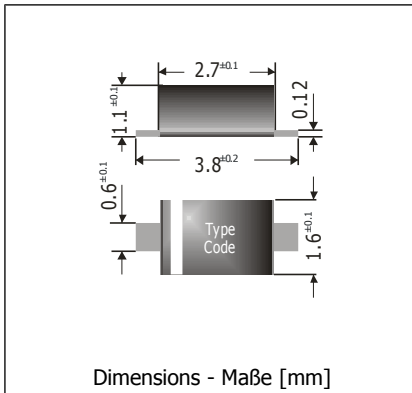


## BZT52C2V4 ... BZT52C75 (500 mW)

### Surface mount Silicon Planar Zener Diodes Silizium-Planar-Zener-Dioden für die Oberflächenmontage

Version 2012-06-21



|                                                                               |          |
|-------------------------------------------------------------------------------|----------|
| Maximum power dissipation<br>Maximale Verlustleistung                         | 500 mW   |
| Nominal Z-voltage<br>Nominale Z-Spannung                                      | 3...75 V |
| Plastic case<br>Kunststoffgehäuse                                             | ~SOD-123 |
| Weight approx.<br>Gewicht ca.                                                 | 0.01 g   |
| Standard packaging taped and reeled<br>Standard Lieferform gegurtet auf Rolle |          |



Standard Zener voltage tolerance is graded to the international E 24 ( $\sim \pm 5\%$ ) 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 ( $\sim \pm 5\%$ ). Andere Toleranzen oder höhere Arbeitsspannungen auf Anfrage.

#### Maximum ratings and Characteristics

#### Grenz- und Kennwerte

|                                                                                               |                          | BZT52-series     |                         |
|-----------------------------------------------------------------------------------------------|--------------------------|------------------|-------------------------|
| Power dissipation – Verlustleistung                                                           | $T_A = 25^\circ\text{C}$ | $P_{\text{tot}}$ | 500 mW <sup>1)</sup>    |
| Operating junction temperature – Sperrschichttemperatur                                       |                          | $T_j$            | -50...+150°C            |
| Storage temperature – Lagerungstemperatur                                                     |                          | $T_s$            | -50...+150°C            |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft   |                          | $R_{\text{thA}}$ | < 300 K/W <sup>1)</sup> |
| Thermal resistance junction to terminal<br>Wärmewiderstand Sperrschicht – Anschluss           |                          | $R_{\text{thT}}$ | < 240 K/W               |
| Zener voltages see table on next page – Zener-Spannungen siehe Tabelle auf der nächsten Seite |                          |                  |                         |

| Marking – Stempelung (alternative) |                        |                       |                   |
|------------------------------------|------------------------|-----------------------|-------------------|
| BZT52C2V4 = MH, WX, 4C             | BZT52C6V2 = NA, WA, 4R | BZT52C16 = NN, WK, 5H | BZT52C43 = WU, 6A |
| BZT52C2V7 = MJ, W1, 4D             | BZT52C6V8 = NB, WB, 4X | BZT52C18 = NP, WL, 5J | BZT52C47 = WV, 6B |
| BZT52C3V0 = MK, W2, 4E             | BZT52C7V5 = NC, WC, 4Y | BZT52C20 = NR, WM, 5K | BZT52C51 = WW, 6C |
| BZT52C3V3 = MM, W3, 4F             | BZT52C8V2 = ND, WD, 4Z | BZT52C22 = NX, WN, 5M | BZT52C56 = 6D     |
| BZT52C3V6 = MN, W4, 4H             | BZT52C9V1 = NE, WE, 5A | BZT52C24 = NY, WO, 5N | BZT52C62 = 6E     |
| BZT52C3V9 = MP, W5, 4J             | BZT52C10 = NE, WF, 5B  | BZT52C27 = NZ, WP, 5P | BZT52C68 = 6F     |
| BZT52C4V3 = MR, W6, 4K             | BZT52C11 = NH, WG, 5C  | BZT52C30 = PA, WQ, 5R | BZT52C75 = 6H     |
| BZT52C4V7 = MX, W7, 4M             | BZT52C12 = NJ, WH, 5D  | BZT52C33 = PB, WR, 5X |                   |
| BZT52C5V1 = MY, W8, 4N             | BZT52C13 = NK, WI, 5E  | BZT52C36 = PC, WS, 5Y |                   |
| BZT52C5V6 = MZ, W9, 4P             | BZT52C15 = NM, WJ, 5F  | BZT52C39 = PD, WT, 5Z |                   |

1 Mounted on P.C. board with 25 mm<sup>2</sup> copper pads at each terminal  
Montage auf Leiterplatte mit 25 mm<sup>2</sup> Kupferbelag (Löt-pad an jedem Anschluss)

## Maximum ratings

## Grenzwerte

| Type<br>Typ | Z-voltage range <sup>1)</sup><br>Z-Spannungs-Bereich <sup>1)</sup><br>$I_{ZT} = 5\text{mA}$ |                        | Dynamic resistance<br>Diff. Widerstand |               | Temp. Coeff.<br>of Z-voltage<br>...der Z-Spannung | Reverse volt.<br>Sperrspanng.<br>$I_R = 100\text{ nA}$ | Z-current <sup>2)</sup><br>Z-Strom <sup>2)</sup><br>$T_A = 25^\circ\text{C}$ |
|-------------|---------------------------------------------------------------------------------------------|------------------------|----------------------------------------|---------------|---------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------|
|             | $V_{Z\text{ min}}$ [V]                                                                      | $V_{Z\text{ max}}$ [V] | $Z_{ZK}$ [ $\Omega$ ]                  | $I_{ZK}$ [mA] | $\alpha_{VZ}$ [ $10^{-4}/^\circ\text{C}$ ]        | $V_R$ [V]                                              | $I_{Z\text{ max}}$ [mA]                                                      |
| BZT52C2V4   | 2.2                                                                                         | 2.6                    | < 100                                  | 5             | -9...-6                                           | 1 (<120 $\mu\text{A}$ )                                | 192                                                                          |
| BZT52C2V7   | 2.5                                                                                         | 2.9                    | < 110                                  | 5             | -9...-6                                           | 1 (<120 $\mu\text{A}$ )                                | 172                                                                          |
| BZT52C3V0   | 2.8                                                                                         | 3.2                    | < 120                                  | 5             | -8...-5                                           | 1 (<50 $\mu\text{A}$ )                                 | 156                                                                          |
| BZT52C3V3   | 3.1                                                                                         | 3.5                    | < 130                                  | 5             | -8...-5                                           | 1 (<20 $\mu\text{A}$ )                                 | 143                                                                          |
| BZT52C3V6   | 3.4                                                                                         | 3.8                    | < 130                                  | 5             | -8...-5                                           | 1 (<10 $\mu\text{A}$ )                                 | 132                                                                          |
| BZT52C3V9   | 3.6                                                                                         | 4.2                    | < 130                                  | 5             | -8...-5                                           | 1 (<5 $\mu\text{A}$ )                                  | 119                                                                          |
| BZT52C4V3   | 4.0                                                                                         | 4.6                    | < 130                                  | 5             | -6...-3                                           | 1 (<5 $\mu\text{A}$ )                                  | 109                                                                          |
| BZT52C4V7   | 4.4                                                                                         | 5.0                    | < 130                                  | 5             | -5...+2                                           | 1 (<2 $\mu\text{A}$ )                                  | 100                                                                          |
| BZT52C5V1   | 4.8                                                                                         | 5.4                    | < 130                                  | 5             | -2...+2                                           | 1.5 (<2 $\mu\text{A}$ )                                | 93                                                                           |
| BZT52C5V6   | 5.2                                                                                         | 6.0                    | < 80                                   | 5             | -5...+5                                           | 2.5 (<1 $\mu\text{A}$ )                                | 83                                                                           |
| BZT52C6V2   | 5.8                                                                                         | 6.6                    | < 50                                   | 5             | -3...+6                                           | 3 (<1 $\mu\text{A}$ )                                  | 76                                                                           |
| BZT52C6V8   | 6.4                                                                                         | 7.2                    | < 30                                   | 5             | +3...+7                                           | 3.5 (<0.5 $\mu\text{A}$ )                              | 69                                                                           |
| BZT52C7V5   | 7.0                                                                                         | 7.9                    | < 30                                   | 5             | +3...+7                                           | 4 (<0.5 $\mu\text{A}$ )                                | 63                                                                           |
| BZT52C8V2   | 7.7                                                                                         | 8.7                    | < 30                                   | 5             | +8...+7                                           | 5 (<0.5 $\mu\text{A}$ )                                | 57                                                                           |
| BZT52C9V1   | 8.5                                                                                         | 9.6                    | < 30                                   | 5             | +3...+9                                           | 6 (<0.5 $\mu\text{A}$ )                                | 0                                                                            |
| BZT52C10    | 9.4                                                                                         | 10.6                   | < 30                                   | 5             | +3...+10                                          | 7                                                      | 0                                                                            |
| BZT52C11    | 10.4                                                                                        | 11.6                   | < 30                                   | 5             | +3...+11                                          | 8                                                      | 0                                                                            |
| BZT52C12    | 11.4                                                                                        | 12.7                   | < 35                                   | 5             | +3...+11                                          | 9                                                      | 0                                                                            |
| BZT52C13    | 12.4                                                                                        | 14.1                   | < 35                                   | 5             | +3...+11                                          | 10                                                     | 0                                                                            |
| BZT52C15    | 13.8                                                                                        | 15.6                   | < 40                                   | 5             | +3...+11                                          | 11                                                     | 0                                                                            |
| BZT52C16    | 15.3                                                                                        | 17.1                   | < 40                                   | 5             | +3...+11                                          | 12                                                     | 0                                                                            |
| BZT52C18    | 16.8                                                                                        | 19.1                   | < 45                                   | 5             | +3...+11                                          | 13                                                     | 0                                                                            |
| BZT52C20    | 18.8                                                                                        | 21.2                   | < 50                                   | 5             | +3...+11                                          | 15                                                     | 0                                                                            |
| BZT52C22    | 20.8                                                                                        | 23.3                   | < 55                                   | 5             | +4...+12                                          | 17                                                     | 0                                                                            |
| BZT52C24    | 22.8                                                                                        | 25.6                   | < 60                                   | 5             | +4...+12                                          | 19                                                     | 0                                                                            |
| BZT52C27    | 25.1                                                                                        | 28.9                   | < 70                                   | 2             | +4...+12                                          | 21                                                     | 0                                                                            |
| BZT52C30    | 28                                                                                          | 32                     | < 80                                   | 2             | +4...+12                                          | 23                                                     | 16                                                                           |
| BZT52C33    | 31                                                                                          | 35                     | < 80                                   | 2             | +4...+12                                          | 25                                                     | 14                                                                           |
| BZT52C36    | 34                                                                                          | 38                     | < 90                                   | 2             | +4...+12                                          | 27                                                     | 13                                                                           |
|             | $I_{ZT} = 2.5\text{ mA}$                                                                    |                        |                                        |               |                                                   |                                                        |                                                                              |
| BZT52C39    | 37                                                                                          | 41                     | <100                                   | 2             | +4...+12                                          | 30 (< 2 $\mu\text{A}$ )                                | 12                                                                           |
| BZT52C43    | 40                                                                                          | 46                     | <130                                   | 2             | +4...+12                                          | 33 (< 2 $\mu\text{A}$ )                                | 11                                                                           |
| BZT52C47    | 44                                                                                          | 50                     | <150                                   | 2             | +4...+12                                          | 36 (< 2 $\mu\text{A}$ )                                | 10                                                                           |
| BZT52C51    | 48                                                                                          | 54                     | <180                                   | 2             | +4...+12                                          | 39 (< 1 $\mu\text{A}$ )                                | 9                                                                            |
| BZT52C56    | 52                                                                                          | 60                     | <180                                   | 2             | +4...+12                                          | 43 (< 1 $\mu\text{A}$ )                                | 8                                                                            |
| BZT52C62    | 58                                                                                          | 66                     | <200                                   | 2             | +4...+12                                          | 47 (<0.2 $\mu\text{A}$ )                               | 8                                                                            |
| BZT52C68    | 64                                                                                          | 72                     | <250                                   | 2             | +4...+12                                          | 52 (<0.2 $\mu\text{A}$ )                               | 7                                                                            |
| BZT52C75    | 70                                                                                          | 79                     | <300                                   | 2             | +4...+12                                          | 57 (<0.2 $\mu\text{A}$ )                               | 6                                                                            |

1 Tested with pulses (20 ms) – Gemessen mit Impulsen (20 ms)

2 Mounted on P.C. board with 25 mm<sup>2</sup> copper pads at each terminal  
Montage auf Leiterplatte mit 25 mm<sup>2</sup> Kupferbelag (Lötpad an jedem Anschluss)