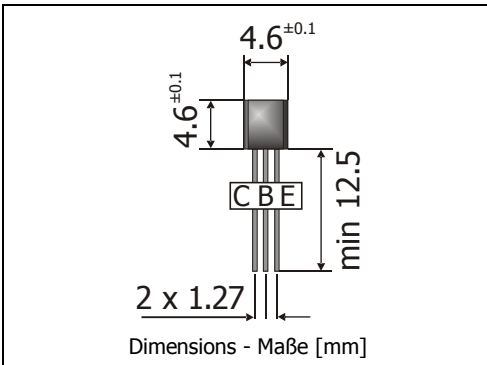


**BC546xBK ... BC549xBK**  
**General Purpose Si-Epitaxial Planar Transistors**  
**Si-Epitaxial Planar-Transistoren für universellen Einsatz**

**NPN** **NPN**

Version 2009-12-03



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  
 Special packaging bulk  
 Sonder-Lieferform Schüttgut



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

**Grenzwerte (T<sub>A</sub> = 25°C)**

			BC546	BC547	BC548/549
Collector-Emitter-voltage	E-B short	V <sub>CES</sub>	85 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>EBO</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)**

		Group A	Group B	Group C
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
Reverser 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>
<b>Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom</b>					
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
<b>Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. <sup>2)</sup></b>					
I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA		V <sub>CEsat</sub>	–	80 mV	200 mV
I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA		V <sub>CEsat</sub>	–	200 mV	600 mV
<b>Base saturation voltage – Basis-Sättigungsspannung <sup>2)</sup></b>					
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	–
<b>Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup></b>					
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA		V <sub>BE</sub>	580 mV	660 mV	700 mV
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA		V <sub>BE</sub>	–	–	720 mV
<b>Gain-Bandwidth Product – Transitfrequenz</b>					
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz		f <sub>T</sub>	–	300 MHz	–
<b>Collector-Base Capacitance – Kollektor-Basis-Kapazität</b>					
V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz		C <sub>CB0</sub>	–	3.5 pF	6 pF
<b>Emitter-Base Capacitance – Emitter-Basis-Kapazität</b>					
V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = i <sub>c</sub> = 0, f = 1 MHz		C <sub>EB0</sub>	–	9 pF	–
<b>Noise figure – Rauschzahl</b>					
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 200 µA, R <sub>G</sub> = 2 kΩ	BC546 / BC547	F	–	2 dB	10 dB
f = 1 kHz, Δf = 200 Hz	BC548 / BC549	F	–	1.2 dB	4 dB
<b>Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft</b>					
		R <sub>thA</sub>	< 200 K/W <sup>1)</sup>		
<b>Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren</b>					
			BC556 ... BC559		
<b>Available current gain groups per type Lieferbare Stromverstärkungsgruppen pro Typ</b>					
	BC546A	BC546B	BC547C		
	BC547A	BC547B	BC548C		
	BC548A	BC548B	BC549C		
		BC549B			

 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