

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



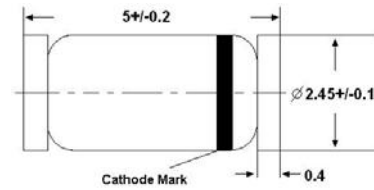
GDT



PLED

Product data sheet

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.



Glass case MELF  
Dimensions in mm

LL-41

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

**REEL SPECIFICATION**

| P/N                      | PKG  | QTY  |
|--------------------------|------|------|
| ZM4727-MS THRU ZM4761-MS | LL41 | 5000 |

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

| Parameter                 | Symbol    | Value           | Unit             |
|---------------------------|-----------|-----------------|------------------|
| Power Dissipation         | $P_{tot}$ | 1 <sup>1)</sup> | W                |
| Junction Temperature      | $T_j$     | 175             | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{stg}$ | - 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  | $R_{\theta JA}$ | 170 <sup>1)</sup> | K/W  |
| Forward Voltage<br>at $I_F = 200\text{ mA}$ | $V_F$           | 1.2               | V    |

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

**Characteristics at T<sub>a</sub> = 25°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 <sub>Zn<sub>om</sub></sub> | at I <sub>ZT</sub> | Z <sub>ZT</sub>                  | Z <sub>ZK</sub> | at I <sub>ZK</sub> | I <sub>R</sub>  | at V <sub>R</sub> | at T <sub>a</sub> = 25°C            |   |
|           | (V)                          | (mA)               | Max. (Ω)                         | Max. (Ω)        | (mA)               | Max. (μA)       | (V)               | I <sub>ZSM</sub> (mA)               | I <sub>ZM</sub> (mA)                    |
| ZM4727-MS | 3                            | 83                 | 10                               | 400             | 1                  | 150             | 1                 | 1375                                | 275                                     |
| ZM4728-MS | 3.3                          | 76                 | 10                               | 400             | 1                  | 150             | 1                 | 1375                                | 275                                     |
| ZM4729-MS | 3.6                          | 69                 | 10                               | 400             | 1                  | 100             | 1                 | 1260                                | 252                                     |
| ZM4730-MS | 3.9                          | 64                 | 9                                | 400             | 1                  | 100             | 1                 | 1190                                | 234                                     |
| ZM4731-MS | 4.3                          | 58                 | 9                                | 400             | 1                  | 50              | 1                 | 1070                                | 217                                     |
| ZM4732-MS | 4.7                          | 53                 | 8                                | 500             | 1                  | 10              | 1                 | 970                                 | 193                                     |
| ZM4733-MS | 5.1                          | 49                 | 7                                | 550             | 1                  | 10              | 1                 | 890                                 | 178                                     |
| ZM4734-MS | 5.6                          | 45                 | 5                                | 600             | 1                  | 10              | 2                 | 810                                 | 162                                     |
| ZM4735-MS | 6.2                          | 41                 | 2                                | 700             | 1                  | 10              | 3                 | 730                                 | 146                                     |
| ZM4736-MS | 6.8                          | 37                 | 3.5                              | 700             | 1                  | 10              | 4                 | 660                                 | 133                                     |
| ZM4737-MS | 7.5                          | 34                 | 4                                | 700             | 0.5                | 10              | 5                 | 605                                 | 121                                     |
| ZM4738-MS | 8.2                          | 31                 | 4.5                              | 700             | 0.5                | 10              | 6                 | 550                                 | 110                                     |
| ZM4739-MS | 9.1                          | 28                 | 5                                | 700             | 0.5                | 10              | 7                 | 500                                 | 100                                     |
| ZM4740-MS | 10                           | 25                 | 7                                | 700             | 0.25               | 10              | 7.6               | 454                                 | 91                                      |
| ZM4741-MS | 11                           | 23                 | 8                                | 700             | 0.25               | 5               | 8.4               | 414                                 | 83                                      |
| ZM4742-MS | 12                           | 21                 | 9                                | 700             | 0.25               | 5               | 9.1               | 380                                 | 76                                      |
| ZM4743-MS | 13                           | 19                 | 10                               | 700             | 0.25               | 5               | 9.9               | 344                                 | 69                                      |
| ZM4744-MS | 15                           | 17                 | 14                               | 700             | 0.25               | 5               | 11.4              | 304                                 | 61                                      |
| ZM4745-MS | 16                           | 15.5               | 16                               | 700             | 0.25               | 5               | 12.2              | 285                                 | 57                                      |
| ZM4746-MS | 18                           | 14                 | 20                               | 750             | 0.25               | 5               | 13.7              | 250                                 | 50                                      |
| ZM4747-MS | 20                           | 12.5               | 22                               | 750             | 0.25               | 5               | 15.2              | 225                                 | 45                                      |
| ZM4748-MS | 22                           | 11.5               | 23                               | 750             | 0.25               | 5               | 16.7              | 205                                 | 41                                      |
| ZM4749-MS | 24                           | 10.5               | 25                               | 750             | 0.25               | 5               | 18.2              | 190                                 | 38                                      |
| ZM4750-MS | 27                           | 9.5                | 35                               | 750             | 0.25               | 5               | 20.6              | 170                                 | 34                                      |
| ZM4751-MS | 30                           | 8.5                | 40                               | 1000            | 0.25               | 5               | 22.8              | 150                                 | 30                                      |
| ZM4752-MS | 33                           | 7.5                | 45                               | 1000            | 0.25               | 5               | 25.1              | 135                                 | 27                                      |
| ZM4753-MS | 36                           | 7                  | 50                               | 1000            | 0.25               | 5               | 27.4              | 125                                 | 25                                      |
| ZM4754-MS | 39                           | 6.5                | 60                               | 1000            | 0.25               | 5               | 29.7              | 115                                 | 23                                      |
| ZM4755-MS | 43                           | 6                  | 70                               | 1500            | 0.25               | 5               | 32.7              | 110                                 | 22                                      |
| ZM4756-MS | 47                           | 5.5                | 80                               | 1500            | 0.25               | 5               | 35.8              | 95                                  | 19                                      |
| ZM4757-MS | 51                           | 5                  | 95                               | 1500            | 0.25               | 5               | 38.8              | 90                                  | 18                                      |
| ZM4758-MS | 56                           | 4.5                | 110                              | 2000            | 0.25               | 5               | 42.6              | 80                                  | 16                                      |
| ZM4759-MS | 62                           | 4                  | 125                              | 2000            | 0.25               | 5               | 47.1              | 70                                  | 14                                      |
| ZM4760-MS | 68                           | 3.7                | 150                              | 2000            | 0.25               | 5               | 51.7              | 65                                  | 13                                      |
| ZM4761-MS | 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<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. Dynamic resistance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

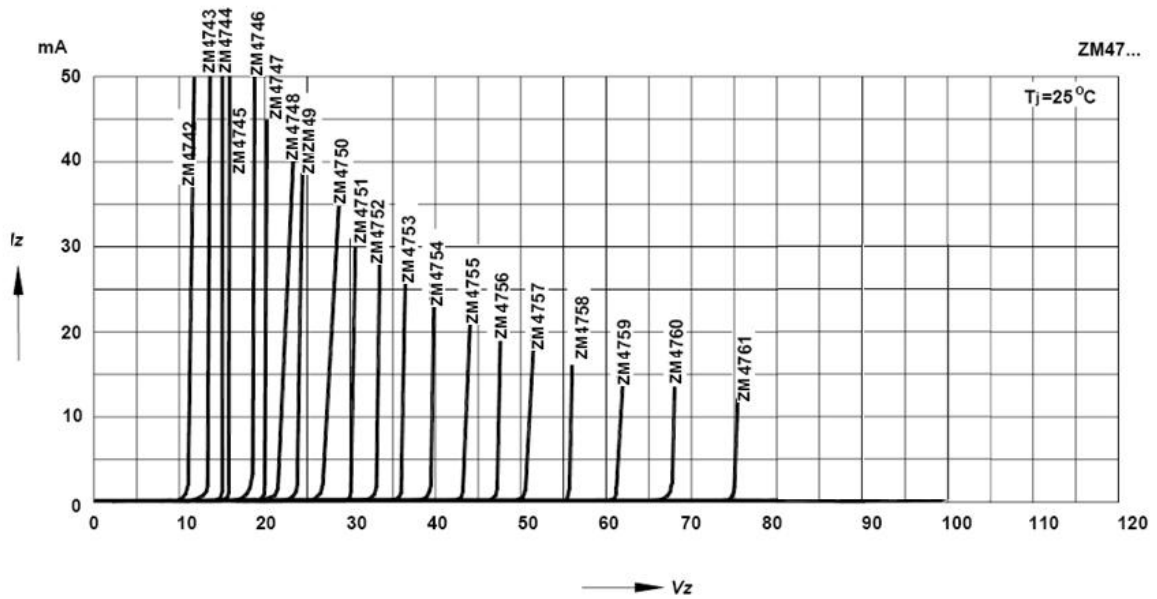
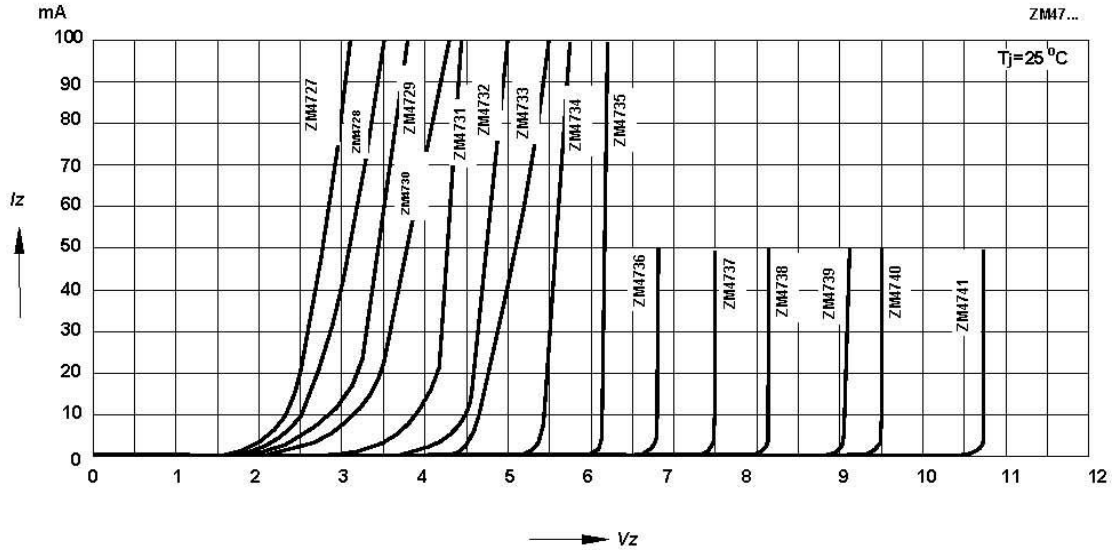
<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature.

<sup>3)</sup> Tested with pulses t<sub>p</sub> = 20 ms.

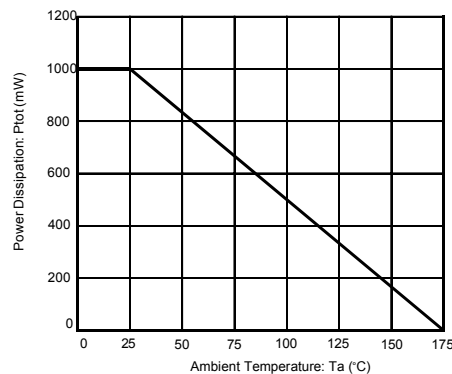
<sup>4)</sup> The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I<sub>ZT</sub>.

**Breakdown characteristics**

T<sub>J</sub>=constant(pulsed)



Power Dissipation vs Ambient Temperature



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