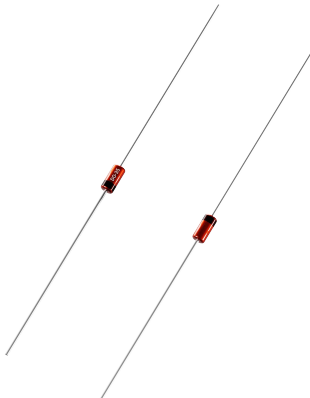


**ZPD2B7 ... ZPD47B**  
**Planar Zener Diodes**  
**Planare Zener-Dioden**
**P<sub>tot</sub> = 500 mW**  
**V<sub>Z</sub> = 2.7 V ... 47 V**  
**T<sub>jmax</sub> = 175°C**

Version 2023-01-16

~DO-35 SOD-27

SPICE Model & STEP File <sup>1)</sup>**Marking**
 Zxx where xx = V<sub>Z</sub>  
 Zxx mit xx = V<sub>Z</sub>
**HS Code** 85411000**Typical Applications**
 Voltage stabilization and regulators  
 (For overvoltage protection  
 – uni- and bi-directional – see  
 TVS diodes BZW04/P4KE series)  
 Commercial /industrial grade  
 Suffix -Q/-AQ - AEC-Q101 qualified:  
 not available. <sup>1)</sup>
**Features**
 ~ ±2% tolerance of Zener voltage  
 Sharp Zener voltage breakdown  
 Low leakage current  
 Compliant to RoHS (exemp. 7c-I),  
 REACH, Conflict Minerals <sup>1)</sup>
**Mechanical Data <sup>1)</sup>**

|                              |           |
|------------------------------|-----------|
| Taped in ammo pack           | 5000      |
| Weight approx.               | 0.17 g    |
| Solder & assembly conditions | 260°C/10s |
|                              | MSL N/A   |

**Typische Anwendungen**
 Spannungsstabilisierung und -regler  
 (Für Überspannungsschutz  
 – uni- und bidirektional – siehe  
 TVS-Diodenreihe BZW04/P4KE series)  
 Standardausführung  
 Suffix -Q/-AQ - AEC-Q101 qualifiziert:  
 nicht erhältlich. <sup>1)</sup>
**Besonderheiten**
 ~ ±2% Toleranz der Zener-Spannung  
 Scharfer Zenerspannungsabbruch  
 Niedriger Sperrstrom  
 Konform zu RoHS (Ausn. 7c-I),  
 REACH, Konfliktminerale <sup>1)</sup>
**Mechanische Daten <sup>1)</sup>**

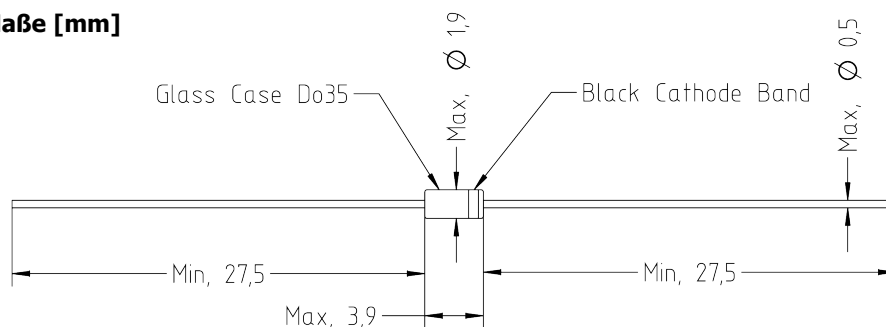
|                            |           |
|----------------------------|-----------|
| Gegurtet in Ammo-Pack      |           |
| Gewicht ca.                | 0.17 g    |
| Löt- und Einbaubedingungen | 260°C/10s |

**Maximum ratings <sup>2)</sup>****Grenzwerte <sup>2)</sup>**

|   |                       |                  |                      |
|---|-----------------------|------------------|----------------------|
| Power dissipation – Verlustleistung                     | T <sub>A</sub> = 25°C | P <sub>tot</sub> | 500 mW <sup>3)</sup> |
| Operating junction temperature – Sperrschichttemperatur |                       | T <sub>j</sub>   | -50...+175°C         |
| Storage temperature – Lagerungstemperatur               |                       | T <sub>S</sub>   | -50...+175°C         |

**Characteristics****Kennwerte**

|   |                       |                         |                  |                       |
|---|-----------------------|-------------------------|------------------|-----------------------|
| Forward voltage – Durchlass-Spannung  | T <sub>j</sub> = 25°C | I <sub>F</sub> = 100 mA | V <sub>F</sub>   | < 1.0 V               |
| Typical thermal resistance junction to ambient<br>Typischer Wärmewiderstand Sperrschicht – Umgebung |                       |                         | R <sub>thA</sub> | 300 K/W <sup>3)</sup> |
| Thermal resistance junction to lead<br>Wärmewiderstand Sperrschicht – Anschlussdraht                |                       |                         | R <sub>thL</sub> | 240 K/W               |

**Dimensions - Maße [mm]**

- 1 Please note the [detailed information on our website](#) or at the beginning of the data book  
Bitte beachten Sie die [detaillierten Hinweise auf unserer Internetseite](#) bzw. am Anfang des Datenbuches
- 2 T<sub>A</sub> = 25°C unless otherwise specified – T<sub>A</sub> = 25°C wenn nicht anders angegeben
- 3 Valid, if leads are kept at ambient temperature at a distance of 10 mm from case  
Gültig, wenn die Anschlussdrähte in 10 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

**Characteristics**

 (T<sub>j</sub> = 25°C unless otherwise specified)

**Kennwerte**

 (T<sub>j</sub> = 25°C wenn nicht anders spezifiziert)

| Type<br>Typ | Zener voltage <sup>1)</sup><br>Zener-Spannung <sup>1)</sup><br>I <sub>Z</sub> = 5 mA |                       | Dynamic resistance<br>Diff. Widerstand<br>r <sub>Zj</sub> [Ω] at f = 1 kHz |                         | Temp. Coeff.<br>of Z-voltage<br>...der Z-Spannung | Reverse volt.<br>Sperrspanng.<br>I <sub>R</sub> = 100 nA | Z-current <sup>2)</sup><br>Z-Strom <sup>2)</sup><br>T <sub>A</sub> = 25°C |
|-------------|--|-----------------------|--|-------------------------|---|--|---|
|             | V <sub>Zmin</sub> [V]  | V <sub>Zmax</sub> [V] | I <sub>Z</sub> = 5 mA  | I <sub>Z</sub> = 1 mA   | α <sub>VZ</sub> [10 <sup>-4</sup> /°C]            | V <sub>R</sub> [V]                                       | I <sub>Zmax</sub> [mA]  |
| ZPD2B7      | 2.65   | 2.75                  | 75 (< 83)  | < 500                   | -9...-4   | -  | 160   |
| ZPD3B0      | 2.94   | 3.06                  | 80 (< 95)  | < 500                   | -9...-3   | -  | 140   |
| ZPD3B3      | 3.23   | 3.37                  | 80 (< 95)  | < 500                   | -8...-3   | -  | 130   |
| ZPD3B6      | 3.53   | 3.67                  | 80 (< 95)  | < 500                   | -8...-3   | -  | 120   |
| ZPD3B9      | 3.82   | 3.98                  | 80 (< 95)  | < 500                   | -7...-3   | -  | 110   |
| ZPD4B3      | 4.21   | 4.39                  | 70 (< 85)  | < 500                   | -6...-1   | -  | 100   |
| ZPD4B7      | 4.61   | 4.79                  | 60 (< 78)  | < 500                   | -5...+2   | -  | 90  |
| ZPD5B1      | 5.00   | 5.20                  | 30 (< 60)  | < 480                   | -3...+4   | > 0.8  | 80  |
| ZPD5B6      | 5.49   | 5.71                  | 10 (< 40)  | < 400                   | -2...+6   | > 1  | 70  |
| ZPD6B2      | 6.08   | 6.32                  | 5 (< 10)   | < 200                   | -1...+7   | > 2  | 64  |
| ZPD6B8      | 6.66   | 6.94                  | 4.5 (< 8)  | < 150                   | +2...+7   | > 3  | 58  |
| ZPD7B5      | 7.34   | 7.65                  | 4 (< 7)  | < 50                    | +3...+7   | > 5  | 53  |
| ZPD8B2      | 8.04   | 8.36                  | 4.5 (< 7)  | < 50                    | +4...+7   | > 6  | 47  |
| ZPD9B1      | 8.92   | 9.28                  | 5 (< 10)   | < 50                    | +5...+8   | > 7  | 43  |
| ZPD10B      | 9.80   | 10.20                 | 5.2 (< 15)   | < 70                    | +5...+8   | > 7.5  | 40  |
| ZPD11B      | 10.80  | 11.20                 | 6 (< 20)   | < 70                    | +5...+9   | > 8.5  | 36  |
| ZPD12B      | 11.80  | 12.20                 | 7 (< 20)   | < 90                    | +6...+9   | > 9  | 32  |
| ZPD13B      | 12.70  | 13.30                 | 9 (< 25)   | < 110                   | +7...+9   | > 10   | 29  |
| ZPD15B      | 14.70  | 15.30                 | 11 (< 30)  | < 110                   | +7...+9   | > 11   | 27  |
| ZPD16B      | 15.70  | 16.30                 | 13 (< 40)  | < 170                   | +8...+9.5   | > 12   | 24  |
| ZPD18B      | 17.60  | 18.40                 | 18 (< 50)  | < 170                   | +8...+9.5   | > 14   | 21  |
| ZPD20B      | 19.60  | 20.40                 | 20 (< 50)  | < 220                   | +8...+10  | > 15   | 20  |
| ZPD22B      | 21.60  | 22.40                 | 25 (< 55)  | < 220                   | +8...+10  | > 17   | 18  |
| ZPD24B      | 23.50  | 24.50                 | 28 (< 70)  | < 220                   | +8...+10  | > 18   | 16  |
| ZPD27B      | 26.50  | 27.50                 | 30 (< 80)  | < 250                   | +8...+10  | > 20   | 14  |
| ZPD30B      | 29.40  | 30.60                 | 35 (< 80)  | < 250                   | +8...+10  | > 22.5   | 13  |
| ZPD33B      | 32.30  | 33.70                 | 40 (< 80)  | < 250                   | +8...+10  | > 25   | 12  |
| ZPD36B      | 35.30  | 36.70                 | 40 (< 90)  | < 250                   | +8...+10  | > 27   | 11  |
| ZPD39B      | 38.20  | 39.80                 | 50 (< 90)  | < 300                   | +10...+12   | > 29   | 10  |
| ZPD43B      | 42.10  | 43.90                 | 60 (< 100)   | < 500                   | +10...+12   | > 32   | 9.2   |
| ZPD47B      | 46.10  | 47.90                 | 70 (< 100)   | < 700                   | +10...+12   | > 35   | 8.5   |
| ZPD51B      | 50.00  | 52.00                 | 70 (< 100)   | < 750                   | +10...+12   | > 38   | 7.8   |
|             |  |                       | I <sub>Z</sub> = 2.5 mA  | I <sub>Z</sub> = 0.5 mA |   |  |   |
| ZPD56B      | 54.90  | 57.10                 | < 135  | < 1000                  | +10...+12   | > 42   | 7.1   |
| ZPD62B      | 60.80  | 63.20                 | < 150  | < 1000                  | +10...+12   | > 47   | 6.4   |
| ZPD68B      | 66.60  | 69.40                 | < 200  | < 1000                  | +10...+12   | > 51   | 5.8   |
| ZPD75B      | 73.50  | 76.50                 | < 250  | < 1500                  | +10...+12   | > 55   | 5.3   |

**Disclaimer:** See data book page 2 or [website](#)
**Haftungsausschluss:** Siehe Datenbuch Seite 2 oder [Internet](#)

1 Tested with pulses – Gemessen mit Impulsen

2 Valid, if leads are kept at ambient temperature at a distance of 10 mm from case

Gültig, wenn die Anschlussdrähte in 10 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden