

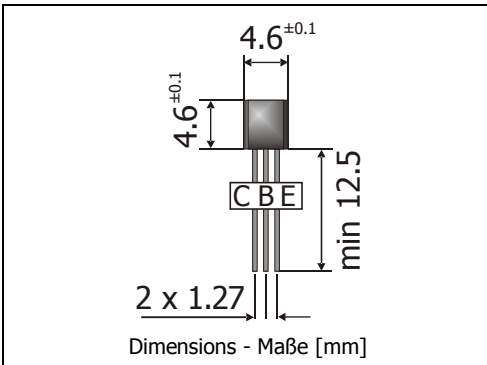
**BC556xBK ... BC559xBK**

**PNP**

**General Purpose Si-Epitaxial Planar Transistors  
Si-Epitaxial Planar-Transistoren für universellen Einsatz**

**PNP**

Version 2009-12-07



Power dissipation – Verlustleistung 500 mW  
 Plastic case Kunststoffgehäuse TO-92 (10D3)  
 Weight approx. – Gewicht ca. 0.18 g  
 Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert  
 Special packaging bulk Sonder-Lieferform Schüttgut



**Maximum ratings (T<sub>A</sub> = 25°C)**

**Grenzwerte (T<sub>A</sub> = 25°C)**

			<b>BC556</b>	<b>BC557</b>	<b>BC558/559</b>
Collector-Emitter-voltage	E-B short	- V <sub>CES</sub>	80 V	50 V	30 V
Collector-Emitter-voltage	B open	- V <sub>CEO</sub>	65 V	45 V	30 V
Collector-Base-voltage	E open	- V <sub>CBO</sub>	80 V	50 V	30 V
Emitter-Base-voltage	C open	- V <sub>EB0</sub>	5 V		
Power dissipation – Verlustleistung		P <sub>tot</sub>	500 mW <sup>1)</sup>		
Collector current – Kollektorstrom (dc)		- I <sub>C</sub>	100 mA		
Peak Collector current – Kollektor-Spitzenstrom		- I <sub>CM</sub>	200 mA		
Peak Base current – Basis-Spitzenstrom		- I <sub>BM</sub>	200 mA		
Peak Emitter current – Emitter-Spitzenstrom		I <sub>EM</sub>	200 mA		
Junction temperature – Sperrschichttemperatur		T <sub>j</sub>	-55...+150°C		
Storage temperature – Lagerungstemperatur		T <sub>s</sub>	-55...+150°C		

**Characteristics (T<sub>j</sub> = 25°C)**

**Kennwerte (T<sub>j</sub> = 25°C)**

		<b>Group A</b>	<b>Group B</b>	<b>Group C</b>
DC current gain – Kollektor-Basis-Stromverhältnis <sup>2)</sup>				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 µA	h <sub>FE</sub>	typ. 90	typ. 150	typ. 270
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA	h <sub>FE</sub>	110 ... 220	200 ... 450	420 ... 800
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 100 mA	h <sub>FE</sub>	typ. 120	typ. 200	typ. 400
h-Parameters at/bei - V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA, f = 1 kHz				
Small signal current gain Kleinsignal-Stromverstärkung	h <sub>fe</sub>	typ. 220	typ. 330	typ. 600
Input impedance – Eingangs-Impedanz	h <sub>ie</sub>	1.6 ... 4.5 kΩ	3.2 ... 8.5 kΩ	6 ... 15 kΩ
Output admittance – Ausgangs-Leitwert	h <sub>oe</sub>	18 < 30 µS	30 < 60 µS	60 < 110 µS
Reverse voltage transfer ratio Spannungsrückwirkung	h <sub>re</sub>	typ. 1.5*10 <sup>-4</sup>	typ. 2*10 <sup>-4</sup>	typ. 3*10 <sup>-4</sup>

1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case  
 Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

**Characteristics (T<sub>j</sub> = 25°C)****Kennwerte (T<sub>j</sub> = 25°C)**

			<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>
Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom					
- V <sub>CE</sub> = 80 V, (B-E short)	BC546	- I <sub>CES</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 50 V, (B-E short)	BC547	- I <sub>CES</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 30 V, (B-E short)	BC548 / BC549	- I <sub>CES</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 80 V, T <sub>j</sub> = 125°C, (B-E short)	BC546	- I <sub>CES</sub>	–	–	4 µA
- V <sub>CE</sub> = 50 V, T <sub>j</sub> = 125°C, (B-E short)	BC547	- I <sub>CES</sub>	–	–	4 µA
- V <sub>CE</sub> = 30 V, T <sub>j</sub> = 125°C, (B-E short)	BC548 / BC549	- I <sub>CES</sub>	–	–	4 µA
Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg <sup>2)</sup>					
- I <sub>C</sub> = 10 mA, - I <sub>B</sub> = 0.5 mA		- V <sub>CEsat</sub>	–	80 mV	300 mV
- I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA		- V <sub>CEsat</sub>	–	250 mV	650 mV
Base-Emitter saturation voltage – Basis-Emitter-Sättigungsspannung <sup>2)</sup>					
- I <sub>C</sub> = 10 mA, - I <sub>B</sub> = 0.5 mA		- V <sub>BEsat</sub>	–	700 mV	–
- I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA		- V <sub>BEsat</sub>	–	900 mV	–
Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup>					
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA		- V <sub>BE</sub>	600 mV	660 mV	750 mV
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA		- V <sub>BE</sub>	–	–	800 mV
Gain-Bandwidth Product – Transitfrequenz					
- 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					
- V <sub>CB</sub> = 10 V, I <sub>E</sub> = I <sub>C</sub> = 0, f = 1 MHz		C <sub>CB0</sub>	–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
- V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = I <sub>E</sub> = 0, f = 1 MHz		C <sub>EB0</sub>	–	10 pF	–
Noise figure – Rauschzahl					
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 200 µA, R <sub>G</sub> = 2 kΩ	BC556 ... BC558	F	–	2 dB	10 dB
f = 1 kHz, Δf = 200 Hz	BC559	F	–	1 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R <sub>thA</sub>	< 200 K/W <sup>1)</sup>	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			BC546 ... BC549		
Available current gain groups per type Lieferbare Stromverstärkungsgruppen pro Typ			BC556A BC557A BC558A	BC556B BC557B BC558B BC559B	BC557C BC558C BC559C

2 Tested with pulses t<sub>p</sub> = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 µs, Schaltverhältnis ≤ 2%

1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden