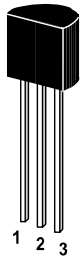


PNP

Si-Epitaxial Planar Transistors

PNP



Standard Pinning  
1 = C 2 = B 3 = E

Power dissipation – Verlustleistung

500 mW

Plastic case

TO-92

Kunststoffgehäuse

(10D3)

Weight approx. – Gewicht ca.

0.18 g

Plastic material has UL classification 94V-0

Gehäusematerial UL94V-0 klassifiziert

Standard packaging taped in ammo pack

Standard Lieferform gegurtet in Ammo-Pack

Maximum ratings ( $T_A = 25^\circ\text{C}$ )Grenzwerte ( $T_A = 25^\circ\text{C}$ )

|                                           |        |                  | BC 556               | BC 557 | BC 558/559 |
|-------------------------------------------|--------|------------------|----------------------|--------|------------|
| Collector-Emitter-voltage                 | B open | - $V_{CE0}$      | 65 V                 | 45 V   | 30 V       |
| Collector-Base-voltage                    | E open | - $V_{CB0}$      | 80 V                 | 50 V   | 30 V       |
| Emitter-Base-voltage                      | C open | - $V_{EB0}$      | 5 V                  |        |            |
| Power dissipation – Verlustleistung       |        | $P_{\text{tot}}$ | 500 mW <sup>1)</sup> |        |            |
| Collector current – Kollektorstrom (DC)   |        | - $I_C$          | 100 mA               |        |            |
| Junction temp. – Sperrschichttemperatur   |        | $T_j$            | 150°C                |        |            |
| Storage temperature – Lagerungstemperatur |        | $T_s$            | - 55...+ 150°C       |        |            |

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

|                                                                                      |                      | Group A                     | Group B                   | Group C                   |
|--------------------------------------------------------------------------------------|----------------------|-----------------------------|---------------------------|---------------------------|
| DC current gain – Kollektor-Basis-Stromverhältnis                                    |                      |                             |                           |                           |
| - $V_{CE} = 5\text{ V}$ , - $I_C = 2\text{ mA}$                                      | $h_{FE}$             | 110...220                   | 200...460                 | 420...800                 |
| h-Parameters at - $V_{CE} = 5\text{ V}$ , - $I_C = 2\text{ mA}$ , $f = 1\text{ kHz}$ |                      |                             |                           |                           |
| Small signal current gain                                                            | $h_{fe}$             | typ. 220                    | typ. 330                  | typ. 600                  |
| Stromverstärkung                                                                     |                      |                             |                           |                           |
| Input impedance – Eingangsimpedanz                                                   | $h_{ie}$             | 1.6...4.5 k $\Omega$        | 3.2...8.5 k $\Omega$      | 6...15 k $\Omega$         |
| Output admittance – Ausg.-Leitwert                                                   | $h_{oe}$             | 18 < 30 $\mu\text{S}$       | 30 < 60 $\mu\text{S}$     | 60 < 110 $\mu\text{S}$    |
| Reverse voltage transfer ratio                                                       | $h_{re}$             | typ. 1.5 * 10 <sup>-4</sup> | typ. 2 * 10 <sup>-4</sup> | typ. 3 * 10 <sup>-4</sup> |
| Spannungsrückwirkung                                                                 |                      |                             |                           |                           |
| Collector saturation voltage – Kollektor-Sättigungsspg.                              |                      |                             |                           |                           |
| - $I_C = 100\text{ mA}$ , - $I_B = 5\text{ mA}$                                      | - $V_{CE\text{sat}}$ | —                           | —                         | 300 mV                    |

<sup>1)</sup> Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig, wenn die Anschlußdrähte in 2 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden

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

|                                                                                                                                                                                                   |  | Min.                                                                                 | Typ.             | Max.                  |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|------------------|-----------------------|--------------------------------------|
| Base saturation voltage – Basis-Sättigungsspannung<br>- I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA                                                                                          |  | - V <sub>BEsat</sub>                                                                 | –                | –                     | 1 V                                  |
| Base-Emitter voltage – Basis-Emitter-Spannung<br>- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA                                                                                                 |  | - V <sub>BE</sub>                                                                    | 580 mV           | 660 mV                | 700 mV                               |
| Collector-Emitter cutoff current – Kollektorreststrom<br>- V <sub>CE</sub> = 60 V BC 556<br>- V <sub>CE</sub> = 40 V BC 557<br>- V <sub>CE</sub> = 25 V BC 558<br>- V <sub>CE</sub> = 25 V BC 559 |  | - I <sub>CE0</sub><br>- I <sub>CE0</sub><br>- I <sub>CE0</sub><br>- I <sub>CE0</sub> | –<br>–<br>–<br>– | –<br>–<br>–<br>–      | 0.1 μA<br>0.1 μA<br>0.1 μA<br>0.1 μA |
| Gain-Bandwidth Product – Transittfrequenz<br>- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA, f = 100 MHz                                                                                       |  | f <sub>T</sub>                                                                       | 150 MHz          | –                     | –                                    |
| Collector-Base Capacitance – Kollektor-Basis-Kapazität<br>- V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz                                                                |  | C <sub>CB0</sub>                                                                     | –                | –                     | 6 pF                                 |
| Emitter-Base Capacitance – Emitter-Basis-Kapazität<br>- V <sub>EB</sub> = 0.5 V, f = 1 MHz                                                                                                        |  | C <sub>EB0</sub>                                                                     | –                | 9 pF                  | –                                    |
| Noise figure – Rauschzahl<br>- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 200 μA BC 556...<br>R <sub>G</sub> = 2 kΩ f = 1 kHz, BC 558<br>Δf = 200 Hz BC 559                                        |  | F<br>F                                                                               | –<br>–           | 2 dB<br>1 dB          | 10 dB<br>4 dB                        |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft                                                                                                       |  | R <sub>thA</sub>                                                                     |                  | 200 K/W <sup>1)</sup> |                                      |
| Recommended complementary PNP transistors<br>Empfohlene komplementäre PNP-Transistoren                                                                                                            |  | BC 546 ... BC 549                                                                    |                  |                       |                                      |

|                                                                                       |                               |                                          |                               |
|---------------------------------------------------------------------------------------|-------------------------------|------------------------------------------|-------------------------------|
| Available current gain groups per type<br>Lieferbare Stromverstärkungsgruppen pro Typ | BC 556A<br>BC 557A<br>BC 558A | BC 556B<br>BC 557B<br>BC 558B<br>BC 559B | BC 557C<br>BC 558C<br>BC 559C |
|---------------------------------------------------------------------------------------|-------------------------------|------------------------------------------|-------------------------------|

<sup>1)</sup> Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig, wenn die Anschlußdrähte in 2 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden