

## Silicon Planar Zener Diodes

### Feature:

- Hermetically sealed, glass silicon diodes.



## Absolute Maximum Ratings ( $T_a=25^{\circ}\text{C}$ )

| Description                                                                         | Symbol                 | Value        | Unit |
|-------------------------------------------------------------------------------------|------------------------|--------------|------|
| Average Forward Current (averaged Over any 20 ms period)                            | I <sub>F(av)</sub>     | 250          | mA   |
| Repetitive Peak Forward Current                                                     | I <sub>FRM</sub>       | 250          |      |
| Total Power Dissipation up to T <sub>flange</sub> = 50°C                            | P <sub>tot</sub>       | 500          | mW   |
| Up to Ta = 50°C and Mounted on a Ceramic Substrate of 10mm x 10mm x 0.6mm           | P <sub>tot</sub>       | 400          |      |
| Non-Repetitive Peak Reverse Power Dissipation t = 100μs, T <sub>j</sub> = 150°C     | P <sub>ZSM</sub>       | 30           | W    |
| Storage Temperature                                                                 | T <sub>stg</sub>       | - 65 to +200 | °C   |
| Junction Temperature                                                                | T <sub>j</sub>         | 200          |      |
| Thermal Resistance                                                                  |                        |              |      |
| From Junction to tie-point (flanges)                                                | R <sub>th (j-tp)</sub> | 0.3          | K/mW |
| From Junction to Ambient when Mounted on a Ceramic Substrate of 10mm x 10mm x 0.6mm | R <sub>th (j-a)</sub>  | 0.38         |      |

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

| Working Voltage*<br>+/- 5%<br>$V_Z$ (V)<br>at $I_{Z\text{test}} = 5\text{mA}$ |         | Differential *<br>Resistance<br>$r_{\text{diff}}(\Omega)$<br>at $I_{Z\text{test}} = 5\text{mA}$ | Temperature<br>Coefficient<br>$S_Z(\text{mV/K})$<br>at $I_{Z\text{test}} = 5\text{mA}$ |         | Differential<br>Resistance<br>$r_{\text{diff}}(\Omega)$<br>at $I_{Z\text{test}} = 1\text{mA}$ | $I_R$ at<br>$T_a$<br>$25^\circ\text{C}$<br>( $\mu\text{A}$ ) | $V_R$<br>(V) | Part Number |
|-------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------|-------------|
| Minimum                                                                       | Maximum | Maximum                                                                                         | Minimum                                                                                | Maximum | Maximum                                                                                       | Maximum                                                      |              |             |
| 9.4                                                                           | 10.6    | 20                                                                                              | 4.5                                                                                    | 8       | 150                                                                                           | 0.2                                                          | 7            | BZV55C10    |
| 10.4                                                                          | 11.6    | 20                                                                                              | 5.4                                                                                    | 9       | 150                                                                                           | 0.1                                                          | 8            | BZV55C11    |
| 11.4                                                                          | 12.7    | 25                                                                                              | 6                                                                                      | 10      | 150                                                                                           | 0.1                                                          | 8            | BZV55C12    |
| 12.4                                                                          | 14.1    | 30                                                                                              | 7                                                                                      | 11      | 170                                                                                           | 0.1                                                          | 8            | BZV55C13    |
| 13.8                                                                          | 15.6    | 30                                                                                              | 9.2                                                                                    | 13      | 200                                                                                           | 0.05                                                         | 10.5         | BZV55C15    |
| 15.3                                                                          | 17.1    | 40                                                                                              | 10.4                                                                                   | 14      | 200                                                                                           | 0.05                                                         | 11.2         | BZV55C16    |
| 16.8                                                                          | 19.1    | 45                                                                                              | 12.4                                                                                   | 16      | 225                                                                                           | 0.05                                                         | 12.6         | BZV55C18    |
| 18.8                                                                          | 21.2    | 55                                                                                              | 14.4                                                                                   | 18      | 225                                                                                           | 0.05                                                         | 14           | BZV55C20    |
| 20.8                                                                          | 23.3    | 55                                                                                              | 16.4                                                                                   | 20      | 250                                                                                           | 0.05                                                         | 15.4         | BZV55C22    |
| 22.8                                                                          | 25.6    | 70                                                                                              | 18.4                                                                                   | 22      | 250                                                                                           | 0.05                                                         | 16.8         | BZV55C24    |
| at $I_{Z\text{test}} = 2\text{mA}$                                            |         | at $I_{Z\text{test}} = 2\text{mA}$                                                              | at $I_{Z\text{test}} = 2\text{mA}$                                                     |         | at $I_{Z\text{test}} = 0.5\text{mA}$                                                          |                                                              |              |             |
| 25.1                                                                          | 28.9    | 80                                                                                              | 21.4                                                                                   | 25.3    | 300                                                                                           | 0.05                                                         | 18.9         | BZV55C27    |
| 28                                                                            | 32      | 80                                                                                              | 24.4                                                                                   | 29.4    | 300                                                                                           | 0.05                                                         | 21           | BZV55C30    |
| 31                                                                            | 35      | 80                                                                                              | 27.4                                                                                   | 33.4    | 325                                                                                           | 0.05                                                         | 23.1         | BZV55C33    |
| 34                                                                            | 38      | 90                                                                                              | 30.4                                                                                   | 37.4    | 350                                                                                           | 0.05                                                         | 25.2         | BZV55C36    |
| 3.4                                                                           | 3.8     | 90                                                                                              | -3.5                                                                                   | 0       | 600                                                                                           | 5                                                            | 1            | BZV55C3V6   |
| 3.7                                                                           | 4.1     | 90                                                                                              | -3.5                                                                                   | 0       | 600                                                                                           | 3                                                            | 1            | BZV55C3V9   |
| 40                                                                            | 46      | 150                                                                                             | 37.6                                                                                   | 46.6    | 375                                                                                           | 0.05                                                         | 30.1         | BZV55C43    |
| 44                                                                            | 50      | 170                                                                                             | 42                                                                                     | 51.8    | 375                                                                                           | 0.05                                                         | 32.9         | BZV55C47    |
| 4                                                                             | 4.6     | 90                                                                                              | -3.5                                                                                   | 0       | 600                                                                                           | 3                                                            | 1            | BZV55C4V3   |
| 4.4                                                                           | 5       | 80                                                                                              | -3.5                                                                                   | 0.2     | 500                                                                                           | 3                                                            | 2            | BZV55C 4V7  |
| 48                                                                            | 54      | 180                                                                                             | 46.6                                                                                   | 57.2    | 400                                                                                           | 0.05                                                         | 35.7         | BZV55C51    |
| 4.8                                                                           | 5.4     | 60                                                                                              | -2.7                                                                                   | 1.2     | 480                                                                                           | 2                                                            | 2            | BZV55C 5V1  |
| 5.2                                                                           | 6       | 40                                                                                              | -2                                                                                     | 2.5     | 400                                                                                           | 1                                                            | 2            | BZV55C 5V6  |
| 5.8                                                                           | 6.6     | 10                                                                                              | 0.4                                                                                    | 3.7     | 150                                                                                           | 3                                                            | 4            | BZV55C 6V2  |
| 7                                                                             | 7.9     | 15                                                                                              | 2.5                                                                                    | 5.3     | 80                                                                                            | 1                                                            | 5            | BZV55C 7V5  |
| 7.7                                                                           | 8.7     | 15                                                                                              | 3.2                                                                                    | 6.2     | 80                                                                                            | 0.7                                                          | 5            | BZV55C 8V2  |
| 8.5                                                                           | 9.6     | 15                                                                                              | 3.8                                                                                    | 7       | 100                                                                                           | 0.5                                                          | 6            | BZV55C 9V1  |

\*Pulse test:  $20\text{ms} < t_p < 50\text{ms}$

## Notes:

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