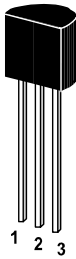


NPN

Si-Epitaxial Planar Transistors

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

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

		Group A	Group B	Group C
DC current gain – Kollektor-Basis-Stromverhältnis				
$V_{CE} = 5\text{ V}, I_C = 10\text{ }\mu\text{A}$	h_{FE}	typ. 90	typ. 150	typ. 270
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$	h_{FE}	110...220	200...450	420...800
$V_{CE} = 5\text{ V}, I_C = 100\text{ mA}$	h_{FE}	typ. 120	typ. 200	typ. 400
h-Parameters at $V_{CE} = 5\text{ V}, I_C = 2\text{ mA}, f = 1\text{ kHz}$				
Small signal current gain – Stromverst.	h_{fe}	typ. 220	typ. 330	typ. 600
Input impedance – Eingangsimpedanz	h_{ie}	1.6...4.5 k Ω	3.2...8.5 k Ω	6...15 k Ω
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, $T_j = 25^\circ\text{C}$ Kennwerte, $T_j = 25^\circ\text{C}$

			Min.	Typ.	Max.
Collector saturation voltage – Kollektor-Sättigungsspannung					
$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$	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					
$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$	V_{BEsat}		–	700 mV	–
$I_C = 100\text{ mA}, I_B = 5\text{ mA}$	V_{BEsat}		–	900 mV	–
Base-Emitter voltage – Basis-Emitter-Spannung					
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$	V_{BE}		580 mV	660 mV	700 mV
$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	V_{BE}		–	–	720 mV
Collector-Emitter cutoff current – Kollektorreststrom					
$V_{CE} = 80\text{ V}$	BC 546	I_{CES}	–	0.2 nA	15 nA
$V_{CE} = 50\text{ V}$	BC 547	I_{CES}	–	0.2 nA	15 nA
$V_{CE} = 30\text{ V}$	BC 548	I_{CES}	–	0.2 nA	15 nA
$V_{CE} = 30\text{ V}$	BC 549	I_{CES}	–	0.2 nA	15 nA
Collector-Emitter cutoff current – Kollektorreststrom					
$V_{CE} = 80\text{ V}, T_j = 125^\circ\text{C}$	BC 546	I_{CES}	–	–	4 μA
$V_{CE} = 50\text{ V}, T_j = 125^\circ\text{C}$	BC 547	I_{CES}	–	–	4 μA
$V_{CE} = 30\text{ V}, T_j = 125^\circ\text{C}$	BC 548	I_{CES}	–	–	4 μA
$V_{CE} = 30\text{ V}, T_j = 125^\circ\text{C}$	BC 549	I_{CES}	–	–	4 μA
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					
$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	C_{CB0}		–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
$V_{EB} = 0.5\text{ V}, f = 1\text{ MHz}$	C_{EB0}		–	9 pF	–
Noise figure – Rauschmaß					
$V_{CE} = 5\text{ V}, I_C = 200\text{ }\mu\text{A}$	BC 547	F	–	2 dB	10 dB
$R_G = 2\text{ k}\Omega, f = 1\text{ kHz},$	BC 548	F	–	1.2 dB	4 dB
$\Delta f = 200\text{ Hz}$	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	BC 546A	BC 546B	
Lieferbare Stromverstärkungsgruppen pro Typ	BC 547A	BC 547B	BC 547C
	BC 548A	BC 548B	BC 548C
		BC 549B	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