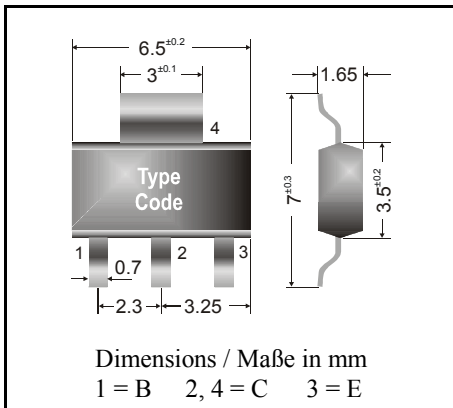


PNP

Surface mount Si-Epitaxial Planar Transistors
Si-Epitaxial Planar Transistoren für die Oberflächenmontage

PNP



| | |
|---|---------|
| Power dissipation – Verlustleistung | 1.3 W |
| Plastic case Kunststoffgehäuse | SOT-223 |
| Weight approx. – Gewicht ca. | 0.04 g |
| Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert | |
| Standard packaging taped and reeled Standard Lieferform gegurtet auf Rolle | |

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

| | | | BCP 51 | BCP 52 | BCP 53 |
|---|-------------------|--------------------|---------------------|---------------|---------------|
| Collector-Emitter-voltage | B open | - V _{CE0} | 45 V | 60 V | 80 V |
| Collector-Base-voltage | E open | - V _{CB0} | 45 V | 60 V | 100 V |
| Emitter-Base-voltage | C open | - V _{EB0} | 5 V | | |
| Power dissipation – Verlustleistung | P _{tot} | | 1.3 W ¹⁾ | | |
| Collector current – Kollektorstrom (DC) | - I _C | | 1 A | | |
| Peak Collector current – Koll.-Spitzenstrom | - I _{CM} | | 1.5 A | | |
| Peak Base current – Basis-Spitzenstrom | - I _{BM} | | 200 mA | | |
| Junction temperature – Sperrschichttemperatur | T _j | | 150°C | | |
| Storage temperature – Lagerungstemperatur | T _S | | - 65...+ 150°C | | |

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

| | | Min. | Typ. | Max. |
|--|----------------------|-------------|-------------|-------------|
| Collector-Base cutoff current – Kollektorreststrom | | | | |
| I _E = 0, - V _{CB} = 30 V | - I _{CB0} | – | – | 100 nA |
| I _E = 0, - V _{CB} = 30 V, T _j = 125°C | - I _{CB0} | – | – | 10 µA |
| Emitter-Base cutoff current – Emitterreststrom | | | | |
| I _C = 0, - V _{EB} = 5 V | - I _{EB0} | – | – | 100 nA |
| Collector saturation volt. – Kollektor-Sättigungssp. ²⁾ | | | | |
| - I _C = 500 mA, - I _B = 50 mA | - V _{CEsat} | – | – | 500 mV |

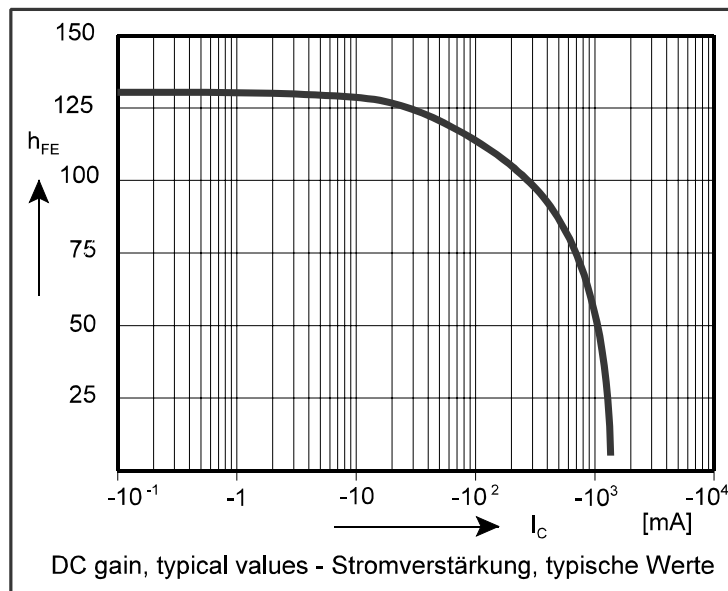
¹⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
 Montage auf Leiterplatte mit 3 mm² Kupferbelag (Löt-pad) an jedem Anschluß

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

Characteristics ($T_j = 25^\circ\text{C}$)

Kennwerte ($T_j = 25^\circ\text{C}$)

| | | Min. | Typ. | Max. | |
|--|-----------|--------------|------------------------|----------------------|-----|
| DC current gain – Kollektor-Basis-Stromverhältnis ¹⁾ | | | | | |
| - $V_{CE} = 2\text{ V}$, - $I_C = 150\text{ mA}$ | BCP 5x-6 | h_{FE} | 40 | – | 100 |
| | BCP 5x-10 | h_{FE} | 63 | – | 160 |
| | BCP 5x-16 | h_{FE} | 100 | – | 250 |
| - $V_{CE} = 2\text{ V}$, - $I_C = 5\text{ mA}$ | BCP 51... | h_{FE} | 63 | – | – |
| - $V_{CE} = 2\text{ V}$, - $I_C = 500\text{ mA}$ | BCP53 | h_{FE} | 40 | – | – |
| Base-Emitter voltage – Basis-Emitter-Spannung ¹⁾ | | | | | |
| - $V_{CE} = 2\text{ V}$, - $I_C = 500\text{ mA}$ | | - V_{BEon} | – | – | 1 V |
| Gain-Bandwidth Product – Transitfrequenz | | | | | |
| - $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$ | | f_T | – | 115 MHz | – |
| Thermal resistance – Wärmewiderstand | | | | | |
| junction to ambient air – Sperrschicht zu umgebender Luft | | | R_{thA} | 95 K/W ²⁾ | |
| junction to soldering point – Sperrschicht zu Lötpad | | | R_{thS} | 14 K/W | |
| Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren | | | BCP 54, BCP 55, BCP 56 | | |



¹⁾ Tested with pulses $t_p = 300\ \mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\ \mu\text{s}$, Schaltverhältnis $\leq 2\%$
²⁾ Mounted on P.C. board with 3 mm^2 copper pad at each terminal
 Montage auf Leiterplatte mit 3 mm^2 Kupferbelag (Lötpad) an jedem Anschluß