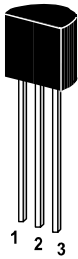


NPN

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 <sup>1)</sup>		
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 $\Omega$	3.2...8.5 k $\Omega$	6...15 k $\Omega$
Output admittance – Ausgangsleitwert	$h_{oe}$	18 < 30 $\mu\text{S}$	30 < 60 $\mu\text{S}$	60 < 110 $\mu\text{S}$
Reverse voltage transfer ratio Spannungsrückwirkung	$h_{re}$	typ. 1.5 * 10 <sup>-4</sup>	typ. 2 * 10 <sup>-4</sup>	typ. 3 * 10 <sup>-4</sup>

<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 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 $\mu\text{A}$
$V_{CE} = 50\text{ V}$ , $T_j = 125^\circ\text{C}$ BC 547	$I_{CES}$		–	–	4 $\mu\text{A}$
$V_{CE} = 30\text{ V}$ , $T_j = 125^\circ\text{C}$ BC 548	$I_{CES}$		–	–	4 $\mu\text{A}$
$V_{CE} = 30\text{ V}$ , $T_j = 125^\circ\text{C}$ BC 549	$I_{CES}$		–	–	4 $\mu\text{A}$
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 <sup>1)</sup>
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

<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 von Gehäuse auf Umgebungstemperatur gehalten werden

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