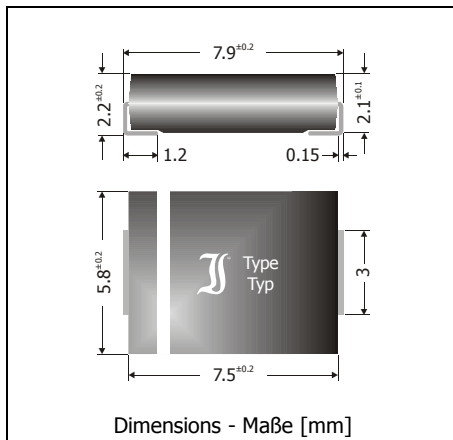


**Z3SMC1 ... Z3SMC200 (3 W)**

**Surface Mount Silicon-Zener Diodes (non-planar technology)**  
**Flächendiffundierte Si-Zener-Dioden für die Oberflächenmontage**

Version 2006-04-24



Maximum power dissipation

3 W

Maximale Verlustleistung

Nominal Z-voltage

1...200 V

Nominale Z-Spannung

Plastic case

~ SMC

Kunststoffgehäuse

~ DO-214AB

Weight approx. – Gewicht ca.

0.21 g

Plastic material has UL classification 94V-0

Gehäusematerial UL94V-0 klassifiziert

Standard packaging taped and reeled

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**

|                                                                                                     |                          | <b>Z3SMC-series</b> |                        |
|-----------------------------------------------------------------------------------------------------|--------------------------|---------------------|------------------------|
| Power dissipation – Verlustleistung                                                                 | $T_A = 50^\circ\text{C}$ | $P_{\text{tot}}$    | 3 W <sup>1)</sup>      |
| Non repetitive peak power dissipation, $t < 10$ ms<br>Einmalige Impuls-Verlustleistung, $t < 10$ ms | $T_A = 25^\circ\text{C}$ | $P_{\text{ZSM}}$    | 60 W                   |
| Operating junction temperature – Sperrschichttemperatur                                             |                          | $T_j$               | -50...+150°C           |
| Storage temperature – Lagerungstemperatur                                                           |                          | $T_s$               | -50...+175°C           |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft         |                          | $R_{\text{thA}}$    | < 33 K/W <sup>1)</sup> |
| Thermal resistance junction to terminal<br>Wärmewiderstand Sperrschicht – Anschluss                 |                          | $R_{\text{thT}}$    | < 10 K/W               |
| Zener voltages see table on next page – Zener-Spannungen siehe Tabelle auf der nächsten Seite       |                          |                     |                        |

1 Mounted on P.C. board with 50 mm<sup>2</sup> copper pads at each terminal  
 Montage auf Leiterplatte mit 50 mm<sup>2</sup> Kupferbelag (Lötpad) an jedem Anschluss

2 Tested with pulses – Gemessen mit Impulsen

3 The Z3SMC1 is a diode operated in forward. Hence, the index of all parameters should be "F" instead of "Z".  
 The cathode, indicated by a white band, has to be connected to the negative pole.  
 Die Z3SMC1 ist eine in Durchlass betriebene Si-Diode. Daher ist bei allen Kenn- und Grenzwerten der Index "F" anstatt "Z" zu setzen. Die mit weißem Balken gekennzeichnete Kathode ist mit dem Minuspol zu verbinden.

**Maximum ratings**
**Grenzwerte**

| Type<br>Typ          | Zener voltage <sup>2)</sup><br>Zener-Spannung <sup>2)</sup><br>$I_Z = I_{Ztest}$ |                | Test current<br>Meßstrom<br>$I_{Ztest}$ | Dynamic resistance<br>Diff. Widerstand<br>$I_{Ztest} / f = 1 \text{ kHz}$ | Temp. Coeff.<br>of Z-voltage<br>...der Z-Spannung<br>$\alpha_{VZ}$ | Reverse volt.<br>Sperrspanng.<br>$I_R = 1 \mu A$ | Z-current <sup>1)</sup><br>Z-Strom <sup>1)</sup><br>$T_A = 50^\circ C$ |
|----------------------|----------------------------------------------------------------------------------|----------------|-----------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|
|                      | $V_{Zmin}$ [V]                                                                   | $V_{Zmax}$ [V] |                                         |                                                                           |                                                                    |                                                  |                                                                        |
| Z3SMC1 <sup>3)</sup> | 0.71                                                                             | 0.82           | 100                                     | 0.5 (<1)                                                                  | -26...-16                                                          | -                                                | 2000                                                                   |
| Z3SMC6.2             | 5.8                                                                              | 6.6            | 100                                     | 1 (<2)                                                                    | -1...+6                                                            | > 1.5                                            | 455                                                                    |
| Z3SMC6.8             | 6.4                                                                              | 7.2            | 100                                     | 1 (<2)                                                                    | 0...+7                                                             | > 2                                              | 417                                                                    |
| Z3SMC7.5             | 7.0                                                                              | 7.9            | 100                                     | 1 (<2)                                                                    | 0...+7                                                             | > 2                                              | 380                                                                    |
| Z3SMC8.2             | 7.7                                                                              | 8.7            | 100                                     | 1 (<2)                                                                    | +3...+8                                                            | > 3.5                                            | 345                                                                    |
| Z3SMC9.1             | 8.5                                                                              | 9.6            | 50                                      | 2 (<4)                                                                    | +3...+8                                                            | > 3.5                                            | 313                                                                    |
| Z3SMC10              | 9.4                                                                              | 10.6           | 50                                      | 2 (<4)                                                                    | +5...+9                                                            | > 5                                              | 283                                                                    |
| Z3SMC11              | 10.4                                                                             | 11.6           | 50                                      | 4 (<7)                                                                    | +5...+10                                                           | > 5                                              | 259                                                                    |
| Z3SMC12              | 11.4                                                                             | 12.7           | 50                                      | 4 (<7)                                                                    | +5...+10                                                           | > 7                                              | 236                                                                    |
| Z3SMC13              | 12.4                                                                             | 14.1           | 50                                      | 5 (<10)                                                                   | +5...+10                                                           | > 7                                              | 213                                                                    |
| Z3SMC15              | 13.8                                                                             | 15.6           | 50                                      | 5 (<10)                                                                   | +5...+10                                                           | > 10                                             | 192                                                                    |
| Z3SMC16              | 15.3                                                                             | 17.1           | 25                                      | 6 (<15)                                                                   | +6...+11                                                           | > 10                                             | 175                                                                    |
| Z3SMC18              | 16.8                                                                             | 19.1           | 25                                      | 6 (<15)                                                                   | +6...+11                                                           | > 10                                             | 157                                                                    |
| Z3SMC20              | 18.8                                                                             | 21.2           | 25                                      | 6 (<15)                                                                   | +6...+11                                                           | > 10                                             | 142                                                                    |
| Z3SMC22              | 20.8                                                                             | 23.3           | 25                                      | 6 (<15)                                                                   | +6...+11                                                           | > 12                                             | 129                                                                    |
| Z3SMC24              | 22.8                                                                             | 25.6           | 25                                      | 7 (<15)                                                                   | +6...+11                                                           | > 12                                             | 117                                                                    |
| Z3SMC27              | 25.1                                                                             | 28.9           | 25                                      | 7 (<15)                                                                   | +6...+11                                                           | > 14                                             | 104                                                                    |
| Z3SMC30              | 28                                                                               | 32             | 25                                      | 8 (<15)                                                                   | +6...+11                                                           | > 14                                             | 94                                                                     |
| Z3SMC33              | 31                                                                               | 35             | 25                                      | 8 (<15)                                                                   | +6...+11                                                           | > 17                                             | 86                                                                     |
| Z3SMC36              | 34                                                                               | 38             | 10                                      | 16 (<40)                                                                  | +6...+11                                                           | > 17                                             | 79                                                                     |
| Z3SMC39              | 37                                                                               | 41             | 10                                      | 20 (<40)                                                                  | +6...+11                                                           | > 20                                             | 73                                                                     |
| Z3SMC43              | 40                                                                               | 46             | 10                                      | 24 (<45)                                                                  | +7...+12                                                           | > 20                                             | 65                                                                     |
| Z3SMC47              | 44                                                                               | 50             | 10                                      | 24 (<45)                                                                  | +7...+12                                                           | > 24                                             | 60                                                                     |
| Z3SMC51              | 48                                                                               | 54             | 10                                      | 25 (<60)                                                                  | +7...+12                                                           | > 24                                             | 56                                                                     |
| Z3SMC56              | 52                                                                               | 60             | 10                                      | 25 (<60)                                                                  | +7...+12                                                           | > 28                                             | 50                                                                     |
| Z3SMC62              | 58                                                                               | 66             | 10                                      | 25 (<80)                                                                  | +8...+13                                                           | > 28                                             | 45                                                                     |
| Z3SMC68              | 64                                                                               | 72             | 10                                      | 25 (<80)                                                                  | +8...+13                                                           | > 34                                             | 42                                                                     |
| Z3SMC75              | 70                                                                               | 79             | 10                                      | 30 (<100)                                                                 | +8...+13                                                           | > 34                                             | 38                                                                     |
| Z3SMC82              | 77                                                                               | 88             | 10                                      | 30 (<100)                                                                 | +8...+13                                                           | > 41                                             | 34                                                                     |
| Z3SMC91              | 85                                                                               | 96             | 5                                       | 40 (<150)                                                                 | +9...+13                                                           | > 41                                             | 31                                                                     |
| Z3SMC100             | 94                                                                               | 106            | 5                                       | 60 (<150)                                                                 | +9...+13                                                           | > 50                                             | 28                                                                     |
| Z3SMC110             | 104                                                                              | 116            | 5                                       | 80 (<200)                                                                 | +9...+13                                                           | > 50                                             | 26                                                                     |
| Z3SMC120             | 114                                                                              | 127            | 5                                       | 80 (<200)                                                                 | +9...+13                                                           | > 60                                             | 24                                                                     |
| Z3SMC130             | 124                                                                              | 141            | 5                                       | 90 (<250)                                                                 | +9...+13                                                           | > 60                                             | 21                                                                     |
| Z3SMC150             | 138                                                                              | 156            | 5                                       | 100 (<250)                                                                | +9...+13                                                           | > 75                                             | 19                                                                     |
| Z3SMC160             | 153                                                                              | 171            | 5                                       | 110 (<300)                                                                | +9...+13                                                           | > 75                                             | 18                                                                     |
| Z3SMC180             | 168                                                                              | 191            | 5                                       | 120 (<350)                                                                | +9...+13                                                           | > 90                                             | 16                                                                     |
| Z3SMC200             | 188                                                                              | 212            | 5                                       | 150 (<350)                                                                | +9...+13                                                           | > 90                                             | 14                                                                     |

1 Notes see previous page – Fußnoten siehe vorhergehende Seite