

HS Series SILICON PLANAR ZENER DIODE

Silicon Planar Zener Diodes



Glass case JEDEC DO-35

Dimensions in mm

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

| | Symbol | Value | Unit |
|---------------------------------------------------------------------------------------------------------|-----------|-------------------|------------------|
| Zener Current see Table "Characteristics" | | | |
| Power Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$ | P_{tot} | 500 ¹⁾ | mW |
| Junction Temperature | T_j | 175 | $^\circ\text{C}$ |
| Storage Temperature Range | T_s | -55 to + 175 | $^\circ\text{C}$ |
| ¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case | | | |

Characteristics at $T_{amb} = 25\text{ }^\circ\text{C}$

| | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------------------------------------------------------------------------------------|-----------|------|------|-------------------|------|
| Thermal Resistance Junction to Ambient Air | R_{thA} | - | - | 0.3 ¹⁾ | K/mW |
| Forward Voltage at $I_F = 100\text{ mA}$ | V_F | - | - | 1 | V |
| ¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case. | | | | | |



SEMTECH ELECTRONICS LTD.
(wholly owned subsidiary of **HONEY TECHNOLOGY LTD.**)



HS Series SILICON PLANAR ZENER DIODE

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 (μA) Max. | V_R (V) |
| 2.0 HS | 1.88 | 2.20 | 5 | 100 | 5 | 120 | 0.5 |
| 2.0 HSA | 1.88 | 2.10 | | | | | |
| 2.0 HSB | 2.02 | 2.20 | | | | | |
| 2.2 HS | 2.12 | 2.41 | 5 | 100 | 5 | 120 | 0.7 |
| 2.2 HSA | 2.12 | 2.30 | | | | | |
| 2.2 HSB | 2.22 | 2.41 | | | | | |
| 2.4 HS | 2.33 | 2.63 | 5 | 100 | 5 | 120 | 1.0 |
| 2.4 HSA | 2.33 | 2.52 | | | | | |
| 2.4 HSB | 2.43 | 2.63 | | | | | |
| 2.7 HS | 2.54 | 2.91 | 5 | 110 | 5 | 100 | 1.0 |
| 2.7 HSA | 2.54 | 2.75 | | | | | |
| 2.7 HSB | 2.69 | 2.91 | | | | | |
| 3.0 HS | 2.85 | 3.22 | 5 | 120 | 5 | 50 | 1.0 |
| 3.0 HSA | 2.85 | 3.07 | | | | | |
| 3.0 HSB | 3.01 | 3.22 | | | | | |
| 3.3 HS | 3.16 | 3.53 | 5 | 120 | 5 | 20 | 1.0 |
| 3.3 HSA | 3.16 | 3.38 | | | | | |
| 3.3 HSB | 3.32 | 3.53 | | | | | |
| 3.6 HS | 3.47 | 3.83 | 5 | 120 | 5 | 10 | 1.0 |
| 3.6 HSA | 3.47 | 3.68 | | | | | |
| 3.6 HSB | 3.62 | 3.83 | | | | | |
| 3.9 HS | 3.77 | 4.14 | 5 | 120 | 5 | 5 | 1.0 |
| 3.9 HSA | 3.77 | 3.98 | | | | | |
| 3.9 HSB | 3.92 | 4.14 | | | | | |
| 4.3 HS | 4.05 | 4.53 | 5 | 120 | 5 | 5 | 1.0 |
| 4.3 HSA | 4.05 | 4.26 | | | | | |
| 4.3 HSB | 4.20 | 4.40 | | | | | |
| 4.3 HSC | 4.34 | 4.53 | | | | | |
| 4.7 HS | 4.47 | 4.91 | 5 | 100 | 5 | 5 | 1.0 |
| 4.7 HSA | 4.47 | 4.65 | | | | | |
| 4.7 HSB | 4.59 | 4.77 | | | | | |
| 4.7 HSC | 4.71 | 4.91 | | | | | |
| 5.1 HS | 4.85 | 5.35 | 5 | 70 | 5 | 5 | 1.5 |
| 5.1 HSA | 4.85 | 5.03 | | | | | |
| 5.1 HSB | 4.97 | 5.18 | | | | | |
| 5.1 HSC | 5.12 | 5.35 | | | | | |
| 5.6 HS | 5.29 | 5.88 | 5 | 40 | 5 | 5 | 2.5 |
| 5.6 HSA | 5.29 | 5.52 | | | | | |
| 5.6 HSB | 5.46 | 5.70 | | | | | |
| 5.6 HSC | 5.64 | 5.88 | | | | | |
| 6.2 HS | 5.81 | 6.40 | 5 | 30 | 5 | 5 | 3.0 |
| 6.2 HSA | 5.81 | 6.06 | | | | | |
| 6.2 HSB | 5.99 | 6.24 | | | | | |
| 6.2 HSC | 6.16 | 6.40 | | | | | |

¹⁾ Tested with pulse $t_p = 40\text{ ms}$.

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



SEMTECH ELECTRONICS LTD.
(wholly owned subsidiary of HONEY TECHNOLOGY LTD.)



HS Series SILICON PLANAR ZENER DIODE

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 (uA) Max. | V_R (V) |
| 6.8 HS | 6.32 | 6.97 | 5 | 25 | 5 | 2 | 3.5 |
| 6.8 HSA | 6.32 | 6.59 | | | | | |
| 6.8 HSB | 6.52 | 6.79 | | | | | |
| 6.8 HSC | 6.70 | 6.97 | | | | | |
| 7.5 HS | 6.88 | 7.64 | 5 | 25 | 5 | 0.5 | 4.0 |
| 7.5 HSA | 6.88 | 7.19 | | | | | |
| 7.5 HSB | 7.11 | 7.41 | | | | | |
| 7.5 HSC | 7.33 | 7.64 | | | | | |
| 8.2 HS | 7.56 | 8.41 | 5 | 20 | 5 | 0.5 | 5.0 |
| 8.2 HSA | 7.56 | 7.90 | | | | | |
| 8.2 HSB | 7.82 | 8.15 | | | | | |
| 8.2 HSC | 8.07 | 8.41 | | | | | |
| 9.1 HS | 8.33 | 9.29 | 5 | 20 | 5 | 0.5 | 6.0 |
| 9.1 HSA | 8.33 | 8.70 | | | | | |
| 9.1 HSB | 8.61 | 8.99 | | | | | |
| 9.1 HSC | 8.89 | 9.29 | | | | | |
| 10 HS | 9.19 | 10.30 | 5 | 20 | 5 | 0.2 | 7.0 |
| 10 HSA | 9.19 | 9.59 | | | | | |
| 10 HSB | 9.48 | 9.90 | | | | | |
| 10 HSC | 9.82 | 10.30 | | | | | |
| 11 HS | 10.18 | 11.26 | 5 | 20 | 5 | 0.2 | 8.0 |
| 11 HSA | 10.18 | 10.63 | | | | | |
| 11 HSB | 10.50 | 10.95 | | | | | |
| 11 HSC | 10.82 | 11.26 | | | | | |
| 12 HS | 11.13 | 12.30 | 5 | 25 | 5 | 0.2 | 9.0 |
| 12 HSA | 11.13 | 11.63 | | | | | |
| 12 HSB | 11.50 | 11.92 | | | | | |
| 12 HSC | 11.80 | 12.30 | | | | | |
| 13 HS | 12.18 | 13.62 | 5 | 25 | 5 | 0.2 | 10 |
| 13 HSA | 12.18 | 12.71 | | | | | |
| 13 HSB | 12.59 | 13.16 | | | | | |
| 13 HSC | 13.03 | 13.62 | | | | | |
| 15 HS | 13.48 | 15.02 | 5 | 25 | 5 | 0.2 | 11 |
| 15 HSA | 13.48 | 14.09 | | | | | |
| 15 HSB | 13.95 | 14.56 | | | | | |
| 15 HSC | 14.42 | 15.02 | | | | | |
| 16 HS | 14.87 | 16.50 | 5 | 25 | 5 | 0.2 | 12 |
| 16 HSA | 14.87 | 15.50 | | | | | |
| 16 HSB | 15.33 | 15.96 | | | | | |
| 16 HSC | 15.79 | 16.50 | | | | | |
| 18 HS | 16.34 | 18.30 | 5 | 30 | 5 | 0.2 | 13 |
| 18 HSA | 16.34 | 17.06 | | | | | |
| 18 HSB | 16.90 | 17.67 | | | | | |
| 18 HSC | 17.51 | 18.30 | | | | | |

1) Tested with pulse $t_p = 40$ ms.

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



SEMTECH ELECTRONICS LTD.
(wholly owned subsidiary of HONEY TECHNOLOGY LTD.)



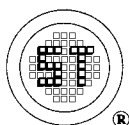
HS Series SILICON PLANAR ZENER DIODE

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 (uA) Max. | V_R (V) |
| 20 HS | 18.14 | 20.45 | 5 | 30 | 5 | 0.2 | 15 |
| 20 HSA | 18.14 | 18.96 | | | | | |
| 20 HSB | 18.80 | 19.68 | | | | | |
| 20 HSC | 19.52 | 20.45 | | | | | |
| 22 HS | 20.23 | 22.61 | 5 | 30 | 5 | 0.2 | 17 |
| 22 HSA | 20.23 | 21.08 | | | | | |
| 22 HSB | 20.76 | 21.65 | | | | | |
| 22 HSC | 21.22 | 22.09 | | | | | |
| 22 HSD | 21.68 | 22.61 | | | | | |
| 24 HS | 22.26 | 24.81 | 5 | 35 | 5 | 0.2 | 19 |
| 24 HSA | 22.26 | 23.12 | | | | | |
| 24 HSB | 22.75 | 23.73 | | | | | |
| 24 HSC | 23.29 | 24.27 | | | | | |
| 24 HSD | 23.81 | 24.81 | | | | | |
| 27 HS | 24.26 | 27.64 | 5 | 45 | 5 | 0.2 | 21 |
| 27 HSA | 24.26 | 25.52 | | | | | |
| 27 HSB | 24.97 | 26.26 | | | | | |
| 27 HSC | 25.63 | 26.95 | | | | | |
| 27 HSD | 26.29 | 27.64 | | | | | |
| 30 HS | 26.99 | 30.51 | 5 | 55 | 5 | 0.2 | 23 |
| 30 HSA | 26.99 | 28.39 | | | | | |
| 30 HSB | 27.70 | 29.13 | | | | | |
| 30 HSC | 28.36 | 29.82 | | | | | |
| 30 HSD | 29.02 | 30.51 | | | | | |
| 33 HS | 29.68 | 33.11 | 5 | 65 | 5 | 0.2 | 25 |
| 33 HSA | 29.68 | 31.22 | | | | | |
| 33 HSB | 30.32 | 31.88 | | | | | |
| 33 HSC | 30.90 | 32.50 | | | | | |
| 33 HSD | 31.49 | 33.11 | | | | | |
| 36 HS | 32.14 | 35.77 | 5 | 75 | 5 | 0.2 | 27 |
| 36 HSA | 32.14 | 33.79 | | | | | |
| 36 HSB | 32.79 | 34.49 | | | | | |
| 36 HSC | 33.40 | 35.13 | | | | | |
| 36 HSD | 34.01 | 35.77 | | | | | |
| 39 HS | 34.68 | 38.52 | 5 | 85 | 5 | 0.2 | 30 |
| 39 HSA | 34.68 | 36.47 | | | | | |
| 39 HSB | 35.36 | 37.19 | | | | | |
| 39 HSC | 36.00 | 37.85 | | | | | |
| 39 HSD | 36.63 | 38.52 | | | | | |

1) Tested with pulse $t_p = 40\text{ ms}$.

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



SEMTECH ELECTRONICS LTD.

(wholly owned subsidiary of HONEY TECHNOLOGY LTD.)

