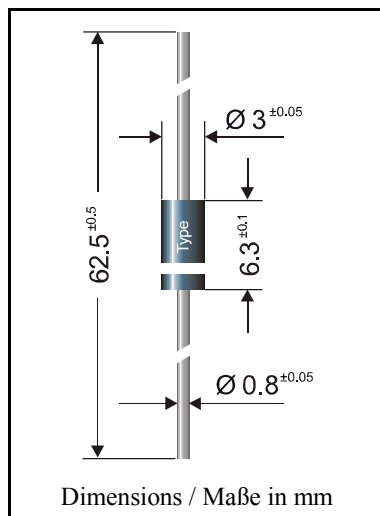


**Unidirectional and bidirectional  
Transient Voltage Suppressor Diodes**
**Unidirektionale und bidirektionale  
Spannungs-Begrenzer-Dioden**


|                                                                                       |                               |
|---------------------------------------------------------------------------------------|-------------------------------|
| Peak pulse power dissipation<br>Impuls-Verlustleistung                                | 400 W                         |
| Maximum stand-off voltage<br>Maximale Sperrspannung                                   | 5.8...376 V                   |
| Plastic case – Kunststoffgehäuse                                                      | DO-15 (DO-204AC)              |
| Weight approx. – Gewicht ca.                                                          | 0.4 g                         |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert |                               |
| Standard packaging taped in ammo pack<br>Standard Lieferform gegurtet in Ammo-Pack    | see page 16<br>siehe Seite 16 |

For bidirectional types (suffix “B”), electrical characteristics apply in both directions.  
Für bidirektionale Dioden (Suffix “B”) gelten die elektrischen Werte in beiden Richtungen.

**Maximum ratings and Characteristics**
**Kenn- und Grenzwerte**

|                                                                                                                  |                          |                                                       |                                                          |
|------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------|----------------------------------------------------------|
| Peak pulse power dissipation (10/1000 $\mu$ s waveform)<br>Impuls-Verlustleistung (Strom-Impuls 10/1000 $\mu$ s) | $T_A = 25^\circ\text{C}$ | $P_{PPM}$                                             | 400 W <sup>1)</sup>                                      |
| Steady state power dissipation<br>Verlustleistung im Dauerbetrieb                                                | $T_A = 25^\circ\text{C}$ | $P_{M(AV)}$                                           | 1 W <sup>2)</sup>                                        |
| Peak forward surge current, 60 Hz half sine-wave<br>Stoßstrom für eine 60 Hz Sinus-Halbwellen                    | $T_A = 25^\circ\text{C}$ | $I_{FSM}$                                             | 40 A <sup>3)</sup>                                       |
| Max. instantaneous forward voltage<br>Augenblickswert der Durchlaßspannung                                       | $I_F = 25\text{A}$       | $V_{BR} \leq 200\text{ V}$<br>$V_{BR} > 200\text{ V}$ | $V_F < 3.0\text{ V}^3)$<br>$V_F < 6.5\text{ V}^3)$       |
| Operating junction temperature – Sperrschichttemperatur<br>Storage temperature – Lagerungstemperatur             |                          | $T_j$<br>$T_s$                                        | $-50...+175^\circ\text{C}$<br>$-50...+175^\circ\text{C}$ |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft                      |                          | $R_{thA}$                                             | $< 45\text{ K/W}^2)$                                     |
| Thermal resistance junction to lead<br>Wärmewiderstand Sperrschicht – Anschlußdraht                              |                          | $R_{thL}$                                             | $< 15\text{ K/W}$                                        |

<sup>1)</sup> Non-repetitive current pulse see curve  $I_{PPM} = f(t_r)$

Höchstzulässiger Spitzenwert eines einmaligen Strom-Impulses, siehe Kurve  $I_{PPM} = f(t_r)$

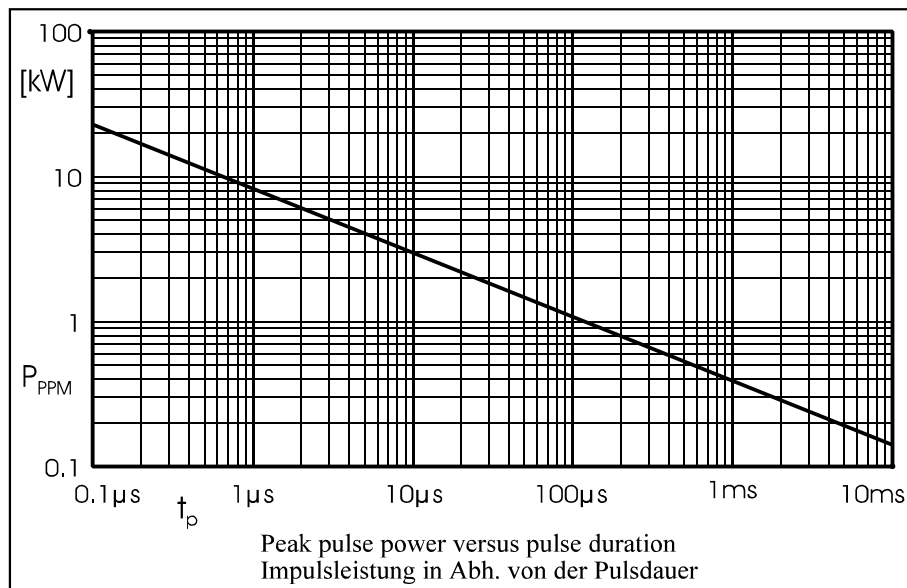
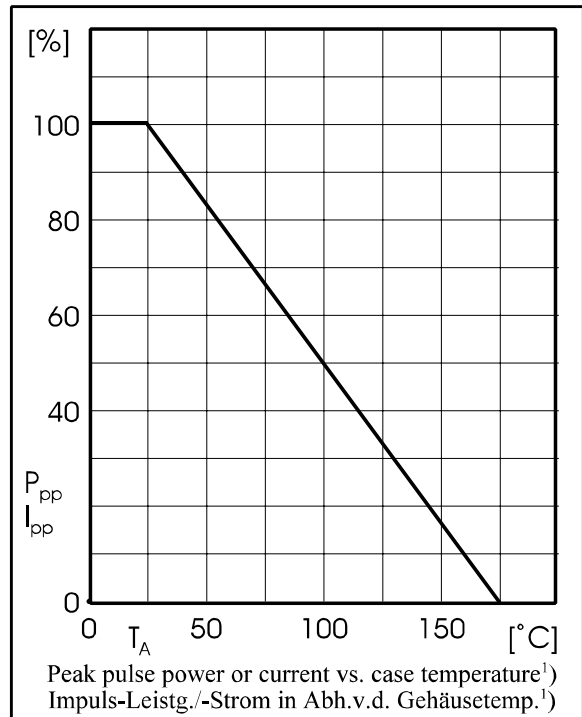
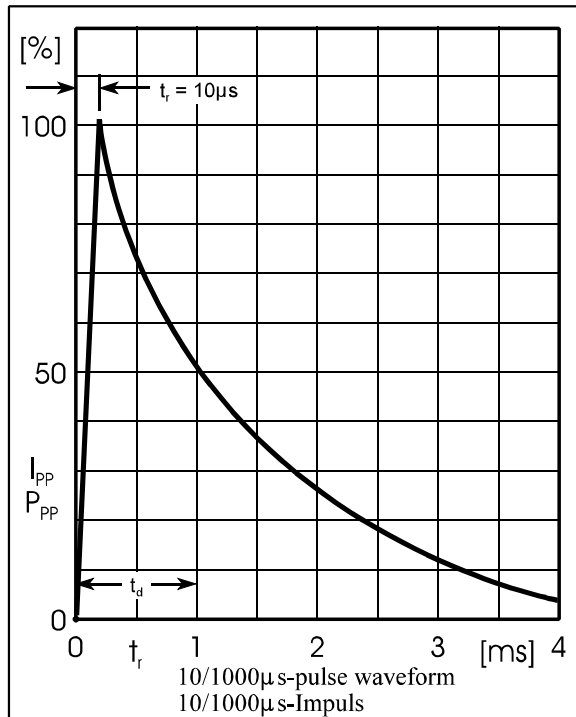
<sup>2)</sup> Valid, if leads are kept at ambient temperature at a distance of 10 mm from case

Gültig, wenn die Anschlußdrähte in 10 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden

<sup>3)</sup> Unidirectional diodes only – Nur für unidirektionale Dioden

**Maximum ratings**
**Grenzwerte**

| Type<br>Typ | Stand-off<br>voltage<br>Sperrspanng | Max. rev. current<br>Max. Sperrstrom<br>at / bei $V_{WM}$ | Breakdown voltage at $I_T = 1$ mA<br>Abbruch-Spannung bei $I_T = 1$ mA<br>) at / bei $I_T = 10$ mA |                   | Max. clamping voltage<br>Max. Begrenzer-Spanng<br>at / bei $I_{PPM}$ (10/1000 $\mu$ s) |               |
|-------------|-------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------|---------------|
|             | $V_{WM}$ [V]                        | $I_D$ [ $\mu$ A]                                          | $V_{BR}$ min. [V]                                                                                  | $V_{BR}$ max. [V] | $V_C$ [V]                                                                              | $I_{PPM}$ [A] |
| BZW 04-5V8  | 5.8                                 | 1000                                                      | 6.8 $\pm$ 5%                                                                                       | 6.45...7.14 *)    | 10.5                                                                                   | 38.0          |
| BZW 04-6V4  | 6.4                                 | 500                                                       | 7.5 $\pm$ 5%                                                                                       | 7.13...7.88 *)    | 11.3                                                                                   | 35.4          |
| BZW 04-7V0  | 7.02                                | 200                                                       | 8.2 $\pm$ 5%                                                                                       | 7.79...8.61 *)    | 12.1                                                                                   | 33.0          |
| BZW 04-7V8  | 7.78                                | 50                                                        | 9.1 $\pm$ 5%                                                                                       | 8.65...9.55       | 13.4                                                                                   | 30.0          |
| BZW 04-8V5  | 8.55                                | 10                                                        | 10 $\pm$ 5%                                                                                        | 9.5...10.5        | 14.5                                                                                   | 27.6          |
| BZW 04-9V4  | 9.4                                 | 5                                                         | 11 $\pm$ 5%                                                                                        | 10.5...11.6       | 15.6                                                                                   | 25,7          |
| BZW 04-10   | 10.2                                | 5                                                         | 12 $\pm$ 5%                                                                                        | 11.4...12.6       | 16.7                                                                                   | 24.0          |
| BZW 04-11   | 11.1                                | 5                                                         | 13 $\pm$ 5%                                                                                        | 12.4...13.7       | 18.2                                                                                   | 22.0          |
| BZW 04-13   | 12.8                                | 5                                                         | 15 $\pm$ 5%                                                                                        | 14.3...15.8       | 21.2                                                                                   | 19.0          |
| BZW 04-14   | 13.6                                | 5                                                         | 16 $\pm$ 5%                                                                                        | 15.2...16.8       | 22.5                                                                                   | 17.8          |
| BZW 04-15   | 15.3                                | 5                                                         | 18 $\pm$ 5%                                                                                        | 17.1...18.9       | 25.2                                                                                   | 16.0          |
| BZW 04-17   | 17.1                                | 5                                                         | 20 $\pm$ 5%                                                                                        | 19.0...21.0       | 27.7                                                                                   | 14.5          |
| BZW 04-19   | 18.8                                | 5                                                         | 22 $\pm$ 5%                                                                                        | 20.9...23.1       | 30.6                                                                                   | 13.0          |
| BZW 04-20   | 20.5                                | 5                                                         | 24 $\pm$ 5%                                                                                        | 22.8...25.2       | 33.2                                                                                   | 12.0          |
| BZW 04-23   | 23.1                                | 5                                                         | 27 $\pm$ 5%                                                                                        | 25.7...28.4       | 37.5                                                                                   | 10.7          |
| BZW 04-26   | 25,6                                | 5                                                         | 30 $\pm$ 5%                                                                                        | 28.5...31.5       | 41.5                                                                                   | 9.6           |
| BZW 04-28   | 28.2                                | 5                                                         | 33 $\pm$ 5%                                                                                        | 31.4...34.7       | 45.7                                                                                   | 8.8           |
| BZW 04-31   | 30.8                                | 5                                                         | 36 $\pm$ 5%                                                                                        | 34.2...37.8       | 49.9                                                                                   | 8.0           |
| BZW 04-33   | 33.3                                | 5                                                         | 39 $\pm$ 5%                                                                                        | 37.1...41.0       | 53.9                                                                                   | 7.4           |
| BZW 04-37   | 36.8                                | 5                                                         | 43 $\pm$ 5%                                                                                        | 40.9...45.2       | 59.3                                                                                   | 6.7           |
| BZW 04-40   | 40.2                                | 5                                                         | 47 $\pm$ 5%                                                                                        | 44.7...49.4       | 64.8                                                                                   | 6.2           |
| BZW 04-44   | 43.6                                | 5                                                         | 51 $\pm$ 5%                                                                                        | 48.5...53.6       | 70.1                                                                                   | 5.7           |
| BZW 04-48   | 47.8                                | 5                                                         | 56 $\pm$ 5%                                                                                        | 53.2...58.8       | 77.0                                                                                   | 5.2           |
| BZW 04-53   | 53.0                                | 5                                                         | 62 $\pm$ 5%                                                                                        | 58.9...65.1       | 85.0                                                                                   | 4.7           |
| BZW 04-58   | 58.1                                | 5                                                         | 68 $\pm$ 5%                                                                                        | 64.6...71.4       | 92.0                                                                                   | 4.3           |
| BZW 04-64   | 64.1                                | 5                                                         | 75 $\pm$ 5%                                                                                        | 71.3...78.8       | 103                                                                                    | 3.9           |
| BZW 04-70   | 70.1                                | 5                                                         | 82 $\pm$ 5%                                                                                        | 77.9...86.1       | 113                                                                                    | 3.5           |
| BZW 04-78   | 77.8                                | 5                                                         | 91 $\pm$ 5%                                                                                        | 86.5...95.5       | 125                                                                                    | 3.2           |
| BZW 04-85   | 85.8                                | 5                                                         | 100 $\pm$ 5%                                                                                       | 95.0...105        | 137                                                                                    | 2.9           |
| BZW 04-94   | 94.0                                | 5                                                         | 110 $\pm$ 5%                                                                                       | 105...116         | 152                                                                                    | 2.6           |
| BZW 04-102  | 102                                 | 5                                                         | 120 $\pm$ 5%                                                                                       | 114...126         | 165                                                                                    | 2.4           |
| BZW 04-111  | 111                                 | 5                                                         | 130 $\pm$ 5%                                                                                       | 124...137         | 179                                                                                    | 2.2           |
| BZW 04-128  | 128                                 | 5                                                         | 150 $\pm$ 5%                                                                                       | 143...158         | 207                                                                                    | 2.0           |
| BZW 04-136  | 136                                 | 5                                                         | 160 $\pm$ 5%                                                                                       | 152...168         | 219                                                                                    | 1.8           |
| BZW 04-145  | 145                                 | 5                                                         | 170 $\pm$ 5%                                                                                       | 162...179         | 234                                                                                    | 1.7           |
| BZW 04-154  | 154                                 | 5                                                         | 180 $\pm$ 5%                                                                                       | 171...189         | 246                                                                                    | 1.6           |
| BZW 04-171  | 171                                 | 5                                                         | 200 $\pm$ 5%                                                                                       | 190...210         | 274                                                                                    | 1.5           |
| BZW 04-188  | 188                                 | 5                                                         | 220 $\pm$ 5%                                                                                       | 209...231         | 301                                                                                    | 1.4           |
| BZW 04-213  | 213                                 | 5                                                         | 250 $\pm$ 5%                                                                                       | 237...263         | 344                                                                                    | 1.3           |
| BZW 04-239  | 239                                 | 5                                                         | 280 $\pm$ 5%                                                                                       | 266...294         | 384                                                                                    | 1.2           |
| BZW 04-256  | 256                                 | 5                                                         | 300 $\pm$ 5%                                                                                       | 285...315         | 414                                                                                    | 1.1           |
| BZW 04-273  | 273                                 | 5                                                         | 320 $\pm$ 5%                                                                                       | 304...336         | 438                                                                                    | 1.0           |
| BZW 04-299  | 299                                 | 5                                                         | 350 $\pm$ 5%                                                                                       | 332...368         | 482                                                                                    | 0.9           |
| BZW 04-342  | 342                                 | 5                                                         | 400 $\pm$ 5%                                                                                       | 380...420         | 548                                                                                    | 0.9           |
| BZW 04-376  | 376                                 | 5                                                         | 440 $\pm$ 5%                                                                                       | 418...462         | 603                                                                                    | 0.8           |



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Für bidirektionale Dioden (Suffix "B") gelten die elektrischen Werte in beiden Richtungen.

The standard tolerance of the breakdown voltage for each type is  $\pm 5\%$ .  
Die Toleranz der Arbeitsspannung jeder Diode beträgt in der Standardausführung  $\pm 5\%$ .

e.g.: BZW 04-154B = bidirectional diode  $V_{WM} \geq 154 \text{ V}$  at  $I_D = 5 \mu A$ ,  $V_{BR} = 180 \text{ V}$  ( $\pm 5\%$ )  
BZW 04-5.8 = unidirectional diode,  $V_{WM} \geq 5.8 \text{ V}$  at  $I_D = 1000 \mu A$ ,  $V_{BR} = 6.8 \text{ V}$  ( $\pm 5\%$ )

<sup>1)</sup> Valid, if leads are kept at ambient temperature at a distance of 10 mm from case  
Gültig, wenn die Anschlußdrähte in 10 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden