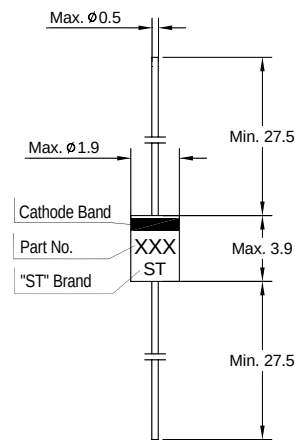


# HC Series

## SILICON PLANAR ZENER DIODES



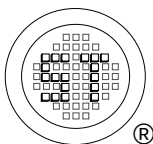
Glass Case JEDEC DO-35  
Dimensions in mm

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

| Parameter                                                                                                | Symbol           | Value             | Unit               |
|----------------------------------------------------------------------------------------------------------|------------------|-------------------|--------------------|
| Power Dissipation                                                                                        | $P_{\text{tot}}$ | 500 <sup>1)</sup> | mW                 |
| Junction Temperature                                                                                     | $T_j$            | 175               | $^{\circ}\text{C}$ |
| Storage Temperature Range                                                                                | $T_s$            | - 65 to + 175     | $^{\circ}\text{C}$ |
| <sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case. |                  |                   |                    |

### Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$

| Parameter                                                                                                | Symbol           | Max.              | Unit |
|----------------------------------------------------------------------------------------------------------|------------------|-------------------|------|
| Thermal Resistance Junction to Ambient Air                                                               | $R_{\text{thA}}$ | 0.3 <sup>1)</sup> | K/mW |
| <sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case. |                  |                   |      |



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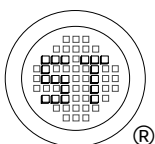
# HC Series

## Characteristics at $T_j = 25\text{ }^{\circ}\text{C}$

| Type   | Zener Voltage |          |               | Dynamic Resistance |               | Reverse Leakage Current ( $I_R$ at $V_R$ ) |           |
|--------|---------------|----------|---------------|--------------------|---------------|--------------------------------------------|-----------|
|        | Min. (V)      | Max. (V) | $I_{ZT}$ (mA) | Ohm at $I_{ZT}$    | $I_{ZT}$ (mA) | $I_R$ ( $\mu\text{A}$ ) Max.               | $V_R$ (V) |
| 2V2HC  | 2.09          | 2.41     | 20            | 120                | 20            | 120                                        | 0.7       |
| 2V2HCA | 2.12          | 2.3      |               |                    |               |                                            |           |
| 2V2HCB | 2.22          | 2.41     |               |                    |               |                                            |           |
| 2V4HC  | 2.3           | 2.64     | 20            | 120                | 20            | 120                                        | 1         |
| 2V4HCA | 2.33          | 2.52     |               |                    |               |                                            |           |
| 2V4HCB | 2.43          | 2.63     |               |                    |               |                                            |           |
| 2V7HC  | 2.5           | 2.9      | 20            | 100                | 20            | 100                                        | 1         |
| 2V7HCA | 2.54          | 2.75     |               |                    |               |                                            |           |
| 2V7HCB | 2.69          | 2.91     |               |                    |               |                                            |           |
| 3V0HC  | 2.8           | 3.2      | 20            | 80                 | 20            | 50                                         | 1         |
| 3V0HCA | 2.85          | 3.07     |               |                    |               |                                            |           |
| 3V0HCB | 3.01          | 3.22     |               |                    |               |                                            |           |
| 3V3HC  | 3.1           | 3.5      | 20            | 70                 | 20            | 20                                         | 1         |
| 3V3HCA | 3.16          | 3.38     |               |                    |               |                                            |           |
| 3V3HCB | 3.32          | 3.53     |               |                    |               |                                            |           |
| 3V6HC  | 3.4           | 3.8      | 20            | 60                 | 20            | 10                                         | 1         |
| 3V6HCA | 3.47          | 3.68     |               |                    |               |                                            |           |
| 3V6HCB | 3.62          | 3.83     |               |                    |               |                                            |           |
| 3V9HC  | 3.7           | 4.1      | 20            | 50                 | 20            | 5                                          | 1         |
| 3V9HCA | 3.77          | 3.98     |               |                    |               |                                            |           |
| 3V9HCB | 3.92          | 4.14     |               |                    |               |                                            |           |
| 4V3HC  | 4             | 4.5      | 20            | 40                 | 20            | 5                                          | 1         |
| 4V3HCA | 4.05          | 4.26     |               |                    |               |                                            |           |
| 4V3HCB | 4.2           | 4.4      |               |                    |               |                                            |           |
| 4V3HCC | 4.34          | 4.53     | 20            | 25                 | 20            | 5                                          | 1         |
| 4V7HC  | 4.4           | 4.9      |               |                    |               |                                            |           |
| 4V7HCA | 4.47          | 4.65     |               |                    |               |                                            |           |
| 4V7HCB | 4.59          | 4.77     | 20            | 13                 | 20            | 5                                          | 2.5       |
| 4V7HCC | 4.71          | 4.91     |               |                    |               |                                            |           |
| 5V1HC  | 4.8           | 5.4      |               |                    |               |                                            |           |
| 5V1HCA | 4.85          | 5.03     | 20            | 20                 | 20            | 5                                          | 1.5       |
| 5V1HCB | 4.97          | 5.18     |               |                    |               |                                            |           |
| 5V1HCC | 5.12          | 5.35     |               |                    |               |                                            |           |
| 5V6HC  | 5.3           | 6        | 20            | 13                 | 20            | 5                                          | 2.5       |
| 5V6HCA | 5.29          | 5.52     |               |                    |               |                                            |           |
| 5V6HCB | 5.46          | 5.7      |               |                    |               |                                            |           |
| 5V6HCC | 5.64          | 5.88     |               |                    |               |                                            |           |

<sup>1)</sup> Tested with pulse  $t_p = 20\text{ ms}$ .

<sup>2)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



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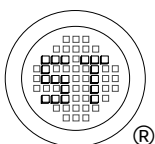
# HC Series

## Characteristics at $T_j = 25^\circ\text{C}$

| Type   | Zener Voltage |          | $I_{ZT}$ (mA) | Dynamic Resistance |               | Reverse Leakage Current ( $I_R$ at $V_R$ ) |           |
|--------|---------------|----------|---------------|--------------------|---------------|--------------------------------------------|-----------|
|        | Min. (V)      | Max. (V) |               | Ohm at $I_{ZT}$    | $I_{ZT}$ (mA) | $I_R$ ( $\mu\text{A}$ ) Max.               | $V_R$ (V) |
| 6V2HC  | 5.8           | 6.6      | 20            | 10                 | 20            | 5                                          | 3         |
| 6V2HCA | 5.81          | 6.06     |               |                    |               |                                            |           |
| 6V2HCB | 5.99          | 6.24     |               |                    |               |                                            |           |
| 6V2HCC | 6.16          | 6.4      |               |                    |               |                                            |           |
| 6V8HC  | 6.4           | 7.2      | 20            | 8                  | 20            | 2                                          | 3.5       |
| 6V8HCA | 6.32          | 6.59     |               |                    |               |                                            |           |
| 6V8HCB | 6.52          | 6.79     |               |                    |               |                                            |           |
| 6V8HCC | 6.7           | 6.97     |               |                    |               |                                            |           |
| 7V5HC  | 7             | 7.9      | 20            | 8                  | 20            | 0.5                                        | 4         |
| 7V5HCA | 6.88          | 7.19     |               |                    |               |                                            |           |
| 7V5HCB | 7.11          | 7.41     |               |                    |               |                                            |           |
| 7V5HCC | 7.33          | 7.64     |               |                    |               |                                            |           |
| 8V2HC  | 7.7           | 8.7      | 20            | 8                  | 20            | 0.5                                        | 5         |
| 8V2HCA | 7.56          | 7.9      |               |                    |               |                                            |           |
| 8V2HCB | 7.82          | 8.15     |               |                    |               |                                            |           |
| 8V2HCC | 8.07          | 8.41     |               |                    |               |                                            |           |
| 9V1HC  | 8.5           | 9.6      | 20            | 8                  | 20            | 0.5                                        | 6         |
| 9V1HCA | 8.33          | 8.7      |               |                    |               |                                            |           |
| 9V1HCB | 8.61          | 8.99     |               |                    |               |                                            |           |
| 9V1HCC | 8.89          | 9.29     |               |                    |               |                                            |           |
| 10HC   | 9.4           | 10.9     | 20            | 8                  | 20            | 0.2                                        | 7         |
| 10HCA  | 9.19          | 9.59     |               |                    |               |                                            |           |
| 10HCB  | 9.48          | 9.9      |               |                    |               |                                            |           |
| 10HCC  | 9.82          | 10.3     |               |                    |               |                                            |           |
| 11HC   | 10.4          | 11.6     | 10            | 10                 | 10            | 0.2                                        | 8         |
| 11HCA  | 10.18         | 10.63    |               |                    |               |                                            |           |
| 11HCB  | 10.5          | 10.95    |               |                    |               |                                            |           |
| 11HCC  | 10.82         | 11.26    |               |                    |               |                                            |           |
| 12HC   | 11.4          | 12.6     | 10            | 12                 | 10            | 0.2                                        | 9         |
| 12HCA  | 11.13         | 11.63    |               |                    |               |                                            |           |
| 12HCB  | 11.5          | 11.92    |               |                    |               |                                            |           |
| 12HCC  | 11.8          | 12.3     |               |                    |               |                                            |           |
| 13HC   | 12.4          | 14.1     | 10            | 14                 | 10            | 0.2                                        | 10        |
| 13HCA  | 12.18         | 12.71    |               |                    |               |                                            |           |
| 13HCB  | 12.59         | 13.16    |               |                    |               |                                            |           |
| 13HCC  | 13.03         | 13.62    |               |                    |               |                                            |           |
| 15HC   | 13.8          | 15.6     | 10            | 16                 | 10            | 0.2                                        | 11        |
| 15HCA  | 13.48         | 14.09    |               |                    |               |                                            |           |
| 15HCB  | 13.95         | 14.56    |               |                    |               |                                            |           |
| 15HCC  | 14.42         | 15.52    |               |                    |               |                                            |           |

<sup>1)</sup> Tested with pulse  $t_p = 20$  ms.

<sup>2)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



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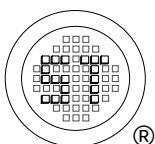
# HC Series

## Characteristics at $T_j = 25\text{ }^{\circ}\text{C}$

| Type  | Zener Voltage |          | $I_{ZT}$ (mA) | Dynamic Resistance |               | Reverse Leakage Current ( $I_R$ at $V_R$ ) |           |
|-------|---------------|----------|---------------|--------------------|---------------|--------------------------------------------|-----------|
|       | Min. (V)      | Max. (V) |               | Ohm at $I_{ZT}$    | $I_{ZT}$ (mA) | $I_R$ ( $\mu\text{A}$ ) Max.               | $V_R$ (V) |
| 16HC  | 15.3          | 17.1     | 10            | 18                 | 10            | 0.2                                        | 12        |
| 16HCA | 14.87         | 15.5     |               |                    |               |                                            |           |
| 16HCB | 15.33         | 15.96    |               |                    |               |                                            |           |
| 16HCC | 15.79         | 16.5     |               |                    |               |                                            |           |
| 18HC  | 16.8          | 19.1     | 10            | 23                 | 10            | 0.2                                        | 13        |
| 18HCA | 16.34         | 17.06    |               |                    |               |                                            |           |
| 18HCB | 16.9          | 17.67    |               |                    |               |                                            |           |
| 18HCC | 17.51         | 18.3     |               |                    |               |                                            |           |
| 20HC  | 18.8          | 21.6     | 10            | 28                 | 10            | 0.2                                        | 15        |
| 20HCA | 18.11         | 18.92    |               |                    |               |                                            |           |
| 20HCB | 18.73         | 19.57    |               |                    |               |                                            |           |
| 20HCC | 19.38         | 20.22    |               |                    |               |                                            |           |
| 20HCD | 19.88         | 20.72    |               |                    |               |                                            |           |
| 22HC  | 20.8          | 23.3     | 5             | 30                 | 5             | 0.2                                        | 17        |
| 22HCA | 20.23         | 21.08    |               |                    |               |                                            |           |
| 22HCB | 20.76         | 21.65    |               |                    |               |                                            |           |
| 22HCC | 21.22         | 22.09    |               |                    |               |                                            |           |
| 22HCD | 21.68         | 22.61    |               |                    |               |                                            |           |
| 24HC  | 21.8          | 25.6     | 5             | 35                 | 5             | 0.2                                        | 19        |
| 24HCA | 22.26         | 23.12    |               |                    |               |                                            |           |
| 24HCB | 22.75         | 23.73    |               |                    |               |                                            |           |
| 24HCC | 23.29         | 24.27    |               |                    |               |                                            |           |
| 24HCD | 23.81         | 24.81    |               |                    |               |                                            |           |
| 27HC  | 25.1          | 28.9     | 5             | 45                 | 5             | 0.2                                        | 21        |
| 27HCA | 24.26         | 25.52    |               |                    |               |                                            |           |
| 27HCB | 24.97         | 26.26    |               |                    |               |                                            |           |
| 27HCC | 25.63         | 26.95    |               |                    |               |                                            |           |
| 27HCD | 26.29         | 27.64    |               |                    |               |                                            |           |
| 30HC  | 28            | 32       | 5             | 55                 | 5             | 0.2                                        | 23        |
| 30HCA | 26.99         | 28.39    |               |                    |               |                                            |           |
| 30HCB | 27.7          | 29.13    |               |                    |               |                                            |           |
| 30HCC | 28.36         | 29.82    |               |                    |               |                                            |           |
| 30HCD | 29.02         | 30.51    |               |                    |               |                                            |           |
| 33HC  | 31            | 35       | 5             | 65                 | 5             | 0.2                                        | 25        |
| 33HCA | 29.68         | 31.22    |               |                    |               |                                            |           |
| 33HCB | 30.32         | 31.88    |               |                    |               |                                            |           |
| 33HCC | 30.9          | 32.5     |               |                    |               |                                            |           |
| 33HCD | 31.49         | 33.11    |               |                    |               |                                            |           |

<sup>1)</sup> Tested with pulse  $t_p = 20\text{ ms}$ .

<sup>2)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



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