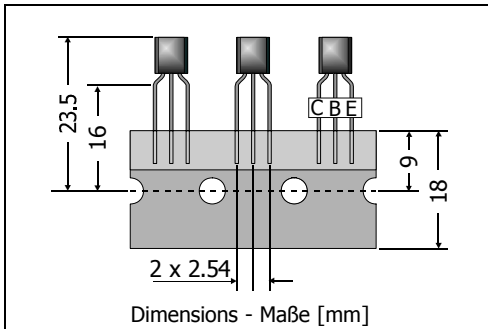


**BC546 ... BC549****NPN**
**General Purpose Si-Epitaxial Planar Transistors**  
**Si-Epitaxial Planar-Transistoren für universellen Einsatz**
**NPN**

Version 2006-05-31



Power dissipation – Verlustleistung

500 mW

Plastic case  
KunststoffgehäuseTO-92  
(10D3)

Weight approx. – Gewicht ca.

0.18 g

Plastic material has UL classification 94V-0  
Gehäusematerial UL94V-0 klassifiziertStandard packaging taped in ammo pack  
Standard Lieferform gegurtet in Ammo-Pack**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>CB0</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)**

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

		Min.	Typ.	Max.	
Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom					
$V_{CE} = 80\text{ V}$ , (B-E short)	BC546	$I_{CES}$	–	0.2 nA	15 nA
$V_{CE} = 50\text{ V}$ , (B-E short)	BC547	$I_{CES}$	–	0.2 nA	15 nA
$V_{CE} = 30\text{ V}$ , (B-E short)	BC548 / BC549	$I_{CES}$	–	0.2 nA	15 nA
$V_{CE} = 80\text{ V}$ , $T_j = 125^\circ\text{C}$ , (B-E short)	BC546	$I_{CES}$	–	–	4 $\mu\text{A}$
$V_{CE} = 50\text{ V}$ , $T_j = 125^\circ\text{C}$ , (B-E short)	BC547	$I_{CES}$	–	–	4 $\mu\text{A}$
$V_{CE} = 30\text{ V}$ , $T_j = 125^\circ\text{C}$ , (B-E short)	BC548 / BC549	$I_{CES}$	–	–	4 $\mu\text{A}$
Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. <sup>2)</sup>					
$I_C = 10\text{ mA}$ , $I_B = 0.5\text{ mA}$		$V_{CESat}$	–	80 mV	200 mV
$I_C = 100\text{ mA}$ , $I_B = 5\text{ mA}$		$V_{CESat}$	–	200 mV	600 mV
Base saturation voltage – Basis-Sättigungsspannung <sup>2)</sup>					
$I_C = 10\text{ mA}$ , $I_B = 0.5\text{ mA}$		$V_{BESat}$	–	700 mV	–
$I_C = 100\text{ mA}$ , $I_B = 5\text{ mA}$		$V_{BESat}$	–	900 mV	–
Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup>					
$V_{CE} = 5\text{ V}$ , $I_C = 2\text{ mA}$		$V_{BE}$	580 mV	660 mV	700 mV
$V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$		$V_{BE}$	–	–	720 mV
Gain-Bandwidth Product – Transitfrequenz					
$V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$		$f_T$	–	300 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
$V_{CB} = 10\text{ V}$ , $I_E = i_e = 0$ , $f = 1\text{ MHz}$		$C_{CBO}$	–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
$V_{EB} = 0.5\text{ V}$ , $I_C = i_c = 0$ , $f = 1\text{ MHz}$		$C_{EBO}$	–	9 pF	–
Noise figure – Rauschzahl					
$V_{CE} = 5\text{ V}$ , $I_C = 200\text{ }\mu\text{A}$ , $R_G = 2\text{ k}\Omega$	BC546 / BC547	F	–	2 dB	10 dB
$f = 1\text{ kHz}$ , $\Delta f = 200\text{ Hz}$	BC548 / BC549	F	–	1.2 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft					
		$R_{thA}$	< 200 K/W <sup>1)</sup>		
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren					
			BC556 ... BC559		
Available current gain groups per type Lieferbare Stromverstärkungsgruppen pro Typ					
			BC546A BC547A BC548A	BC546B BC547B BC548B BC549B	BC547C BC548C BC549C

<sup>2)</sup> Tested with pulses  $t_p = 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$  – Gemessen mit Impulsen  $t_p = 300\text{ }\mu\text{s}$ , Schaltverhältnis  $\leq 2\%$

<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 vom Gehäuse auf Umgebungstemperatur gehalten werden