

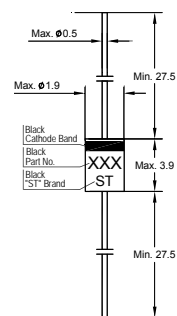
HZ Series

Silicon Epitaxial Planar Zener Diodes

for stabilized power supply

Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.8 V through 38 V of zener voltage provide flexible application.



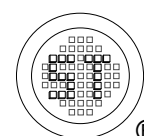
Glass Case DO-35
Dimensions in mm

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

| Parameter | Symbol | Value | Unit |
|---------------------------|------------------|---------------|------------------|
| Power Dissipation | P_{tot} | 500 | mW |
| Junction Temperature | T_j | 175 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 55 to + 175 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$ ($V_F = 1\text{ V Max. at } I_F = 100\text{ mA}$)

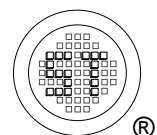
| Type | Zener Voltage ¹⁾ | | Reverse Leakage Current | | | Dynamic Resistance | |
|-------|-----------------------------|----------|-------------------------|---------------------------------|-----------------|-------------------------------|---------------------|
| | V_Z | | at I_{ZT} (mA) | I_R Max. (μA) | at V_R (V) | Z_{ZT} Max. (Ω) | at I_{ZT} (mA) |
| | Min. (V) | Max. (V) | | | | | |
| HZ2A3 | 1.8 | 2 | 5 | 25 | 0.5 | 100 | 5 |
| HZ2B1 | 1.9 | 2.1 | 5 | 5 | 0.5 | 100 | 5 |
| HZ2B2 | 2 | 2.2 | 5 | 5 | 0.5 | 100 | 5 |
| HZ2B3 | 2.1 | 2.3 | 5 | 5 | 0.5 | 100 | 5 |
| HZ2C1 | 2.2 | 2.4 | 5 | 5 | 0.5 | 100 | 5 |
| HZ2C2 | 2.3 | 2.5 | 5 | 5 | 0.5 | 100 | 5 |
| HZ2C3 | 2.4 | 2.6 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3A1 | 2.5 | 2.7 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3A2 | 2.6 | 2.8 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3A3 | 2.7 | 2.9 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3B1 | 2.8 | 3 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3B2 | 2.9 | 3.1 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3B3 | 3 | 3.2 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3C1 | 3.1 | 3.3 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3C2 | 3.2 | 3.4 | 5 | 5 | 0.5 | 100 | 5 |
| HZ3C3 | 3.3 | 3.5 | 5 | 5 | 0.5 | 100 | 5 |
| HZ4A1 | 3.4 | 3.6 | 5 | 5 | 1 | 100 | 5 |
| HZ4A2 | 3.5 | 3.7 | 5 | 5 | 1 | 100 | 5 |
| HZ4A3 | 3.6 | 3.8 | 5 | 5 | 1 | 100 | 5 |
| HZ4B1 | 3.7 | 3.9 | 5 | 5 | 1 | 100 | 5 |
| HZ4B2 | 3.8 | 4 | 5 | 5 | 1 | 100 | 5 |
| HZ4B3 | 3.9 | 4.1 | 5 | 5 | 1 | 100 | 5 |
| HZ4C1 | 4 | 4.2 | 5 | 5 | 1 | 100 | 5 |
| HZ4C2 | 4.1 | 4.3 | 5 | 5 | 1 | 100 | 5 |



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Characteristics at $T_a = 25\text{ }^\circ\text{C}$ ($V_F = 1\text{ V Max. at } I_F = 100\text{ mA}$)

| Type | Zener Voltage ¹⁾ | | | Reverse Leakage Current | | Dynamic Resistance | |
|--------|-----------------------------|----------|-------------|-------------------------|----------|--------------------|-------------|
| | V_Z | | at I_{ZT} | I_R | at V_R | Z_{ZT} | at I_{ZT} |
| | Min. (V) | Max. (V) | (mA) | Max. (μA) | (V) | Max. (Ω) | (mA) |
| HZ4C3 | 4.2 | 4.4 | 5 | 5 | 1 | 100 | 5 |
| HZ5A1 | 4.3 | 4.5 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5A2 | 4.4 | 4.6 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5A3 | 4.5 | 4.7 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5B1 | 4.6 | 4.8 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5B2 | 4.7 | 4.9 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5B3 | 4.8 | 5 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5C1 | 4.9 | 5.1 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5C2 | 5 | 5.2 | 5 | 5 | 1.5 | 100 | 5 |
| HZ5C3 | 5.1 | 5.3 | 5 | 5 | 1.5 | 100 | 5 |
| HZ6A1 | 5.2 | 5.5 | 5 | 5 | 2 | 40 | 5 |
| HZ6A2 | 5.3 | 5.6 | 5 | 5 | 2 | 40 | 5 |
| HZ6A3 | 5.4 | 5.7 | 5 | 5 | 2 | 40 | 5 |
| HZ6B1 | 5.5 | 5.8 | 5 | 5 | 2 | 40 | 5 |
| HZ6B2 | 5.6 | 5.9 | 5 | 5 | 2 | 40 | 5 |
| HZ6B3 | 5.7 | 6 | 5 | 5 | 2 | 40 | 5 |
| HZ6C1 | 5.8 | 6.1 | 5 | 5 | 2 | 40 | 5 |
| HZ6C2 | 6 | 6.3 | 5 | 5 | 2 | 40 | 5 |
| HZ6C3 | 6.1 | 6.4 | 5 | 5 | 2 | 40 | 5 |
| HZ7A1 | 6.3 | 6.6 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7A2 | 6.4 | 6.7 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7A3 | 6.6 | 6.9 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7B1 | 6.7 | 7 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7B2 | 6.9 | 7.2 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7B3 | 7 | 7.3 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7C1 | 7.2 | 7.6 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7C2 | 7.3 | 7.7 | 5 | 1 | 3.5 | 15 | 5 |
| HZ7C3 | 7.5 | 7.9 | 5 | 1 | 3.5 | 15 | 5 |
| HZ9A1 | 7.7 | 8.1 | 5 | 1 | 5 | 20 | 5 |
| HZ9A2 | 7.9 | 8.3 | 5 | 1 | 5 | 20 | 5 |
| HZ9A3 | 8.1 | 8.5 | 5 | 1 | 5 | 20 | 5 |
| HZ9B1 | 8.3 | 8.7 | 5 | 1 | 5 | 20 | 5 |
| HZ9B2 | 8.5 | 8.9 | 5 | 1 | 5 | 20 | 5 |
| HZ9B3 | 8.7 | 9.1 | 5 | 1 | 5 | 20 | 5 |
| HZ9C1 | 8.9 | 9.3 | 5 | 1 | 5 | 20 | 5 |
| HZ9C2 | 9.1 | 9.5 | 5 | 1 | 5 | 20 | 5 |
| HZ9C3 | 9.3 | 9.7 | 5 | 1 | 5 | 20 | 5 |
| HZ11A1 | 9.5 | 9.9 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11A2 | 9.7 | 10.1 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11A3 | 9.9 | 10.3 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11B1 | 10.2 | 10.6 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11B2 | 10.4 | 10.8 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11B3 | 10.7 | 11.1 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11C1 | 10.9 | 11.3 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11C2 | 11.1 | 11.6 | 5 | 1 | 7.5 | 25 | 5 |
| HZ11C3 | 11.4 | 11.9 | 5 | 1 | 7.5 | 25 | 5 |



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Characteristics at $T_a = 25\text{ °C}$ ($V_F = 1\text{ V Max. at } I_F = 100\text{ mA}$)

| Type | Zener Voltage ¹⁾ | | | Reverse Leakage Current | | Dynamic Resistance | |
|--------|-----------------------------|----------|-------------|-------------------------|----------|--------------------|-------------|
| | V_Z | | at I_{ZT} | I_R | at V_R | Z_{ZT} | at I_{ZT} |
| | Min. (V) | Max. (V) | (mA) | Max. (μA) | (V) | Max. (Ω) | (mA) |
| HZ12A1 | 11.6 | 12.1 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12A2 | 11.9 | 12.4 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12A3 | 12.2 | 12.7 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12B1 | 12.4 | 12.9 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12B2 | 12.6 | 13.1 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12B3 | 12.9 | 13.4 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12C1 | 13.2 | 13.7 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12C2 | 13.5 | 14 | 5 | 1 | 9.5 | 35 | 5 |
| HZ12C3 | 13.8 | 14.3 | 5 | 1 | 9.5 | 35 | 5 |
| HZ15-1 | 14.1 | 14.7 | 5 | 1 | 11 | 40 | 5 |
| HZ15-2 | 14.5 | 15.1 | 5 | 1 | 11 | 40 | 5 |
| HZ15-3 | 14.9 | 15.5 | 5 | 1 | 11 | 40 | 5 |
| HZ16-1 | 15.3 | 15.9 | 5 | 1 | 12 | 45 | 5 |
| HZ16-2 | 15.7 | 16.5 | 5 | 1 | 12 | 45 | 5 |
| HZ16-3 | 16.3 | 17.1 | 5 | 1 | 12 | 45 | 5 |
| HZ18-1 | 16.9 | 17.7 | 5 | 1 | 13 | 55 | 5 |
| HZ18-2 | 17.5 | 18.3 | 5 | 1 | 13 | 55 | 5 |
| HZ18-3 | 18.1 | 19 | 5 | 1 | 13 | 55 | 5 |
| HZ20-1 | 18.8 | 19.7 | 2 | 1 | 15 | 60 | 2 |
| HZ20-2 | 19.5 | 20.4 | 2 | 1 | 15 | 60 | 2 |
| HZ20-3 | 20.2 | 21.1 | 2 | 1 | 15 | 60 | 2 |
| HZ22-1 | 20.9 | 21.9 | 2 | 1 | 17 | 65 | 2 |
| HZ22-2 | 21.6 | 22.6 | 2 | 1 | 17 | 65 | 2 |
| HZ22-3 | 22.3 | 23.3 | 2 | 1 | 17 | 65 | 2 |
| HZ24-1 | 22.9 | 24 | 2 | 1 | 19 | 70 | 2 |
| HZ24-2 | 23.6 | 24.7 | 2 | 1 | 19 | 70 | 2 |
| HZ24-3 | 24.3 | 25.5 | 2 | 1 | 19 | 70 | 2 |
| HZ27-1 | 25.2 | 26.6 | 2 | 1 | 21 | 80 | 2 |
| HZ27-2 | 26.2 | 27.6 | 2 | 1 | 21 | 80 | 2 |
| HZ27-3 | 27.2 | 28.6 | 2 | 1 | 21 | 80 | 2 |
| HZ30-1 | 28.2 | 29.6 | 2 | 1 | 23 | 100 | 2 |
| HZ30-2 | 29.2 | 30.6 | 2 | 1 | 23 | 100 | 2 |
| HZ30-3 | 30.2 | 31.6 | 2 | 1 | 23 | 100 | 2 |
| HZ33-1 | 31.2 | 32.6 | 2 | 1 | 25 | 120 | 2 |
| HZ33-2 | 32.2 | 33.6 | 2 | 1 | 25 | 120 | 2 |
| HZ33-3 | 33.2 | 34.6 | 2 | 1 | 25 | 120 | 2 |
| HZ36-1 | 34.2 | 35.7 | 2 | 1 | 27 | 140 | 2 |
| HZ36-2 | 35.3 | 36.8 | 2 | 1 | 27 | 140 | 2 |
| HZ36-3 | 36.4 | 38 | 2 | 1 | 27 | 140 | 2 |

¹⁾ Tested with pulses $t_p = 20\text{ ms}$.



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Fig.1- Zener current versus zener voltage

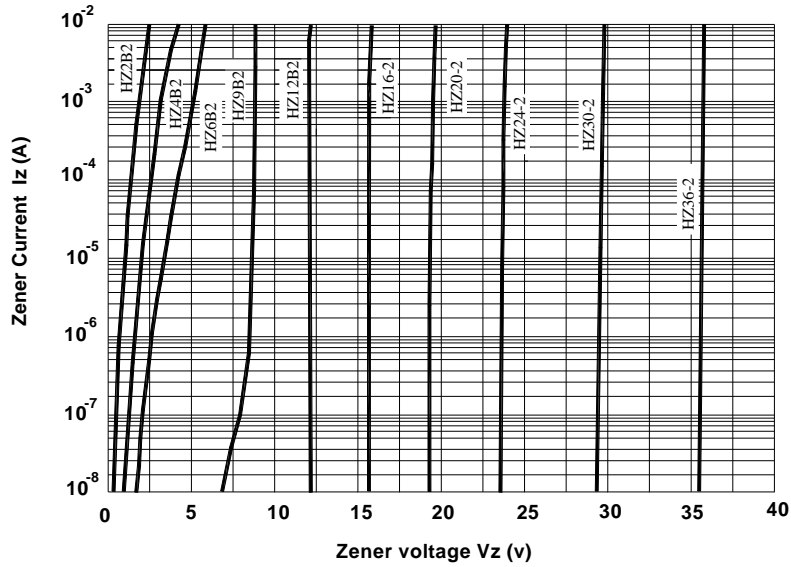


Fig.2 Temperature Coefficient Vs. Zener voltage

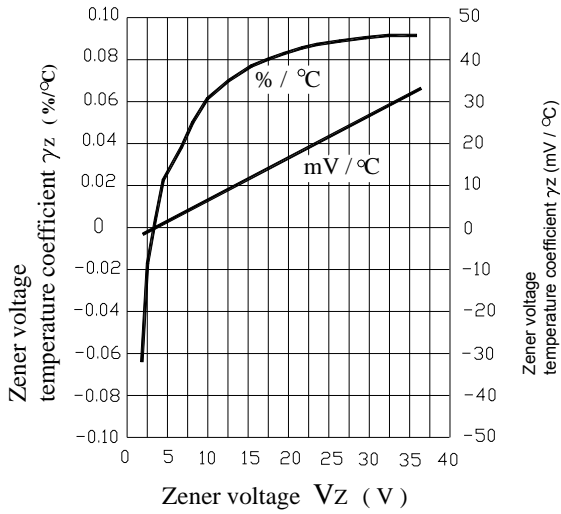
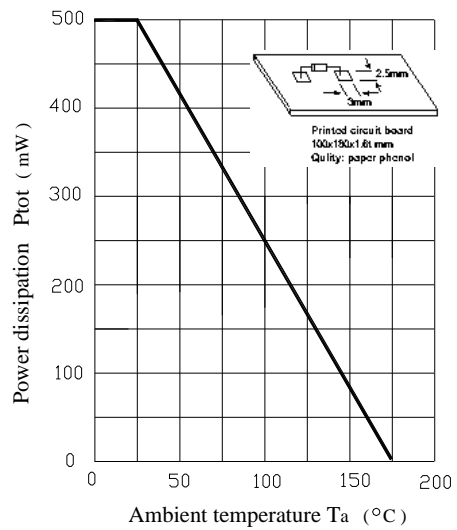


Fig. 3 Power dissipation Vs. Ambient temperature



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