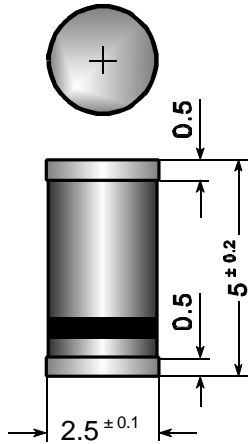


**Surface mount  
Silicon-Power-Z-Diodes**
**Silizium-Leistungs-Z-Dioden  
für die Oberflächenmontage**


Dimensions / Maße in mm

|   |                               |
|---|-------------------------------|
| Nominal breakdown voltage<br>Nenn-Arbeitsspannung                                     | 1...200 V                     |
| Standard tolerance of Z-voltage<br>Standard-Toleranz der Arbeitsspannung              | ± 5 % (E24)                   |
| Plastic case MELF<br>Kunststoffgehäuse MELF   | DO-213AB                      |
| Weight approx. – Gewicht ca.  | 0.12 g                        |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert |                               |
| Standard packaging taped and reeled<br>Standard Lieferform getupet auf Rolle          | see page 18<br>siehe Seite 18 |

**Maximum ratings**
**Grenzwerte**

|                                      |                      |           |                     |
|--------------------------------------|----------------------|-----------|---------------------|
| Power dissipation<br>Verlustleistung | $T_A = 25\text{ °C}$ | $P_{tot}$ | 2.0 W <sup>1)</sup> |
|--------------------------------------|----------------------|-----------|---------------------|

Z-voltages see table on next page.

Other voltage tolerances and higher Z-voltages on request.

Arbeitsspannungen siehe Tabelle auf der nächsten Seite.

Andere Toleranzen oder höhere Arbeitsspannungen auf Anfrage.

|   |       |               |
|---|-------|---------------|
| Operating junction temperature – Sperrschichttemperatur | $T_j$ | – 50...+150°C |
| Storage temperature – Lagerungstemperatur               | $T_s$ | – 50...+175°C |

**Characteristics**
**Kennwerte**

|   |           |                        |
|---|-----------|------------------------|
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft | $R_{thA}$ | < 45 K/W <sup>2)</sup> |
|---|-----------|------------------------|

<sup>1)</sup> Valid, if the temperature of the terminals is kept to 100°C

Gültig, wenn die Temperatur der Anschlüsse auf 100°C gehalten wird

<sup>2)</sup> Valid, if mounted on P.C. board with 50 mm<sup>2</sup> copper pads at each terminal

Dieser Wert gilt bei Montage auf Leiterplatte mit 50 mm<sup>2</sup> Kupferbelag (Löt-pad) an jedem Anschluß

| Maximum ratings     |                           |                         |   |  |                       | Grenzwerte                   |
|---------------------|---------------------------|-------------------------|---|--|-----------------------|------------------------------|
| Type                | Zener volt. <sup>2)</sup> | Test current            | Dynamic resistance                      | Temp.Coeffiz.                              | Reverse volt.         | Max. Z-current <sup>1)</sup> |
| Typ                 | Arbeitsspg. <sup>2)</sup> | Meßstrom                | Inhär.diff. Widerstand                  | of Z-voltage                               | Sperrspanng.          | Arbeitsstrom <sup>1)</sup>   |
|                     | $I_Z = I_{Z\text{test}}$  |                         | $f=1\text{kHz}, I_Z = I_{Z\text{test}}$ | ...der Z-spg.                              | $I_R = 1 \mu\text{A}$ | $T_A = 45^\circ\text{C}$     |
|                     | $U_Z$ [V]                 | $I_{Z\text{test}}$ [mA] | $r_{zj}$ [ $\Omega$ ]                   | $\alpha_{vZ} 10^{-4}$ [ $^\circ\text{C}$ ] | $U_R$ [V]             | $I_Z$ [mA]                   |
| SMZ 1 <sup>3)</sup> | 0.71...0.82               | 100                     | 0.5 (<1)                                | -26...+16                                  | -                     | 1000                         |
| SMZ 3.9             | 3.7...4.1                 | 100                     | 3.8 (<7)                                | -7...+2                                    | -                     | 410                          |
| SMZ 4.3             | 4.0...4.6                 | 100                     | 3.8 (<7)                                | -7...+3                                    | -                     | 360                          |
| SMZ 4.7             | 4.4...5.0                 | 100                     | 3.8 (<7)                                | -7...+4                                    | -                     | 330                          |
| SMZ 5.1             | 4.8...5.4                 | 100                     | 2 (<5)                                  | -6...+5                                    | -                     | 300                          |
| SMZ 5.6             | 5.2...6.0                 | 100                     | 1 (<2)                                  | -3...+5                                    | >1.5                  | 275                          |
| SMZ 6.2             | 5.8...6.6                 | 100                     | 1 (<2)                                  | -1...+6                                    | >1.5                  | 245                          |
| SMZ 6.8             | 6.4...7.2                 | 100                     | 1 (<2)                                  | 0...+7                                     | >2.0                  | 220                          |
| SMZ 7.5             | 7.0...7.9                 | 100                     | 1 (<2)                                  | 0...+7                                     | >2.0                  | 200                          |
| SMZ 8.2             | 7.7...8.7                 | 100                     | 1 (<2)                                  | +3...+8                                    | >3.5                  | 180                          |
| SMZ 9.1             | 8.5...9.6                 | 50                      | 2 (<4)                                  | +3...+8                                    | >3.5                  | 165                          |
| SMZ 10              | 9.4...10.6                | 50                      | 2 (<4)                                  | +5...+9                                    | >5                    | 145                          |
| SMZ 11              | 10.4...11.6               | 50                      | 4 (<7)                                  | +5...+10                                   | >5                    | 135                          |
| SMZ 12              | 11.4...12.7               | 50                      | 4 (<7)                                  | +5...+10                                   | >7                    | 120                          |
| SMZ 13              | 12.4...14.1               | 50                      | 5 (<10)                                 | +5...+10                                   | >7                    | 110                          |
| SMZ 15              | 13.8...15.8               | 50                      | 5 (<10)                                 | +5...+10                                   | >10                   | 98                           |
| SMZ 16              | 15.3...17.1               | 25                      | 6 (<15)                                 | +6...+11                                   | >10                   | 90                           |
| SMZ 18              | 16.8...19.1               | 25                      | 6 (<15)                                 | +6...+11                                   | >10                   | 80                           |
| SMZ 20              | 18.8...21.2               | 25                      | 6 (<15)                                 | +6...+11                                   | >10                   | 72                           |
| SMZ 22              | 20.8...23.3               | 25                      | 6 (<15)                                 | +6...+11                                   | >12                   | 66                           |
| SMZ 24              | 22.8...25.6               | 25                      | 7 (<15)                                 | +6...+11                                   | >12                   | 60                           |
| SMZ 27              | 25.1...28.9               | 25                      | 7 (<15)                                 | +6...+11                                   | >14                   | 53                           |
| SMZ 30              | 28...32                   | 25                      | 8 (<15)                                 | +6...+11                                   | >14                   | 48                           |
| SMZ 33              | 31...35                   | 25                      | 8 (<15)                                 | +6...+11                                   | >17                   | 44                           |
| SMZ 36              | 34...38                   | 10                      | 21 (<40)                                | +6...+11                                   | >17                   | 40                           |
| SMZ 39              | 37...41                   | 10                      | 21 (<40)                                | +6...+11                                   | >20                   | 37                           |
| SMZ 43              | 40...46                   | 10                      | 24 (<45)                                | +7...+12                                   | >20                   | 33                           |
| SMZ 47              | 44...50                   | 10                      | 24 (<45)                                | +7...+12                                   | >24                   | 30                           |
| SMZ 51              | 48...54                   | 10                      | 25 (<60)                                | +7...+12                                   | >24                   | 27                           |
| SMZ 56              | 52...60                   | 10                      | 25 (<60)                                | +7...+12                                   | >28                   | 25.5                         |
| SMZ 62              | 58...66                   | 10                      | 25 (<80)                                | +8...+13                                   | >28                   | 21                           |
| SMZ 68              | 64...72                   | 10                      | 25 (<80)                                | +8...+13                                   | >34                   | 20                           |
| SMZ 75              | 70...79                   | 10                      | 30 (<100)                               | +8...+13                                   | >34                   | 18                           |
| SMZ 82              | 77...88                   | 10                      | 30 (<100)                               | +8...+13                                   | >41                   | 16                           |
| SMZ 91              | 85...96                   | 5                       | 60 (<200)                               | +9...+13                                   | >41                   | 15                           |
| SMZ 100             | 94...106                  | 5                       | 60 (<200)                               | +9...+13                                   | >50                   | 13                           |
| SMZ 110             | 104...116                 | 5                       | 80 (<250)                               | +9...+13                                   | >50                   | 12                           |
| SMZ 120             | 114...127                 | 5                       | 80 (<250)                               | +9...+13                                   | >60                   | 11                           |
| SMZ 130             | 124...141                 | 5                       | 110 (<300)                              | +9...+13                                   | >60                   | 10                           |
| SMZ 150             | 138...156                 | 5                       | 110 (<300)                              | +9...+13                                   | >75                   | 9                            |
| SMZ 160             | 153...171                 | 5                       | 150 (<350)                              | +9...+13                                   | >75                   | 8.5                          |
| SMZ 180             | 168...191                 | 5                       | 150 (<350)                              | +9...+13                                   | >90                   | 8                            |
| SMZ 200             | 188...212                 | 5                       | 150 (<350)                              | +9...+13                                   | >90                   | 7.5                          |

<sup>1)</sup> Valid, if the temp. of the terminals is kept to 100°C – Gültig, wenn die Temp. der Anschlüsse auf 100°C gehalten wird

<sup>2)</sup> Tested with pulses – Gemessen mit Impulsen

<sup>3)</sup> The SMZ 1 is a Si-diode operated in forward direction. Hence, the index of all parameters should be "F" instead of "Z". The cathode, indicated by colored ring(s) is to be connected to the negative pole.

Die SMZ 1 ist eine in Durchlaß betriebene Si-Diode. Daher ist bei allen Parametern der Index "F" anstatt "Z" zu setzen. Der durch Ring(e) gekennzeichnete Anschluß ist mit dem Minuspol zu verbinden.