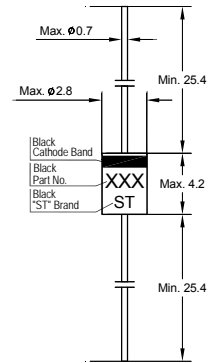


1N4727...1N4761

Silicon Planar Power Zener Diodes

for use in stabilizing and clipping circuits with high power rating. Standard zener voltage tolerance is $\pm 10\%$. Add suffix "A" for $\pm 5\%$ tolerance and suffix "B" for $\pm 2\%$ tolerance. Other tolerances are available upon request.



Glass Case DO-41
Dimensions in mm

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

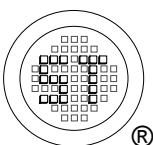
| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|-----------------|------------------|
| Power Dissipation | P_{tot} | 1 ¹⁾ | W |
| Junction Temperature | T_j | 200 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 65 to + 200 | $^\circ\text{C}$ |

¹⁾ Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

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

| Parameter | Symbol | Max. | Unit |
|---|-----------|-------------------|------|
| Thermal Resistance Junction to Ambient Air | R_{thA} | 170 ¹⁾ | K/W |
| Forward Voltage at $I_F = 200\text{ mA}$ | V_F | 1.2 | V |

¹⁾ Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



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

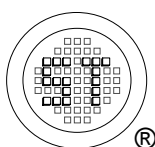
| Type | Zener Voltage ³⁾ | | Dynamic Resistance ¹⁾ | | | Reverse Current | | Maximum Surge Current ⁴⁾ | Maximum Regulator Current ²⁾ |
|--------|-----------------------------|-------------|----------------------------------|-------------------|-------------|------------------------|----------|-------------------------------------|---|
| | V_{Znom} | at I_{ZT} | Z_{ZT} | Z_{ZK} | at I_{ZK} | I_R | at V_R | at $T_a = 25\text{ }^\circ\text{C}$ | |
| | (V) | (mA) | Max. (Ω) | Max. (Ω) | (mA) | Max. (μA) | (V) | I_{ZSM} (mA) | I_{ZM} (mA) |
| 1N4727 | 3 | 83 | 10 | 400 | 1 | 150 | 1 | 1375 | 275 |
| 1N4728 | 3.3 | 76 | 10 | 400 | 1 | 150 | 1 | 1375 | 275 |
| 1N4729 | 3.6 | 69 | 10 | 400 | 1 | 100 | 1 | 1260 | 252 |
| 1N4730 | 3.9 | 64 | 9 | 400 | 1 | 100 | 1 | 1190 | 234 |
| 1N4731 | 4.3 | 58 | 9 | 400 | 1 | 50 | 1 | 1070 | 217 |
| 1N4732 | 4.7 | 53 | 8 | 500 | 1 | 10 | 1 | 970 | 193 |
| 1N4733 | 5.1 | 49 | 7 | 550 | 1 | 10 | 1 | 890 | 178 |
| 1N4734 | 5.6 | 45 | 5 | 600 | 1 | 10 | 2 | 810 | 162 |
| 1N4735 | 6.2 | 41 | 2 | 700 | 1 | 10 | 3 | 730 | 146 |
| 1N4736 | 6.8 | 37 | 3.5 | 700 | 1 | 10 | 4 | 660 | 133 |
| 1N4737 | 7.5 | 34 | 4 | 700 | 0.5 | 10 | 5 | 605 | 121 |
| 1N4738 | 8.2 | 31 | 4.5 | 700 | 0.5 | 10 | 6 | 550 | 110 |
| 1N4739 | 9.1 | 28 | 5 | 700 | 0.5 | 10 | 7 | 500 | 100 |
| 1N4740 | 10 | 25 | 7 | 700 | 0.25 | 10 | 7.6 | 454 | 91 |
| 1N4741 | 11 | 23 | 8 | 700 | 0.25 | 5 | 8.4 | 414 | 83 |
| 1N4742 | 12 | 21 | 9 | 700 | 0.25 | 5 | 9.1 | 380 | 76 |
| 1N4743 | 13 | 19 | 10 | 700 | 0.25 | 5 | 9.9 | 344 | 69 |
| 1N4744 | 15 | 17 | 14 | 700 | 0.25 | 5 | 11.4 | 304 | 61 |
| 1N4745 | 16 | 15.5 | 16 | 700 | 0.25 | 5 | 12.2 | 285 | 57 |
| 1N4746 | 18 | 14 | 20 | 750 | 0.25 | 5 | 13.7 | 250 | 50 |
| 1N4747 | 20 | 12.5 | 22 | 750 | 0.25 | 5 | 15.2 | 225 | 45 |
| 1N4748 | 22 | 11.5 | 23 | 750 | 0.25 | 5 | 16.7 | 205 | 41 |
| 1N4749 | 24 | 10.5 | 25 | 750 | 0.25 | 5 | 18.2 | 190 | 38 |
| 1N4750 | 27 | 9.5 | 35 | 750 | 0.25 | 5 | 20.6 | 170 | 34 |
| 1N4751 | 30 | 8.5 | 40 | 1000 | 0.25 | 5 | 22.8 | 150 | 30 |
| 1N4752 | 33 | 7.5 | 45 | 1000 | 0.25 | 5 | 25.1 | 135 | 27 |
| 1N4753 | 36 | 7 | 50 | 1000 | 0.25 | 5 | 27.4 | 125 | 25 |
| 1N4754 | 39 | 6.5 | 60 | 1000 | 0.25 | 5 | 29.7 | 115 | 23 |
| 1N4755 | 43 | 6 | 70 | 1500 | 0.25 | 5 | 32.7 | 110 | 22 |
| 1N4756 | 47 | 5.5 | 80 | 1500 | 0.25 | 5 | 35.8 | 95 | 19 |
| 1N4757 | 51 | 5 | 95 | 1500 | 0.25 | 5 | 38.8 | 90 | 18 |
| 1N4758 | 56 | 4.5 | 110 | 2000 | 0.25 | 5 | 42.6 | 80 | 16 |
| 1N4759 | 62 | 4 | 125 | 2000 | 0.25 | 5 | 47.1 | 70 | 14 |
| 1N4760 | 68 | 3.7 | 150 | 2000 | 0.25 | 5 | 51.7 | 65 | 13 |
| 1N4761 | 75 | 3.3 | 175 | 2000 | 0.25 | 5 | 56 | 60 | 12 |

¹⁾ The dynamic resistance is derived from the 60 Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener Current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Dynamic resistance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

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

³⁾ Tested with pulses $t_p = 20\text{ ms}$.

⁴⁾ The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I_{ZT} .



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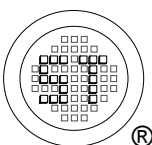
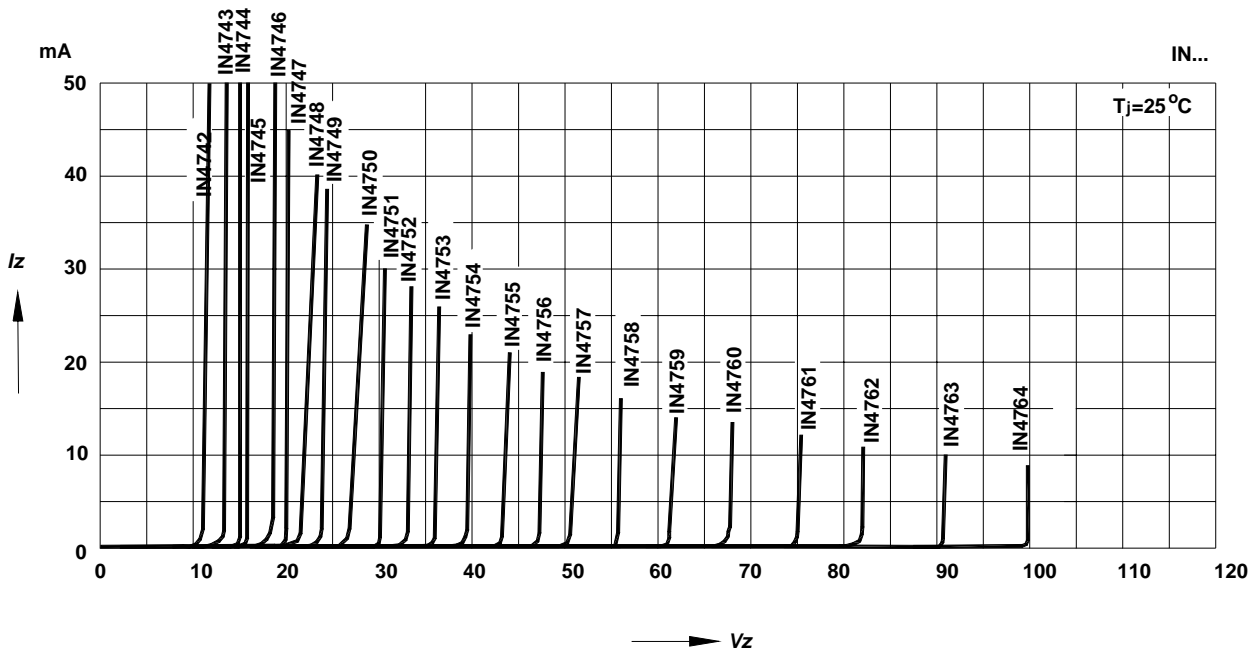
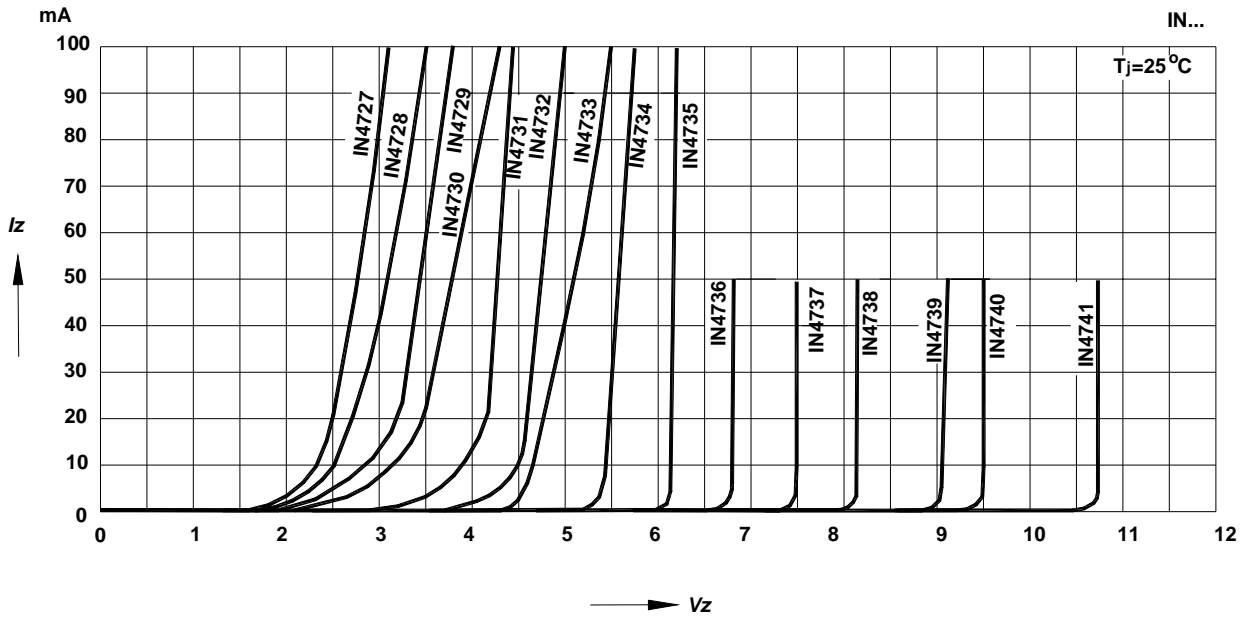


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Breakdown characteristics

$T_j = \text{constant (pulsed)}$



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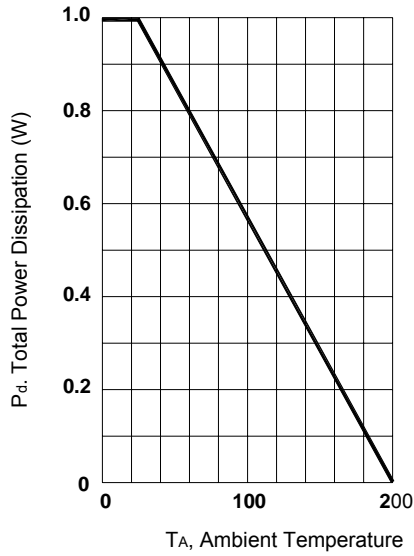


Fig. 1 Power Dissipation vs Ambient Temperature

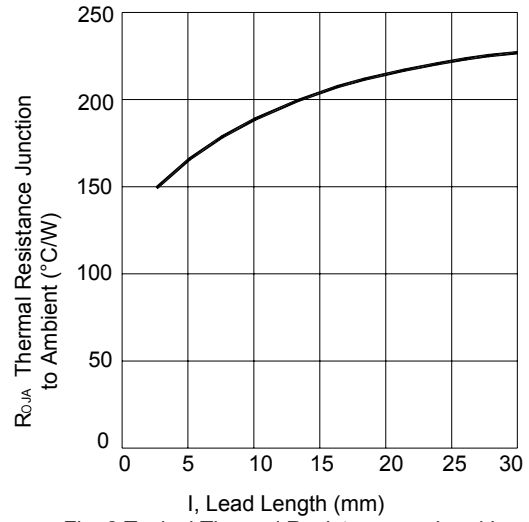


Fig. 2 Typical Thermal Resistance vs. Lead Length

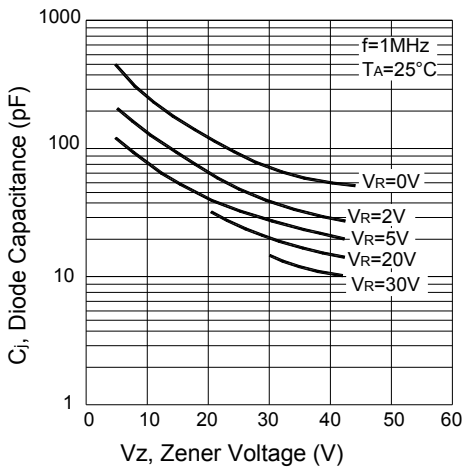


Fig. 3 Junction Capacitance vs Zener Voltage

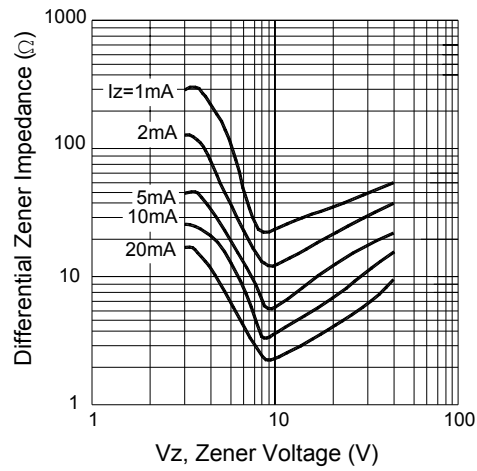


Fig. 4 Typical Zener Impedance vs. Zener Voltage

