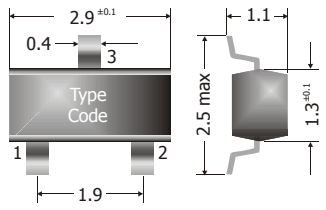
Diotec Semiconductor

# BCW66F ... BCW66H

**NPN** **Surface Mount General Purpose Si-Epi-Planar Transistors**
**Si-Epi-Planar Universaltransistoren für die Oberflächenmontage** **NPN**

Version 2006-07-31




Dimensions - Maße [mm]
1 = B 2 = E 3 = C

| | |
|---|---|
| Power dissipation – Verlustleistung | 250 mW |
| Plastic case<br>Kunststoffgehäuse | SOT-23<br>(TO-236) |
| Weight approx. – Gewicht ca. | 0.01 g |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert | |
| Standard packaging taped and reeled<br>Standard Lieferform gegurtet auf Rolle | |

RoHS Pb WEEE ELV

**Maximum ratings ($T_A$ = 25°C)** **Grenzwerte ($T_A$ = 25°C)**

| | | | BCW66F ... BCW66H |
|---|---|---|---|
| Collector-Emitter-volt. – Kollektor-Emitter-Spannung | B open | $V_{CEO}$ | 45 V |
| Collector-Base-voltage – Kollektor-Basis-Spannung | E open | $V_{CBO}$ | 75 V |
| Collector-Base-voltage – Kollektor-Basis-Spannung | C open | $V_{EBO}$ | 5 V |
| Power dissipation – Verlustleistung | | $P_{tot}$ | 250 mW [1]) |
| Collector current – Kollektorstrom (dc) | | $I_C$ | 800 mA |
| Peak Collector current – Kollektor-Spitzenstrom | | $I_{CM}$ | 1000 mA |
| Peak Base current – Basis-Spitzenstrom | | $I_{BM}$ | 200 mA |
| Junction temperature – Sperrschichttemperatur<br>Storage temperature – Lagerungstemperatur | | $T_j$<br>$T_S$ | -55...+150°C<br>-55...+150°C |

**Characteristics ($T_j$ = 25°C)** **Kennwerte ($T_j$ = 25°C)**

| | | | Min. | Typ. | Max. |
|---|---|---|---|---|---|
| DC current gain – Kollektor-Basis-Stromverhältnis [2] | | | | | |
| $V_{CE}$ = 10 V, $I_C$ = 100 µA | BCW66F | $h_{FE}$ | 35 | – | – |
| | BCW66G | $h_{FE}$ | 50 | – | – |
| | BCW66H | $h_{FE}$ | 80 | – | – |
| $V_{CE}$ = 1 V, $I_C$ = 10 mA | BCW66F | $h_{FE}$ | 75 | – | – |
| | BCW66G | $h_{FE}$ | 100 | – | – |
| | BCW66H | $h_{FE}$ | 180 | – | – |
| $V_{CE}$ = 1 V, $I_C$ = 100 mA | BCW66F | $h_{FE}$ | 100 | 160 | 250 |
| | BCW66G | $h_{FE}$ | 160 | 250 | 400 |
| | BCW66H | $h_{FE}$ | 250 | 350 | 630 |
| $V_{CE}$ = 2 V, $I_C$ = 500 mA | BCW66F | $h_{FE}$ | – | 35 | – |
| | BCW66G | $h_{FE}$ | – | 60 | – |
| | BCW66H | $h_{FE}$ | – | 100 | – |

1 Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss
2 Tested with pulses $t_p$ = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen $t_p$ = 300 µs, Schaltverhältnis ≤ 2%

| **Characteristics ($T_j$ = 25°C)** | | **Kennwerte ($T_j$ = 25°C)** | | |
|---|---|---|---|---|
| | | **Min.** | **Typ.** | **Max.** |
| Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung [2]) | | | | |
| $I_C$ = 100 mA, $I_B$ = 10 mA | $V_{CEsat}$ | – | – | 300 mV |
| $I_C$ = 500 mA, $I_B$ = 50 mA | $V_{CEsat}$ | – | – | 700 mV |
| Base-Emitter saturation voltage – Basis-Sättigungsspannung [2]) | | | | |
| $I_C$ = 100 mA, $I_B$ = 10 mA | $V_{BEsat}$ | – | – | 1.25 V |
| $I_C$ = 500 mA, $I_B$ = 50 mA | $V_{BEsat}$ | – | – | 2.0 V |
| Collector-Base cutoff current – Kollektor-Basis-Reststrom | | | | |
| $V_{CB}$ = 45 V, (E open) | $I_{CB0}$ | – | – | 20 nA |
| $V_{CE}$ = 45 V, $T_j$ = 125°C, (E open) | $I_{CB0}$ | – | – | 20 µA |
| Emitter-Base cutoff current | | | | |
| $V_{EB}$ = 4 V, (C open) | $I_{EB0}$ | – | – | 20 nA |
| Gain-Bandwidth Product – Transitfrequenz | | | | |
| $V_{CE}$ = 5 V, $I_C$ = 50 mA, f = 100 MHz | $f_T$ | – | 170 MHz | – |
| Collector-Base Capacitance – Kollektor-Basis-Kapazität | | | | |
| $V_{CB}$ = 10 V, $I_E$ = $i_e$ = 0, f = 1 MHz | $C_{CBO}$ | – | 6 pF | – |
| Emitter-Base Capacitance – Emitter-Basis-Kapazität | | | | |
| $V_{EB}$ = 0.5 V, $I_C$ = $i_c$ = 0, f = 1 MHz | $C_{EBO}$ | – | 60 pF | – |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft | $R_{thA}$ | < 420 K/W [1]) | | |
| Recommended complementary PNP transistors<br>Empfohlene komplementäre PNP-Transistoren | | BCW68F ... BCW68H | | |
| Marking - Stempelung | | BCW66F = EF<br>BCW66G = EG<br>BCW66H = EH | | |



2 Tested with pulses $t_p$ = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen $t_p$ = 300 µs, Schaltverhältnis ≤ 2%

1 Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss