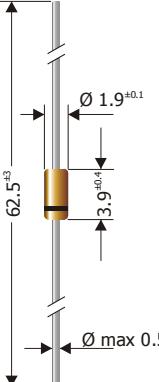


ZPD2.7 ... ZPD75 (500 mW)**Silicon Planar Zener Diodes
Silizium-Planar-Zener-Dioden**

Version 2015-05-13

| | |
|---|------------------------|
|  | Dimensions - Maße [mm] |
|---|------------------------|

| | |
|--|-----------------------|
| Maximum power dissipation Maximale Verlustleistung | 500 mW |
| Nominal Z-voltage Nominale Z-Spannung | 2.7...75 V |
| Glass case Glasgehäuse | ~ DO-35 ~ (SOD-27) |
| Weight approx. Gewicht ca. | 0.13 g |
| Equivalent SMD-version Äquivalente SMD-Ausführung | ZMM1 ... ZMM75 |
| Standard packaging taped in ammo pack Standard Lieferform gegurtet in Ammo-Pack | |



Standard Zener voltage tolerance is graded to the international E 24 ($\sim \pm 5\%$) 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 ($\sim \pm 5\%$). Andere Toleranzen oder höhere Arbeitsspannungen auf Anfrage.

Maximum ratings and Characteristics**Grenz- und Kennwerte**

| ZPD-series | | | |
|---|--------------------------|------------------------------|----------------------|
| Power dissipation Verlustleistung | $T_A = 25^\circ\text{C}$ | P_{tot} | 500 mW ¹⁾ |
| Operating junction temperature – Sperrschiichttemperatur Storage temperature – Lagerungstemperatur | T_j T_S | -50...+175°C -50...+175°C | |
| Thermal resistance junction to ambient air Wärmewiderstand Sperrschiicht – umgebende Luft | R_{thA} | < 300 K/W ¹⁾ | |
| Thermal resistance junction to lead Wärmewiderstand Sperrschiicht – Anschlussdraht | R_{thL} | < 240 K/W | |

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

- 1 Valid, if leads are kept at ambient temperatere at a distance of 10 mm from case
Gültig, wenn die Anschlussdrähte in 10 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden
- 2 Tested with pulses – Gemessen mit Impulsen
- 3 The ZPD1 is a diode operated in forward. Hence, the index of all parameters should be "F" instead of "Z".
The cathode, indicated by a band, has to be connected to the negative pole.
Die ZPD1 ist eine in Durchlass betriebene Si-Diode. Daher ist bei allen Kenn- und Grenzwerten der Index "F" anstatt "Z" zu setzen. Die mit einem Balken gekennzeichnete Kathode ist mit dem Minuspol zu verbinden.

Maximum ratings and Characteristics

(T_j = 25°C unless otherwise specified)

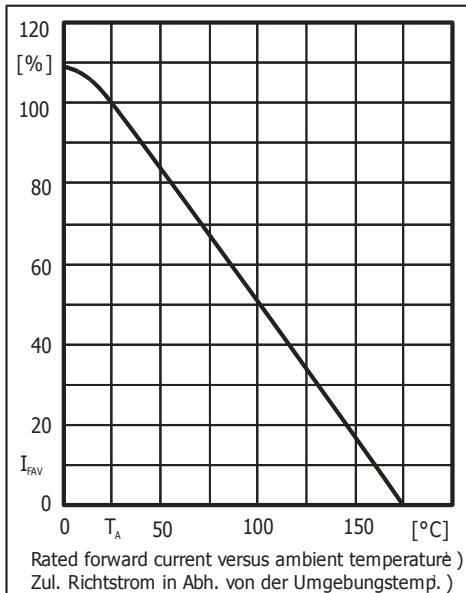
Grenz- und Kennwerte

(T_j = 25°C wenn nicht anders spezifiziert)

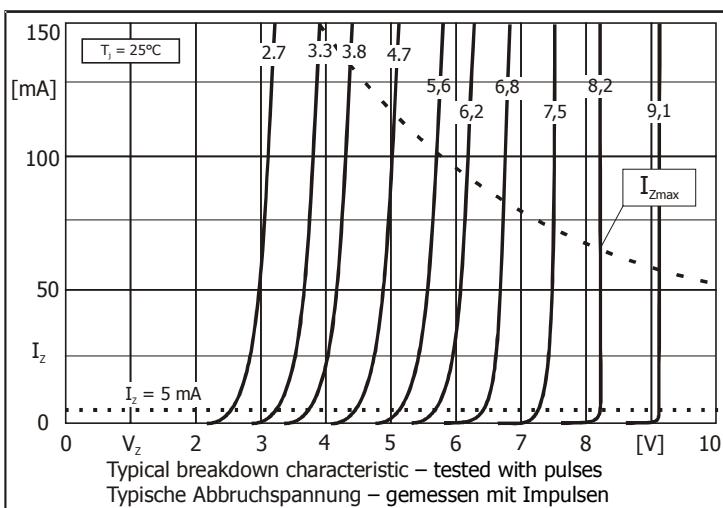
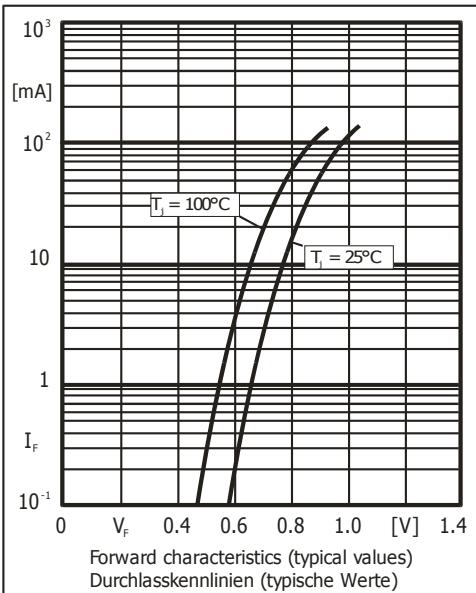
| Type Typ | Zener voltage ²⁾ Zener-Spannung ²⁾ I _Z = 5 mA | | Dynamic resistance Diff. Widerstand r _{zj} [Ω] at f = 1 kHz | | Temp. Coeffic. ... der Z-Spannung | Reverse volt. Sperrspannng. I _R = 100 nA | Z-current ¹⁾ Z-Strom ¹⁾ T _A = 25°C |
|-------------|--|-----------------------|--|-----------------------|--------------------------------------|---|---|
| | V _{zmin} [V] | V _{zmax} [V] | I _Z = 5 mA | I _Z = 1 mA | | | |
| ZPD2.7 | 2.5 | 2.9 | 75 (< 83) | < 500 | -9...-4 | - | 172 |
| ZPD3.0 | 2.8 | 3.2 | 80 (< 95) | < 500 | -9...-3 | - | 156 |
| ZPD3.3 | 3.1 | 3.5 | 80 (< 95) | < 500 | -8...-3 | - | 143 |
| ZPD3.6 | 3.4 | 3.8 | 80 (< 95) | < 500 | -8...-3 | - | 132 |
| ZPD3.9 | 3.7 | 4.1 | 80 (< 95) | < 500 | -7...-3 | - | 122 |
| ZPD4.3 | 4.0 | 4.6 | 70 (< 85) | < 500 | -6...-1 | - | 109 |
| ZPD4.7 | 4.4 | 5.0 | 60 (< 78) | < 500 | -5...+2 | - | 100 |
| ZPD5.1 | 4.8 | 5.4 | 30 (< 60) | < 480 | -3...+4 | > 0.8 | 93 |
| ZPD5.6 | 5.2 | 6.0 | 10 (< 40) | < 400 | -2...+6 | > 1 | 83 |
| ZPD6.2 | 5.8 | 6.6 | 5 (< 10) | < 200 | -1...+7 | > 2 | 76 |
| ZPD6.8 | 6.4 | 7.2 | 4.5 (< 8) | < 150 | +2...+7 | > 3 | 69 |
| ZPD7.5 | 7.0 | 7.9 | 4 (< 7) | < 50 | +3...+7 | > 5 | 63 |
| ZPD8.2 | 7.7 | 8.7 | 4.5 (< 7) | < 50 | +4...+7 | > 6 | 57 |
| ZPD9.1 | 8.5 | 9.6 | 5 (< 10) | < 50 | +5...+8 | > 7 | 52 |
| ZPD10 | 9.4 | 10.6 | 5.2 (< 15) | < 70 | +5...+8 | > 7.5 | 47 |
| ZPD11 | 10.4 | 11.6 | 6 (< 20) | < 70 | +5...+9 | > 8.5 | 43 |
| ZPD12 | 11.4 | 12.7 | 7 (< 20) | < 90 | +6...+9 | > 9 | 39 |
| ZPD13 | 12.4 | 14.1 | 9 (< 25) | < 110 | +7...+9 | > 10 | 35 |
| ZPD15 | 13.8 | 15.6 | 11 (< 30) | < 110 | +7...+9 | > 11 | 32 |
| ZPD16 | 15.3 | 17.1 | 13 (< 40) | < 170 | +8...+9.5 | > 12 | 29 |
| ZPD18 | 16.8 | 19.1 | 18 (< 50) | < 170 | +8...+9.5 | > 14 | 26 |
| ZPD20 | 18.8 | 21.2 | 20 (< 50) | < 220 | +8...+10 | > 15 | 24 |
| ZPD22 | 20.8 | 23.3 | 25 (< 55) | < 220 | +8...+10 | > 17 | 21 |
| ZPD24 | 22.8 | 25.6 | 28 (< 70) | < 220 | +8...+10 | > 18 | 20 |
| ZPD27 | 25.1 | 28.9 | 30 (< 80) | < 250 | +8...+10 | > 20 | 17 |
| ZPD30 | 28 | 32 | 35 (< 80) | < 250 | +8...+10 | > 22 | 16 |
| ZPD33 | 31 | 35 | 40 (< 80) | < 250 | +8...+10 | > 24 | 14 |
| ZPD36 | 34 | 38 | 40 (< 90) | < 250 | +8...+10 | > 26 | 13 |
| ZPD39 | 37 | 41 | 50 (< 90) | < 300 | +10...+12 | > 28 | 12 |
| ZPD43 | 40 | 46 | 60 (< 100) | < 500 | +10...+12 | > 30 | 11 |
| ZPD47 | 44 | 50 | 70 (< 110) | < 700 | +10...+12 | > 33 | 10 |
| ZPD51 | 48 | 54 | 80 (< 125) | < 700 | +10...+12 | > 36 | 9 |
| ZPD56 | 52 | 60 | 90 (< 135) | < 750 | +10...+12 | > 39 | 8 |
| ZPD62 | 58 | 66 | 100 (< 150) | < 800 | +10...+12 | > 44 | 8 |
| ZPD68 | 64 | 72 | 110 (< 200) | < 850 | +10...+12 | > 48 | 7 |
| ZPD75 | 70 | 79 | 120 (< 250) | < 900 | +10...+12 | > 52 | 6 |

¹ Notes see previous page – Fußnoten siehe vorhergehende Seite

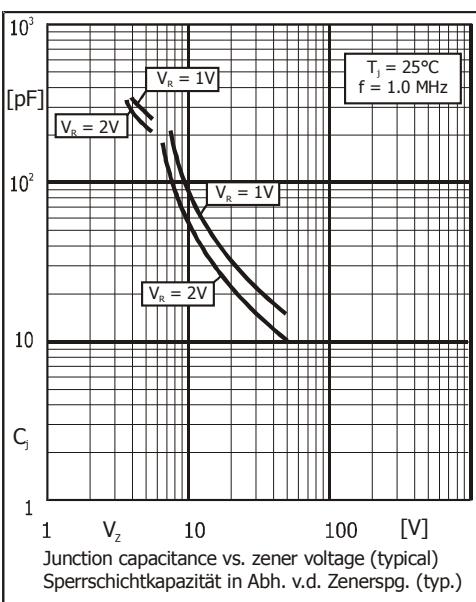
ZPD2.7 ... ZPD75 (500 mW)



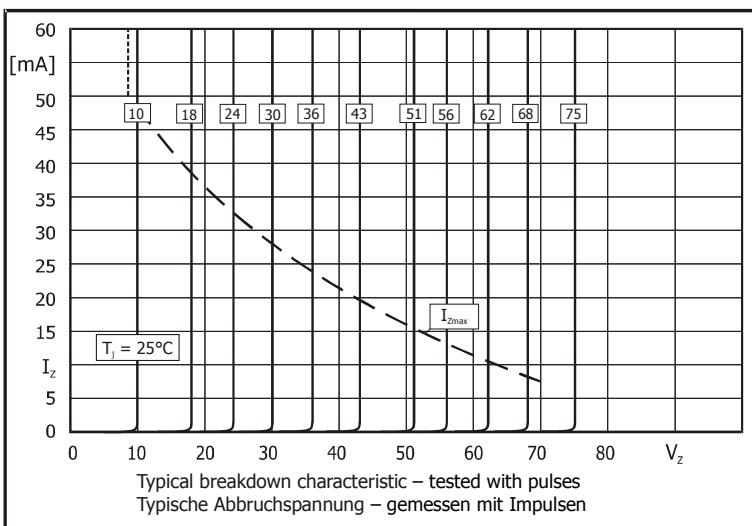
Rated forward current versus ambient temperature
Zul. Richtstrom in Abh. von der Umgebungstemp.)



Typical breakdown characteristic – tested with pulses
Typische Abbruchspannung – gemessen mit Impulsen



Junction capacitance vs. zener voltage (typical)
Sperrschiilkapazitt in Abh. v.d. Zenerspg. (typ.)



Typical breakdown characteristic – tested with pulses
Typische Abbruchspannung – gemessen mit Impulsen

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