~4.4  |  |  |   |                    |
| 2CW035043YQ-PC | 4.34~4.53  |  |  |   |                    |
| 2CW035047YQ-PA | 4.47~4.65  | 100  | 1200   | 5   | 1                  |
| 2CW035047YQ-PB | 4.59~4.77  |  |  |   |                    |
| 2CW035047YQ-PC | 4.71~4.91  |  |  |   |                    |
| 2CW035051YQ-PA | 4.85~5.03  | 70   | 1200   | 5   | 1.5                |
| 2CW035051YQ-PB | 4.97~5.18  |  |  |   |                    |
| 2CW035051YQ-PC | 5.12~5.35  |  |  |   |                    |
| 2CW035056YQ-PA | 5.29~5.52  | 40   | 900  | 5   | 2.5                |
| 2CW035056YQ-PB | 5.46~5.7   |  |  |   |                    |
| 2CW035056YQ-PC | 5.64~5.88  |  |  |   |                    |
| 2CW035062YQ-PA | 5.81~6.06  | 30   | 500  | 5   | 3                  |
| 2CW035062YQ-PB | 5.99~6.24  |  |  |   |                    |
| 2CW035062YQ-PC | 6.16~6.4   |  |  |   |                    |
| 2CW035068YQ-PA | 6.32~6.59  | 25   | 150  | 2   | 3.5                |
| 2CW035068YQ-PB | 6.52~6.79  |  |  |   |                    |
| 2CW035068YQ-PC | 6.7~6.97   |  |  |   |                    |
| 2CW035075YQ-PA | 6.88~7.19  | 25   | 120  | 0.5   | 4                  |
| 2CW035075YQ-PB | 7.11~7.41  |  |  |   |                    |
| 2CW035075YQ-PC | 7.33~7.64  |  |  |   |                    |
| 2CW035082YQ-PA | 7.56~7.9   | 20   | 120  | 0.5   | 5                  |
| 2CW035082YQ-PB | 7.82~8.15  |  |  |   |                    |
| 2CW035082YQ-PC | 8.07~8.41  |  |  |   |                    |
| 2CW035091YQ-PA | 8.33~8.7   | 20   | 120  | 0.5   | 6                  |
| 2CW035091YQ-PB | 8.61~8.99  |  |  |   |                    |
| 2CW035091YQ-PC | 8.89~9.29  |  |  |   |                    |

(To be continued)

(Continued)

| Type           | Working Voltage<br>Vz@Iz=5mA | Dynamic resistance     |                        | Reverse leakage<br>current @Tamb=25@ VR |       |
|----------------|------------------------------|------------------------|------------------------|---|-------|
|                |                              | Zzk(Ω)<br>@<br>Izk=1mA | Zzt(Ω)<br>@<br>Izt=5mA | IR(μA)                                  | VR(V) |
| 2CW035XXXYQ-PX | VZmin-Vzmax(V)               | max                    | max                    | max                                     |       |
| 2CW035100YQ-PA | 9.19~9.59                    | 20                     | 120                    | 0.2                                     | 7     |
| 2CW035100YQ-PB | 9.48~9.9                     |                        |                        |   |       |
| 2CW035100YQ-PC | 9.82~10.3                    |                        |                        |   |       |
| 2CW035110YQ-PA | 10.18~10.63                  | 20                     | 110                    | 0.2                                     | 8     |
| 2CW035110YQ-PB | 10.5~10.95                   |                        |                        |   |       |
| 2CW035110YQ-PC | 10.82~11.26                  |                        |                        |   |       |
| 2CW035120YQ-PA | 11.13~11.63                  | 25                     | 110                    | 0.2                                     | 9     |
| 2CW035120YQ-PB | 11.5~11.92                   |                        |                        |   |       |
| 2CW035120YQ-PC | 11.8~12.3                    |                        |                        |   |       |
| 2CW035130YQ-PA | 12.18~12.71                  | 25                     | 110                    | 0.2                                     | 10    |
| 2CW035130YQ-PB | 12.59~13.16                  |                        |                        |   |       |
| 2CW035130YQ-PC | 13.03~13.62                  |                        |                        |   |       |
| 2CW035150YQ-PA | 13.48~14.09                  | 25                     | 110                    | 0.2                                     | 11    |
| 2CW035150YQ-PB | 13.95~14.56                  |                        |                        |   |       |
| 2CW035150YQ-PC | 14.42~15.02                  |                        |                        |   |       |
| 2CW035160YQ-PA | 14.87~15.5                   | 25                     | 150                    | 0.2                                     | 12    |
| 2CW035160YQ-PB | 15.33~15.96                  |                        |                        |   |       |
| 2CW035160YQ-PC | 15.79~16.5                   |                        |                        |   |       |
| 2CW035180YQ-PA | 16.34~17.06                  | 30                     | 150                    | 0.2                                     | 13    |
| 2CW035180YQ-PB | 16.9~17.67                   |                        |                        |   |       |
| 2CW035180YQ-PC | 17.51~18.3                   |                        |                        |   |       |
| 2CW035200YQ-PA | 18.14~18.96                  | 30                     | 200                    | 0.2                                     | 15    |
| 2CW035200YQ-PB | 18.8~19.68                   |                        |                        |   |       |
| 2CW035200YQ-PC | 19.52~20.45                  |                        |                        |   |       |
| 2CW035220YQ-PA | 20.23~21.08                  | 30                     | 200                    | 0.2                                     | 17    |
| 2CW035220YQ-PB | 20.76~21.65                  |                        |                        |   |       |
| 2CW035220YQ-PC | 21.22~22.09                  |                        |                        |   |       |
| 2CW035220YQ-PD | 21.68~22.61                  |                        |                        |   |       |
| 2CW035240YQ-PA | 22.26~23.12                  | 35                     | 200                    | 0.2                                     | 19    |
| 2CW035240YQ-PB | 22.75~23.73                  |                        |                        |   |       |
| 2CW035240YQ-PC | 23.29~24.27                  |                        |                        |   |       |
| 2CW035240YQ-PD | 23.81~24.81                  |                        |                        |   |       |

(To be continued)

(Continued)

| Type           | Working Voltage<br>Vz@Iz=5mA | Dynamic resistance          |                             | Reverse leakage current @Tamb=25@ VR |       |
|----------------|------------------------------|-----------------------------|-----------------------------|--------------------------------------|-------|
|                |                              | Zzk( $\Omega$ )@<br>Izk=1mA | Zzt( $\Omega$ )@<br>Izt=5mA | IR( $\mu$ A)                         | VR(V) |
| 2CW035XXXYQ-PX | VZmin-Vzmax(V)               | max                         | max                         | max                                  |       |
| 2CW035270YQ-PA | 24.26~25.52                  | 45                          | 250                         | 0.2                                  | 21    |
| 2CW035270YQ-PB | 24.97~26.26                  |                             |                             |                                      |       |
| 2CW035270YQ-PC | 25.63~26.95                  |                             |                             |                                      |       |
| 2CW035270YQ-PD | 26.29~27.64                  |                             |                             |                                      |       |
| 2CW035300YQ-PA | 26.99~28.39                  | 55                          | 250                         | 0.2                                  | 23    |
| 2CW035300YQ-PB | 27.7~29.13                   |                             |                             |                                      |       |
| 2CW035300YQ-PC | 28.36~29.82                  |                             |                             |                                      |       |
| 2CW035300YQ-PD | 29.02~30.51                  |                             |                             |                                      |       |
| 2CW035330YQ-PA | 29.68~31.22                  | 65                          | 250                         | 0.2                                  | 25    |
| 2CW035330YQ-PB | 30.32~31.88                  |                             |                             |                                      |       |
| 2CW035330YQ-PC | 30.9~32.5                    |                             |                             |                                      |       |
| 2CW035330YQ-PD | 31.49~33.11                  |                             |                             |                                      |       |
| 2CW035360YQ-PA | 32.14~33.79                  | 75                          | 250                         | 0.2                                  | 27    |
| 2CW035360YQ-PB | 32.79~34.49                  |                             |                             |                                      |       |
| 2CW035360YQ-PC | 33.4~35.13                   |                             |                             |                                      |       |
| 2CW035360YQ-PD | 34.01~35.77                  |                             |                             |                                      |       |

Forward Voltage VF= 1.0 V Maximum @ IF = 100 mA for all 2CW035XXXYQ-PX series.