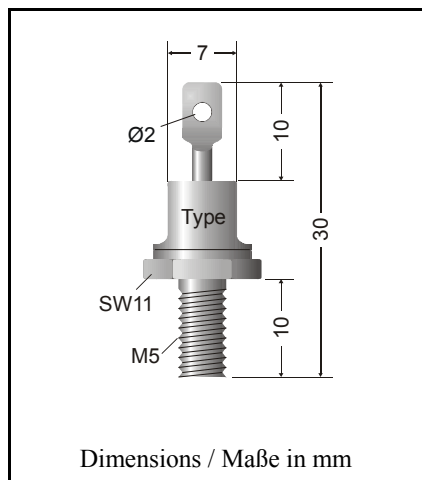


**Silicon-Power-Z-Diodes  
(non-planar technology)**

**Silizium-Leistungs-Z-Dioden  
(flächendiffundierte Dioden)**



|   |  |
|---|--|
| Maximum power dissipation<br>Maximale Verlustleistung | 12.5 W                                 |
| Nominal Z-voltage – Nominale Z-Spannung               | 3.9...200 V                            |
| Metal case – Metallgehäuse                            | DO-4                                   |
| Weight approx. – Gewicht ca.                          | 5.5 g                                  |
| Standard polarity:                                    | Cathode to stud / Gewinde              |
| Index R:  | Anode to stud / Gewinde (e.g. ZX ...R) |
| Standard packaging: bulk                              |  |
| Standard Lieferform: lose im Karton                   |  |

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   | Grenzwerte           |           |                       |
|---|----------------------|-----------|-----------------------|
| Power dissipation without cooling fin<br>Verlustleistung ohne Kühlblech                                     | $T_A = 25\text{ °C}$ | $P_{tot}$ | 1.6 W                 |
| Power dissipation with cooling fin 150 cm <sup>2</sup><br>Verlustleistung mit Kühlblech 150 cm <sup>2</sup> | $T_A = 25\text{ °C}$ | $P_{tot}$ | 12.5 W                |
| Non repetitive peak power dissipation, t < 10 ms<br>Einmalige Impuls-Verlustleistung, t < 10 ms             | $T_A = 25\text{ °C}$ | $P_{ZSM}$ | 100 W                 |
| Admissible torque for mounting on cooling fin<br>Zulässiges Anzugsdrehmoment                                |                      |           | 1 Nm                  |
| Operating junction temperature – Sperrschichttemperatur   |                      | $T_j$     | - 55...+150 °C        |
| Storage temperature – Lagerungstemperatur   |                      | $T_s$     | - 55...+175 °C        |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft                 |                      | $R_{thA}$ | < 80 K/W              |
| Thermal resistance junction to stud<br>Wärmewiderstand Sperrschicht – Schraube                              |                      | $R_{thC}$ | < 5 K/W <sup>1)</sup> |

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

<sup>1)</sup> Valid if mounted on vertical cooling fin 150 cm<sup>2</sup> – Gültig bei Montage auf senkrecht stehendem Kühlblech 150 cm<sup>2</sup>  
10.09.2002

**Maximum ratings**
**Grenzwerte**

| Type<br>Typ | Zener voltage <sup>1)</sup><br>Zener-Spanng. <sup>1)</sup><br>$I_Z = I_{Ztest}$<br>$V_{Zmin}$ [V] $V_{Zmax}$ |      | Test<br>current<br>Meßstrom<br>$I_{Ztest}$ [mA] | Dyn. resistance<br>Diff. Widerst.<br>$I_{Ztest} / 1 \text{ kHz}$<br>$r_{zj}$ [ $\Omega$ ] | Temp. Coeffiz.<br>of Z-voltage<br>...der Z-spanng.<br>$\alpha_{VZ}$ [ $10^{-4}/^\circ\text{C}$ ] | Reverse volt.<br>Sperrspanng.<br>$I_R = 100 \text{ nA}$<br>$V_R$ [V] | Max. Z-current<br>Max. Z-Strom<br>$T_A = 50^\circ\text{C}$<br>$I_Z$ <sup>2)</sup> [mA] $I_Z$ <sup>3)</sup> |      |
|-------------|--|------|---|---|--|--|--|------|
| ZX 3.9      | 3.7  | 4.1  | 100   | 3.8 (<7)  | -7...+2  | -  | 340  | 2700 |
| ZX 4.3      | 4.0  | 4.6  | 100   | 3.8 (<7)  | -7...+3  | -  | 305  | 2400 |
| ZX 4.7      | 4.4  | 5.0  | 100   | 3 (<6)  | -7...+4  | -  | 280  | 2250 |
| ZX 5.1      | 4.8  | 5.4  | 100   | 2 (<5)  | -6...+5  | -  | 260  | 2000 |
| ZX 5.6      | 5.2  | 6.0  | 100   | 1 (<3)  | -3...+5  | > 1.5  | 230  | 1800 |
| ZX 6.2      | 5.8  | 6.6  | 100   | 1 (<2)  | -1...+6  | > 1.5  | 210  | 1700 |
| ZX 6.8      | 6.4  | 7.2  | 100   | 1 (<2)  | 0...+7   | > 2  | 195  | 1550 |
| ZX 7.5      | 7.0  | 7.9  | 100   | 1 (<2)  | 0...+7   | > 2  | 175  | 1400 |
| ZX 8.2      | 7.7  | 8.7  | 100   | 1 (<2)  | +3...+8  | > 3.5  | 160  | 1250 |
| ZX 9.1      | 8.5  | 9.6  | 50  | 2 (<4)  | +3...+8  | > 3.5  | 145  | 1150 |
| ZX 10       | 9.4  | 10.6 | 50  | 2 (<4)  | +5...+9  | > 5  | 130  | 1050 |
| ZX 11       | 10.4   | 11.6 | 50  | 3 (<6)  | +5...+10   | > 5  | 120  | 970  |
| ZX 12       | 11.4   | 12.7 | 50  | 4 (<7)  | +5...+10   | > 7  | 110  | 880  |
| ZX 13       | 12.4   | 14.1 | 50  | 5 (<9)  | +5...+10   | > 7  | 100  | 790  |
| ZX 15       | 13.8   | 15.6 | 50  | 5 (<10)   | +5...+10   | > 10   | 90   | 720  |
| ZX 16       | 15.3   | 17.1 | 25  | 6 (<12)   | +6...+11   | > 10   | 82   | 650  |
| ZX 18       | 16.8   | 19.1 | 25  | 6 (<15)   | +6...+11   | > 10   | 74   | 580  |
| ZX 20       | 18.8   | 21.2 | 25  | 6 (<15)   | +6...+11   | > 10   | 66   | 530  |
| ZX 22       | 20.8   | 23.3 | 25  | 6 (<15)   | +6...+11   | > 12   | 60   | 480  |
| ZX 24       | 22.8   | 25.6 | 25  | 7 (<15)   | +6...+11   | > 12   | 55   | 430  |
| ZX 27       | 25.1   | 28.9 | 25  | 7 (<15)   | +6...+11   | > 14   | 49   | 380  |
| ZX 30       | 28   | 32   | 25  | 8 (<15)   | +6...+11   | > 14   | 44   | 350  |
| ZX 33       | 31   | 35   | 25  | 8 (<15)   | +6...+11   | > 17   | 40   | 320  |
| ZX 36       | 34   | 38   | 10  | 16 (<30)  | +6...+11   | > 17   | 37   | 290  |
| ZX 39       | 37   | 41   | 10  | 20 (<40)  | +6...+11   | > 20   | 34   | 270  |
| ZX 43       | 40   | 46   | 10  | 24 (<40)  | +7...+12   | > 20   | 31   | 245  |
| ZX 47       | 44   | 50   | 10  | 24 (<40)  | +7...+12   | > 24   | 28   | 225  |
| ZX 51       | 48   | 54   | 10  | 25 (<60)  | +7...+12   | > 24   | 26   | 200  |
| ZX 56       | 52   | 60   | 10  | 25 (<60)  | +7...+12   | > 28   | 23   | 185  |
| ZX 62       | 58   | 66   | 10  | 25 (<80)  | +8...+13   | > 28   | 21   | 170  |
| ZX 68       | 64   | 72   | 10  | 25 (<80)  | +8...+13   | > 34   | 20   | 155  |
| ZX 75       | 70   | 79   | 10  | 30 (<100)   | +8...+13   | > 34   | 18   | 140  |
| ZX 82       | 77   | 88   | 10  | 30 (<100)   | +8...+13   | > 41   | 16   | 125  |
| ZX 91       | 85   | 96   | 5   | 40 (<150)   | +9...+13   | > 41   | 15   | 115  |
| ZX 100      | 94   | 106  | 5   | 60 (<150)   | +9...+13   | > 50   | 13   | 105  |
| ZX 110      | 104  | 116  | 5   | 80 (<200)   | +9...+13   | > 50   | 12   | 97   |
| ZX 120      | 114  | 127  | 5   | 80 (<200)   | +9...+13   | > 60   | 11   | 89   |
| ZX 130      | 124  | 141  | 5   | 90 (<250)   | +9...+13   | > 60   | 10   | 80   |
| ZX 150      | 138  | 156  | 5   | 100 (<250)  | +9...+13   | > 75   | 9  | 72   |
| ZX 160      | 153  | 171  | 5   | 110 (<300)  | +9...+13   | > 75   | 8  | 66   |
| ZX 180      | 168  | 191  | 5   | 120 (<350)  | +9...+13   | > 90   | 7  | 59   |
| ZX 200      | 188  | 212  | 5   | 150 (<350)  | +9...+13   | > 90   | 7  | 53   |

<sup>1)</sup> Tested with pulses – Gemessen mit Impulsen

<sup>2)</sup> Without cooling fin – Ohne Kühlblech

<sup>3)</sup> Valid if mounted on vertical cooling fin 150 cm<sup>2</sup> – Gültig bei Montage auf senkrecht stehendem Kühlblech 150 cm<sup>2</sup>