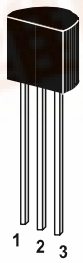
NPN **Si-Epitaxial PlanarTransistors** **NPN**



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˚C) Grenzwerte (T_A = 25˚C)

			BC 546	BC 547	BC 548/549
Collector-Emitter-voltage	B open	V_{CE0}	65 V	45 V	30 V
Collector-Emitter-voltage	B shorted	V_{CES}	85 V	50 V	30 V
Collector-Base-voltage	E open	V_{CB0}	80 V	50 V	30 V
Emitter-Base-voltage	C open	V_{EB0}	6 V	6 V	5 V
Power dissipation – Verlustleistung		P_{tot}	500 mW [1])		
Collector current – Kollektorstrom (DC)		I_C	100 mA		
Peak Coll. current – Kollektor-Spitzenstrom		I_{CM}	200 mA		
Peak Base current – Basis-Spitzenstrom		I_{BM}	200 mA		
Peak Emitter current – Emitter-Spitzenstrom		$-I_{EM}$	200 mA		
Junction temp. – Sperrschichttemperatur		T_j	150˚C		
Storage temperature – Lagerungstemperatur		T_S	- 65…+ 150˚C		

Characteristics, T_j = 25˚C Kennwerte, T_j = 25˚C

		Group A	Group B	Group C
DC current gain – Kollektor-Basis-Stromverhältnis				
V_{CE} = 5 V, I_C = 10 µA	h_{FE}	typ. 90	typ. 150	typ. 270
V_{CE} = 5 V, I_C = 2 mA	h_{FE}	110...220	200...450	420...800
V_{CE} = 5 V, I_C = 100 mA	h_{FE}	typ. 120	typ. 200	typ.400
h-Parameters at V_{CE} = 5V, I_C = 2 mA, f = 1 kHz				
Small signal current gain – Stromverst.	h_{fe}	typ. 220	typ. 330	typ. 600
Input impedance – Eingangsimpedanz	h_{ie}	1.6...4.5 kΩ	3.2...8.5 kΩ	6...15 kΩ
Output admittance – Ausgangsleitwert	h_{oe}	18 < 30 µS	30 < 60 µS	60 < 110 µS
Reverse voltage transfer ratio Spannungsrückwirkung	h_{re}	typ.1.5 $*10^{-4}$	typ. 2 $*10^{-4}$	typ. 3 $*10^{-4}$

[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 von Gehäuse auf Umgebungstemperatur gehalten werden

Characteristics, $T_j = 25^\circ C$ — Kennwerte, $T_j = 25^\circ C$

			Min.	Typ.	Max.
Collector saturation voltage – Kollektor-Sättigungsspannung					
I_C = 10 mA, I_B = 0.5 mA		V_{CEsat}	–	80 mV	200 mV
I_C = 100 mA, I_B = 5 mA		V_{CEsat}	–	200 mV	600 mV
Base saturation voltage – Basis-Sättigungsspannung					
I_C = 10 mA, I_B = 0.5 mA		V_{BEsat}	–	700 mV	–
I_C = 100 mA, I_B = 5 mA		V_{BEsat}	–	900 mV	–
Base-Emitter voltage – Basis-Emitter-Spannung					
V_{CE} = 5 V, I_C = 2 mA		V_{BE}	580 mV	660 mV	700 mV
V_{CE} = 5 V, I_C = 10 mA		V_{BE}	–	–	720 mV
Collector-Emitter cutoff current – Kollektorreststrom					
V_{CE} = 80 V	BC 546	I_{CES}	–	0.2 nA	15 nA
V_{CE} = 50 V	BC 547	I_{CES}	–	0.2 nA	15 nA
V_{CE} = 30 V	BC 548	I_{CES}	–	0.2 nA	15 nA
V_{CE} = 30 V	BC 549	I_{CES}	–	0.2 nA	15 nA
Collector-Emitter cutoff current – Kollektorreststrom					
V_{CE} = 80 V, T_j = 125°C	BC 546	I_{CES}	–	–	4 µA
V_{CE} = 50 V, T_j = 125°C	BC 547	I_{CES}	–	–	4 µA
V_{CE} = 30 V, T_j = 125°C	BC 548	I_{CES}	–	–	4 µA
V_{CE} = 30 V, T_j = 125°C	BC 549	I_{CES}	–	–	4 µA
Gain-Bandwidth Product – Transitfrequenz					
V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	–	300 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
V_{CB} = 10 V, f = 1 MHz		C_{CB0}	–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
V_{EB} = 0.5 V, f = 1 MHz		C_{EB0}	–	9 pF	–
Noise figure – Rauschmaß					
V_{CE} = 5 V, I_C = 200 µA	BC 547	F	–	2 dB	10 dB
R_G = 2 kΩ f = 1 kHz,	BC 548	F	–	1.2 dB	4 dB
Δ f = 200 Hz	BC 549	F	–	1.2 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft				R_{thA}	250 K/W [1])
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren				BC 556 ... BC 559	

Available current gain groups per type Lieferbare Stromverstärkungsgruppen pro Typ	BC 546A BC 547A BC 548A	BC 546B BC 547B BC 548B BC 549B	 BC 547C BC 548C BC 549C

[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 von Gehäuse auf Umgebungstemperatur gehalten werden