

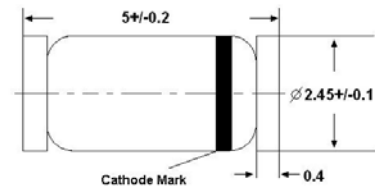
# ZM4727...ZM4761

## 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 available are upon request.

These diodes are also available in DO-41 case with the type designation 1N4727...1N4761

LL-41



Glass case MELF  
Dimensions in mm

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

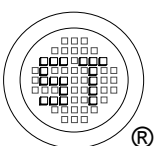
| Parameter                 | Symbol           | Value           | Unit             |
|---------------------------|------------------|-----------------|------------------|
| Power Dissipation         | $P_{\text{tot}}$ | 1 <sup>1)</sup> | W                |
| Junction Temperature      | $T_j$            | 175             | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{\text{stg}}$ | - 65 to + 175   | $^\circ\text{C}$ |

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.

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

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

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.



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

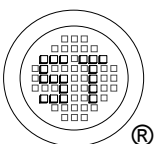
| Type   | Zener Voltage <sup>3)</sup> |             | Dynamic Resistance <sup>1)</sup> |                   |             | Reverse Current        |          | Maximum Surge Current <sup>4)</sup> | Maximum Regulator Current <sup>2)</sup> |
|--------|-----------------------------|-------------|----------------------------------|-------------------|-------------|------------------------|----------|-------------------------------------|---|
|        | $V_{Znom}$                  | at $I_{ZT}$ | $Z_{ZT}$                         | $Z_{ZK}$          | at $I_{ZK}$ | $I_R$                  | at $V_R$ | at $T_a = 25^\circ\text{C}$         |   |
|        | (V)                         | (mA)        | Max. ( $\Omega$ )                | Max. ( $\Omega$ ) | (mA)        | Max. ( $\mu\text{A}$ ) | (V)      | $I_{ZSM}$ (mA)                      | $I_{ZM}$ (mA)                           |
| ZM4727 | 3                           | 83          | 10                               | 400               | 1           | 150                    | 1        | 1375                                | 275                                     |
| ZM4728 | 3.3                         | 76          | 10                               | 400               | 1           | 150                    | 1        | 1375                                | 275                                     |
| ZM4729 | 3.6                         | 69          | 10                               | 400               | 1           | 100                    | 1        | 1260                                | 252                                     |
| ZM4730 | 3.9                         | 64          | 9                                | 400               | 1           | 100                    | 1        | 1190                                | 234                                     |
| ZM4731 | 4.3                         | 58          | 9                                | 400               | 1           | 50                     | 1        | 1070                                | 217                                     |
| ZM4732 | 4.7                         | 53          | 8                                | 500               | 1           | 10                     | 1        | 970                                 | 193                                     |
| ZM4733 | 5.1                         | 49          | 7                                | 550               | 1           | 10                     | 1        | 890                                 | 178                                     |
| ZM4734 | 5.6                         | 45          | 5                                | 600               | 1           | 10                     | 2        | 810                                 | 162                                     |
| ZM4735 | 6.2                         | 41          | 2                                | 700               | 1           | 10                     | 3        | 730                                 | 146                                     |
| ZM4736 | 6.8                         | 37          | 3.5                              | 700               | 1           | 10                     | 4        | 660                                 | 133                                     |
| ZM4737 | 7.5                         | 34          | 4                                | 700               | 0.5         | 10                     | 5        | 605                                 | 121                                     |
| ZM4738 | 8.2                         | 31          | 4.5                              | 700               | 0.5         | 10                     | 6        | 550                                 | 110                                     |
| ZM4739 | 9.1                         | 28          | 5                                | 700               | 0.5         | 10                     | 7        | 500                                 | 100                                     |
| ZM4740 | 10                          | 25          | 7                                | 700               | 0.25        | 10                     | 7.6      | 454                                 | 91                                      |
| ZM4741 | 11                          | 23          | 8                                | 700               | 0.25        | 5                      | 8.4      | 414                                 | 83                                      |
| ZM4742 | 12                          | 21          | 9                                | 700               | 0.25        | 5                      | 9.1      | 380                                 | 76                                      |
| ZM4743 | 13                          | 19          | 10                               | 700               | 0.25        | 5                      | 9.9      | 344                                 | 69                                      |
| ZM4744 | 15                          | 17          | 14                               | 700               | 0.25        | 5                      | 11.4     | 304                                 | 61                                      |
| ZM4745 | 16                          | 15.5        | 16                               | 700               | 0.25        | 5                      | 12.2     | 285                                 | 57                                      |
| ZM4746 | 18                          | 14          | 20                               | 750               | 0.25        | 5                      | 13.7     | 250                                 | 50                                      |
| ZM4747 | 20                          | 12.5        | 22                               | 750               | 0.25        | 5                      | 15.2     | 225                                 | 45                                      |
| ZM4748 | 22                          | 11.5        | 23                               | 750               | 0.25        | 5                      | 16.7     | 205                                 | 41                                      |
| ZM4749 | 24                          | 10.5        | 25                               | 750               | 0.25        | 5                      | 18.2     | 190                                 | 38                                      |
| ZM4750 | 27                          | 9.5         | 35                               | 750               | 0.25        | 5                      | 20.6     | 170                                 | 34                                      |
| ZM4751 | 30                          | 8.5         | 40                               | 1000              | 0.25        | 5                      | 22.8     | 150                                 | 30                                      |
| ZM4752 | 33                          | 7.5         | 45                               | 1000              | 0.25        | 5                      | 25.1     | 135                                 | 27                                      |
| ZM4753 | 36                          | 7           | 50                               | 1000              | 0.25        | 5                      | 27.4     | 125                                 | 25                                      |
| ZM4754 | 39                          | 6.5         | 60                               | 1000              | 0.25        | 5                      | 29.7     | 115                                 | 23                                      |
| ZM4755 | 43                          | 6           | 70                               | 1500              | 0.25        | 5                      | 32.7     | 110                                 | 22                                      |
| ZM4756 | 47                          | 5.5         | 80                               | 1500              | 0.25        | 5                      | 35.8     | 95                                  | 19                                      |
| ZM4757 | 51                          | 5           | 95                               | 1500              | 0.25        | 5                      | 38.8     | 90                                  | 18                                      |
| ZM4758 | 56                          | 4.5         | 110                              | 2000              | 0.25        | 5                      | 42.6     | 80                                  | 16                                      |
| ZM4759 | 62                          | 4           | 125                              | 2000              | 0.25        | 5                      | 47.1     | 70                                  | 14                                      |
| ZM4760 | 68                          | 3.7         | 150                              | 2000              | 0.25        | 5                      | 51.7     | 65                                  | 13                                      |
| ZM4761 | 75                          | 3.3         | 175                              | 2000              | 0.25        | 5                      | 56       | 60                                  | 12                                      |

<sup>1)</sup> 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.

<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature.

<sup>3)</sup> Tested with pulses  $t_p = 20$  ms.

<sup>4)</sup> 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  $I_{ZT}$ .



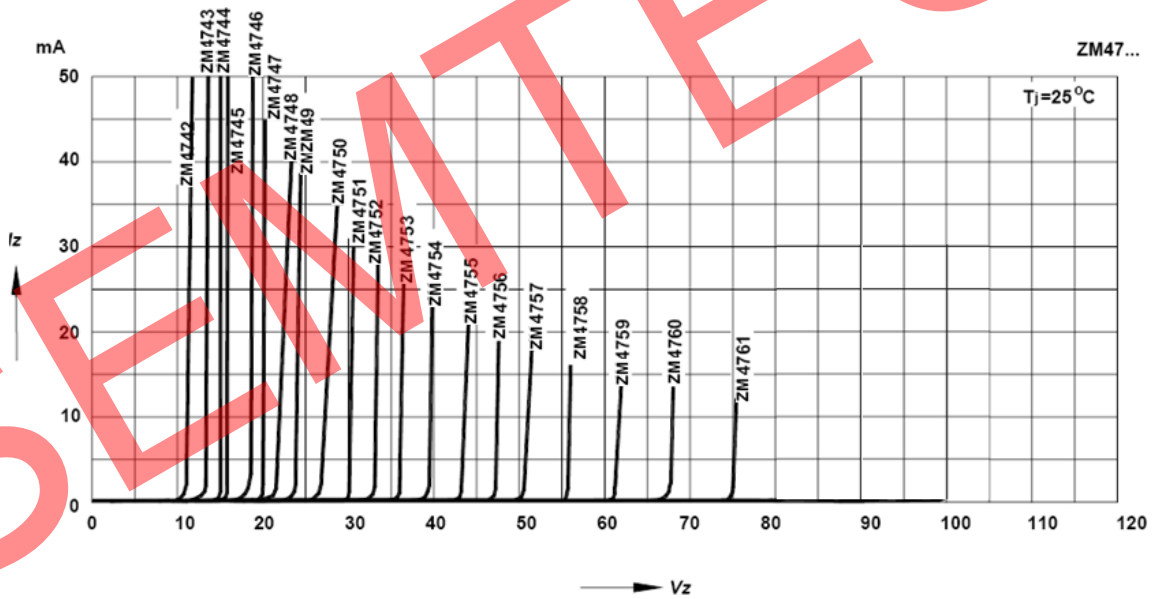
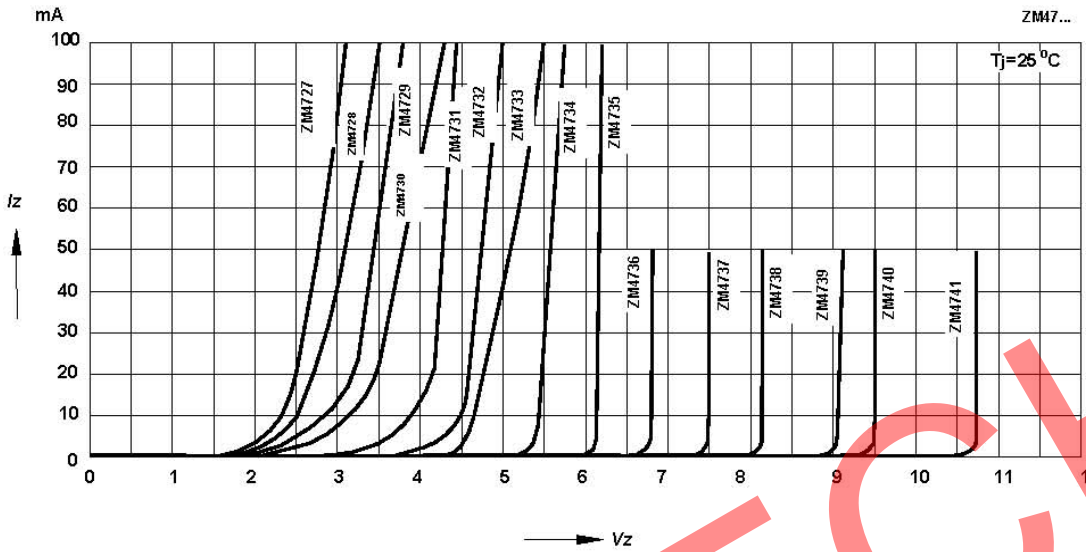
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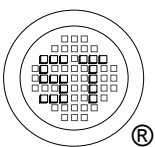
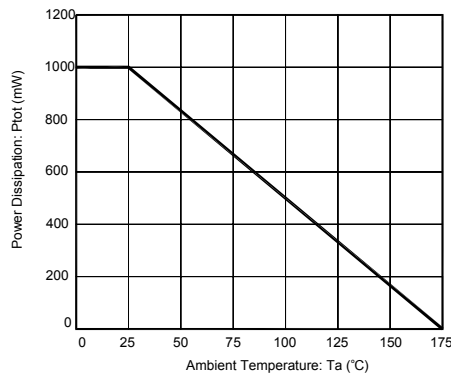
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## Breakdown characteristics

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



Power Dissipation vs Ambient Temperature



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