

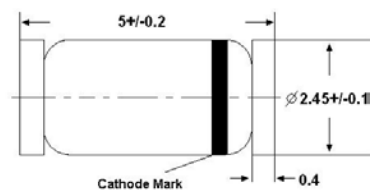


Silicon Planar Power Zener Diodes

For use in stabilizing and clipping circuits with high power rating. Standard Zener voltage tolerance is $\pm 10\%$. Other tolerances available are upon request.

These diodes are also available in DO-41 case with the type designation 1N4728...1N4761

LL-41



Glass case MELF
Dimensions in mm

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

| Parameter | Symbol | Value | Unit |
|--------------------------------|-----------|-----------------|------------------|
| Power Dissipation | P_D | 1 ¹⁾ | W |
| Operating Junction Temperature | T_j | 175 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 65 to + 175 | $^\circ\text{C}$ |

¹⁾ Valid provided that electrodes are kept at ambient temperature.

Thermal Characteristics

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

¹⁾ Valid provided that electrodes are kept at ambient temperature.



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

| Type | Zener Voltage ³⁾ | | | | Dynamic Resistance ¹⁾ | | | Reverse Current | | Maximum Surge Current ⁴⁾ | Maximum Regulator Current ²⁾ |
|---------|-----------------------------|----------|----------|-------------|----------------------------------|-------------------|-------------|------------------------|----------|-------------------------------------|---|
| | V_{Znom} | V_Z | | at I_{ZT} | Z_{ZT} at I_{ZT} | Z_{ZK} | at I_{ZK} | I_R | at V_R | at $T_a = 25^\circ\text{C}$ | |
| | (V) | Min. (V) | Max. (V) | (mA) | Max. (Ω) | Max. (Ω) | (mA) | Max. (μA) | (V) | I_{ZSM} (mA) | I_{ZM} (mA) |
| ZM4727A | 3 | 2.70 | 3.30 | 83 | 10 | 400 | 1 | 150 | 1 | 1375 | 275 |
| ZM4728A | 3.3 | 2.97 | 3.63 | 76 | 10 | 400 | 1 | 150 | 1 | 1375 | 275 |
| ZM4729A | 3.6 | 3.24 | 3.96 | 69 | 10 | 400 | 1 | 100 | 1 | 1260 | 252 |
| ZM4730A | 3.9 | 3.51 | 4.29 | 64 | 9 | 400 | 1 | 100 | 1 | 1190 | 234 |
| ZM4731A | 4.3 | 3.87 | 4.73 | 58 | 9 | 400 | 1 | 50 | 1 | 1070 | 217 |
| ZM4732A | 4.7 | 4.23 | 5.17 | 53 | 8 | 500 | 1 | 10 | 1 | 970 | 193 |
| ZM4733A | 5.1 | 4.59 | 5.61 | 49 | 7 | 550 | 1 | 10 | 1 | 890 | 178 |
| ZM4734A | 5.6 | 5.04 | 6.16 | 45 | 5 | 600 | 1 | 10 | 2 | 810 | 162 |
| ZM4735A | 6.2 | 5.58 | 6.82 | 41 | 2 | 700 | 1 | 10 | 3 | 730 | 146 |
| ZM4736A | 6.8 | 6.12 | 7.48 | 37 | 3.5 | 700 | 1 | 10 | 4 | 660 | 133 |
| ZM4737A | 7.5 | 6.75 | 8.25 | 34 | 4 | 700 | 0.5 | 10 | 5 | 605 | 121 |
| ZM4738A | 8.2 | 7.38 | 9.02 | 31 | 4.5 | 700 | 0.5 | 10 | 6 | 550 | 110 |
| ZM4739A | 9.1 | 8.19 | 10.01 | 28 | 5 | 700 | 0.5 | 10 | 7 | 500 | 100 |
| ZM4740A | 10 | 9.00 | 11.00 | 25 | 7 | 700 | 0.25 | 10 | 7.6 | 454 | 91 |
| ZM4741A | 11 | 9.90 | 12.10 | 23 | 8 | 700 | 0.25 | 5 | 8.4 | 414 | 83 |
| ZM4742A | 12 | 10.80 | 13.20 | 21 | 9 | 700 | 0.25 | 5 | 9.1 | 380 | 76 |
| ZM4743A | 13 | 11.70 | 14.30 | 19 | 10 | 700 | 0.25 | 5 | 9.9 | 344 | 69 |
| ZM4744A | 15 | 13.50 | 16.50 | 17 | 14 | 700 | 0.25 | 5 | 11.4 | 304 | 61 |
| ZM4745A | 16 | 14.40 | 17.60 | 15.5 | 16 | 700 | 0.25 | 5 | 12.2 | 285 | 57 |
| ZM4746A | 18 | 16.20 | 19.80 | 14 | 20 | 750 | 0.25 | 5 | 13.7 | 250 | 50 |
| ZM4747A | 20 | 18.00 | 22.00 | 12.5 | 22 | 750 | 0.25 | 5 | 15.2 | 225 | 45 |
| ZM4748A | 22 | 19.80 | 24.20 | 11.5 | 23 | 750 | 0.25 | 5 | 16.7 | 205 | 41 |
| ZM4749A | 24 | 21.60 | 26.40 | 10.5 | 25 | 750 | 0.25 | 5 | 18.2 | 190 | 38 |
| ZM4750A | 27 | 24.30 | 29.70 | 9.5 | 35 | 750 | 0.25 | 5 | 20.6 | 170 | 34 |
| ZM4751A | 30 | 27.00 | 33.00 | 8.5 | 40 | 1000 | 0.25 | 5 | 22.8 | 150 | 30 |
| ZM4752A | 33 | 29.70 | 36.30 | 7.5 | 45 | 1000 | 0.25 | 5 | 25.1 | 135 | 27 |
| ZM4753A | 36 | 32.40 | 39.60 | 7 | 50 | 1000 | 0.25 | 5 | 27.4 | 125 | 25 |
| ZM4754A | 39 | 35.10 | 42.90 | 6.5 | 60 | 1000 | 0.25 | 5 | 29.7 | 115 | 23 |
| ZM4755A | 43 | 38.70 | 47.30 | 6 | 70 | 1500 | 0.25 | 5 | 32.7 | 110 | 22 |
| ZM4756A | 47 | 42.30 | 51.70 | 5.5 | 80 | 1500 | 0.25 | 5 | 35.8 | 95 | 19 |
| ZM4757A | 51 | 45.90 | 56.10 | 5 | 95 | 1500 | 0.25 | 5 | 38.8 | 90 | 18 |
| ZM4758A | 56 | 50.40 | 61.60 | 4.5 | 110 | 2000 | 0.25 | 5 | 42.6 | 80 | 16 |
| ZM4759A | 62 | 55.80 | 68.20 | 4 | 125 | 2000 | 0.25 | 5 | 47.1 | 70 | 14 |
| ZM4760A | 68 | 61.20 | 74.80 | 3.7 | 150 | 2000 | 0.25 | 5 | 51.7 | 65 | 13 |
| ZM4761A | 75 | 67.50 | 82.50 | 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 electrodes are kept at ambient temperature.

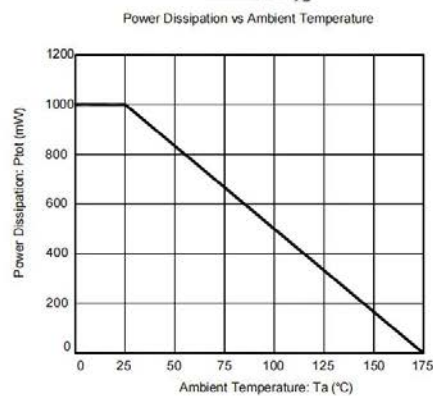
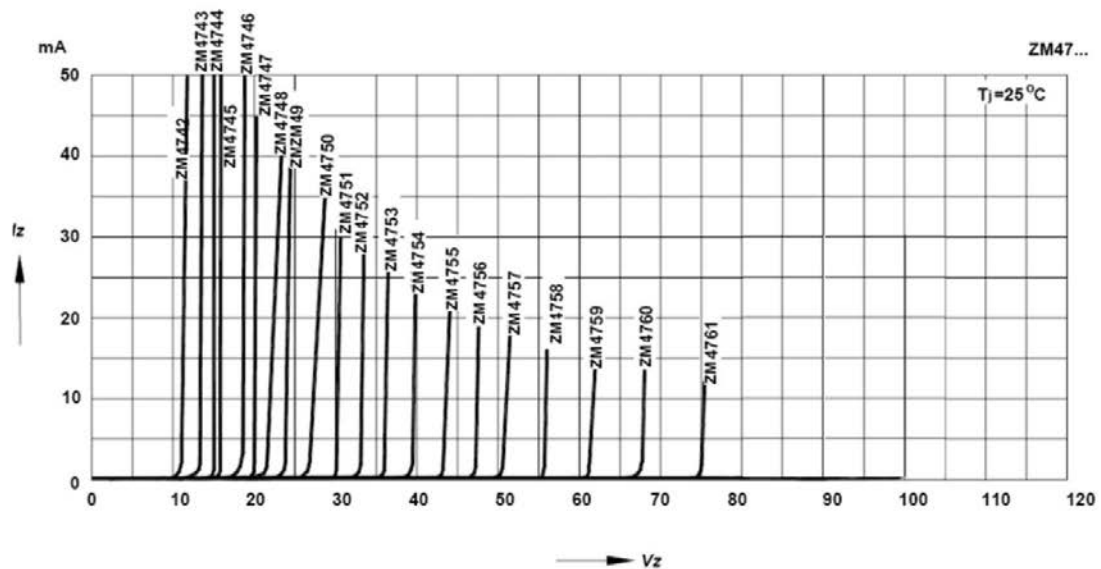
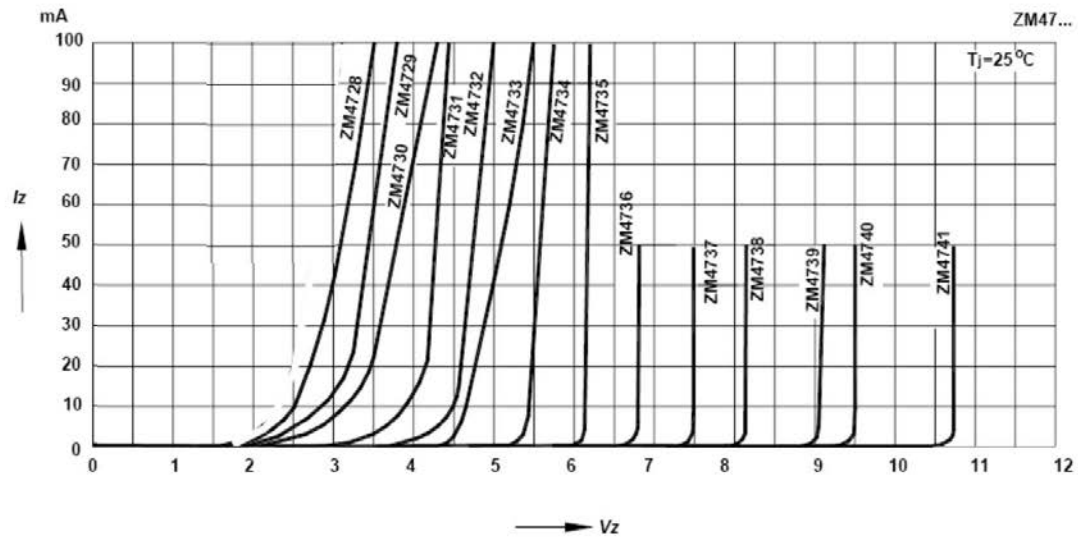
³⁾ Tested with pulses $t_p = 20$ ms.

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} .



Breakdown characteristics

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





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