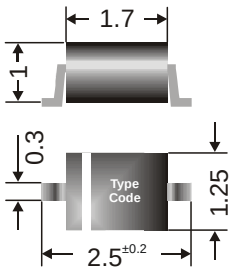
# Surface mount Zener Diodes
# Zener-Dioden für die Oberflächenmontage

*Version 2004-06-22*




Dimensions / Maße in mm

| | |
|---|---|
| Power dissipation – Verlustleistung | 200 mW |
| Nominal Zener voltage<br>Nominale Zener-Spannung | 2.4 ... 100 V |
| Plastic case<br>Kunststoffgehäuse | SOD-323 |
| Weight approx. – Gewicht ca. | 0.005 g |
| Standard packaging taped and reeled<br>Standard Lieferform gegurtet auf Rolle | |

Standard Zener voltage tolerance is graded to the international E 24 (~5%) standard.
Other voltage tolerances and higher Zener voltages on request.
Die Toleranz der Zener-Spannung ist in der Standard-Ausführung gestuft nach der internationalen Reihe E 24 (~5%). Andere Toleranzen oder höhere Arbeitsspannungen auf Anfrage.

## Maximum ratings and Characteristics — Grenz- und Kennwerte

| | | | |
|---|---|---|---|
| Power dissipation<br>Verlustleistung | $T_A$ = 25°C | $P_{tot}$ | 200 mW [1]) |
| Operating junction temperature – Sperrschichttemperatur | | $T_j$ | – 50...+175°C |
| Storage temperature – Lagerungstemperatur | | $T_S$ | – 50...+175°C |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft | | $R_{thA}$ | < 300 K/W [1]) |

Zener voltages see table on next page – Zener-Spannungen siehe Tabelle auf der nächsten Seite

[1]) Mounted on P.C. board with 3 mm² copper pads at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluß

## Maximum ratings — Grenzwerte

| Type<br>Typ | Zener voltage [1])<br>Zener-Spanng. [1])<br>$I_Z=I_{Ztest}$<br>$V_{zmin}$ [V] | $V_{zmax}$ | Test current<br>Meßstrom<br>$I_{ztest}$ [mA] | Dynamic resistance<br>Inhär. diff. Widerstand<br>$r_{zj}$ [Ω]/1kHz | $I_Z$ [mA] | Temp. Coeffiz. of Z-voltage<br>…der Z-spanng.<br>$\alpha_{VZ}$ [$10^{-4}$/°C] | Reverse leak. current at<br>Sperrstrom bei<br>$I_R$ [µA] | $V_R$ [V] |
|---|---|---|---|---|---|---|---|---|
| MM3Z2V4 | 2.28 | 2.56 | 5 | <100 | 5 | -9...-6 | <120 | 1.0 |
| MM3Z2V7 | 2.5 | 2.9 | 5 | <110 | 5 | -9...-6 | <120 | 1.0 |
| MM3Z3V0 | 2.8 | 3.2 | 5 | <120 | 5 | -8...-5 | <50 | 1.0 |
| MM3Z3V3 | 3.1 | 3.5 | 5 | <130 | 5 | -8...-5 | <20 | 1.0 |
| MM3Z3V6 | 3.4 | 3.8 | 5 | <130 | 5 | -8...-5 | <10 | 1.0 |
| MM3Z3V9 | 3.7 | 4.1 | 5 | <130 | 5 | -8…-5 | <10 | 1.0 |
| MM3Z4V3 | 4.0 | 4.6 | 5 | <130 | 5 | -6…-3 | <10 | 1.0 |
| MM3Z4V7 | 4.4 | 5.0 | 5 | <130 | 5 | -5…+2 | <10 | 1.0 |
| MM3Z5V1 | 4.8 | 5.4 | 5 | <130 | 5 | -2…+2 | <5 | 1.5 |
| MM3Z5V6 | 5.2 | 6.0 | 5 | <80 | 5 | -5…+5 | <5 | 2.5 |
| MM3Z6V2 | 5.8 | 6.6 | 5 | <50 | 5 | +3…+6 | <2 | 3.0 |
| MM3Z6V8 | 6.4 | 7.2 | 5 | <30 | 5 | +3…+7 | <2 | 3.5 |
| MM3Z7V5 | 7.0 | 7.9 | 5 | <30 | 5 | +3…+7 | <2 | 4.0 |
| MM3Z8V2 | 7.7 | 8.7 | 5 | <30 | 5 | +3…+8 | <2 | 5.0 |
| MM3Z9V1 | 8.5 | 9.6 | 5 | <30 | 5 | +3…+9 | <2 | 6.0 |
| MM3Z10 | 9.4 | 10.6 | 5 | <30 | 5 | +3…+10 | <2 | 7.0 |
| MM3Z11 | 10.4 | 11.6 | 5 | <30 | 5 | +3…+11 | <2 | 8.0 |
| MM3Z12 | 11.4 | 12.7 | 5 | <35 | 5 | +3…+11 | <2 | 9.0 |
| MM3Z13 | 12.4 | 14.1 | 5 | <35 | 5 | +3…+11 | <2 | 10 |
| MM3Z15 | 13.8 | 15.6 | 5 | <40 | 5 | +3…+11 | <2 | 11 |
| MM3Z16 | 15.3 | 17.1 | 5 | <40 | 5 | +3…+11 | <2 | 12 |
| MM3Z18 | 16.8 | 19.1 | 5 | <45 | 5 | +3…+11 | <2 | 13 |
| MM3Z20 | 18.8 | 21.2 | 5 | <50 | 5 | +3…+11 | <2 | 15 |
| MM3Z22 | 20.8 | 23.3 | 5 | <55 | 5 | +4…+12 | <2 | 17 |
| MM3Z24 | 22.8 | 25.6 | 5 | <60 | 5 | +4…+12 | <2 | 19 |
| MM3Z27 | 25.1 | 28.9 | 5 | <70 | 2 | +4…+12 | <2 | 21 |
| MM3Z30 | 28 | 32 | 5 | <80 | 2 | +4…+12 | <2 | 23 |
| MM3Z33 | 31 | 35 | 5 | <80 | 2 | +4…+12 | <2 | 25 |
| MM3Z36 | 34 | 38 | 5 | <90 | 2 | +4…+12 | <2 | 27 |
| MM3Z39 | 37 | 41 | 2.5 | <100 | 2 | +4…+12 | <2 | 30 |
| MM3Z43 | 40 | 46 | 2.5 | <130 | 2 | +4…+12 | <2 | 33 |
| MM3Z47 | 44 | 50 | 2.5 | <150 | 2 | +4…+12 | <2 | 36 |
| MM3Z51 | 48 | 54 | 2.5 | <180 | 2 | +4…+12 | <1 | 39 |
| MM3Z56 | 52 | 60 | 2.5 | <180 | 2 | +4…+12 | <1 | 43 |
| MM3Z62 | 58 | 66 | 2.5 | <200 | 2 | +4…+12 | <0.2 | 47 |
| MM3Z68 | 64 | 72 | 2.5 | <250 | 2 | +4…+12 | <0.2 | 52 |
| MM3Z75 | 70 | 79 | 2.5 | <300 | 2 | +4…+12 | <0.2 | 57 |
| MM3Z82 | 77 | 87 | 2.5 | <300 | 2 | +5…+12 | <0.2 | 63 |
| MM3Z91 | 85 | 96 | 1 | <700 | 1 | +5…+12 | <0.2 | 69 |
| MM3Z100 | 94 | 106 | 1 | <700 | 1 | +5…+12 | <0.2 | 76 |

[1]) Tested with pulses $t_p$ = 20 ms – Gemessen mit Impulsen $t_p$ = 20 ms