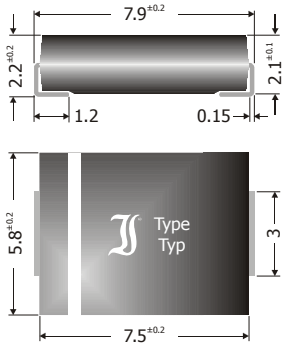
# Z3SMC1 ... Z3SMC200 (3 W)

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

Version 2010-05-18




Dimensions - Maße [mm]

| | |
|---|---|
| Maximum power dissipation<br>Maximale Verlustleistung | 3 W |
| Nominal Z-voltage<br>Nominale Z-Spannung | 1...200 V |
| Plastic case<br>Kunststoffgehäuse | ~ SMC<br>~ DO-214AB |
| Weight approx. – Gewicht ca. | 0.21 g |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert | |
| Standard packaging taped and reeled<br>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**

| | | Z3SMC-series | |
|---|---|---|---|
| Power dissipation – Verlustleistung | $T_A$ = 50°C | $P_{tot}$ | 3 W [1]) |
| Non repetitive peak power dissipation, t < 10 ms<br>Einmalige Impuls-Verlustleistung, t < 10 ms | $T_A$ = 25°C | $P_{ZSM}$ | 60 W |
| Operating junction temperature – Sperrschichttemperatur<br>Storage temperature – Lagerungstemperatur | | $T_j$<br>$T_S$ | -50...+150°C<br>-50...+175°C |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft | | $R_{thA}$ | < 33 K/W [1]) |
| Thermal resistance junction to terminal<br>Wärmewiderstand Sperrschicht – Anschluss | | $R_{thT}$ | < 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 mm² copper pads at each terminal
Montage auf Leiterplatte mit 50 mm² 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 setzten. Die mit weißem Balken gekennzeichnete Kathode ist mit dem Minuspol zu verbinden.

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## Maximum ratings — Grenzwerte

| Type<br>Typ | Zener voltage [2])<br>Zener-Spannung [2])<br>$I_Z = I_{Ztest}$ | | Test current<br>Meßstrom | Dynamic resistance<br>Diff. Widerstand<br>$I_{Ztest}$ / f = 1 kHz | Temp. Coeffic.<br>of Z-voltage<br>...der Z-Spannung | Reverse volt.<br>Sperrspannng.<br>$I_R$ = 1 µA | Z-current [1])<br>Z-Strom [1])<br>$T_A$ = 50°C |
|---|---|---|---|---|---|---|---|
| | $V_{zmin}$ [V] | $V_{zmax}$ [V] | $I_{Ztest}$ [mA] | $r_{zj}$ [Ω] | $\alpha_{VZ}$ [10-4 / °C] | $V_R$ [V] | $I_{Zmax}$ [mA] |
| Z3SMC1 [3]) | 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


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