

BS Series SILICON PLANAR ZENER DIODE

Silicon Planar Zener Diodes



Glass case JEDEC DO-34

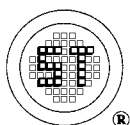
Dimensions in mm

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 | -65 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.)



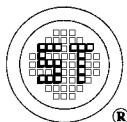
BS Series SILICON PLANAR ZENER DIODE

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

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

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.)



BS Series SILICON PLANAR ZENER DIODE

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

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



BS Series SILICON PLANAR ZENER DIODE

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

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

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.)

