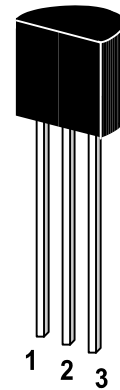


## NPN Silicon Epitaxial Planar Transistor

These transistors are subdivided into three groups A, B and C according to their current gain. The type BC546 is available in groups A and B, however, the types BC547 and BC548 can be supplied in all three groups. The BC549 is low-noise type and available in groups B and C. As complementary types, the PNP transistors BC556...BC559 are recommended.

On special request, these transistors can be manufactured in different pin configurations.



1. Collector 2. Base 3. Emitter

TO-92 Plastic Package  
Weight approx. 0.19g

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

		Symbol	Value	Unit
Collector Base Voltage	BC546	$V_{CBO}$	80	V
	BC547	$V_{CBO}$	50	V
	BC548, BC549	$V_{CBO}$	30	V
Collector Emitter Voltage	BC546	$V_{CES}$	85	V
	BC547	$V_{CES}$	50	V
	BC548, BC549	$V_{CES}$	30	V
Collector Emitter Voltage	BC546	$V_{CEO}$	65	V
	BC547	$V_{CEO}$	45	V
	BC548, BC549	$V_{CEO}$	30	V
Emitter Base Voltage	BC546, BC547	$V_{EBO}$	6	V
	BC548, BC549	$V_{EBO}$	5	V
Collector Current		$I_C$	100	mA
Peak Collector Current		$I_{CM}$	200	mA
Peak Base Current		$I_{BM}$	200	mA
Peak Emitter Current		$-I_{EM}$	200	mA
Power Dissipation		$P_{tot}$	500 <sup>1)</sup>	mW
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_s$	-65 to +150	$^\circ\text{C}$

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

**G S P FORM A IS AVAILABLE**

## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain.					
at $V_{CE}=5V, I_C=10\mu A$	Current Gain Group A	$h_{FE}$	-	90	-
	B	$h_{FE}$	-	150	-
	C	$h_{FE}$	-	270	-
at $V_{CE}=5V, I_C=2mA$	Current Gain Group A	$h_{FE}$	110	180	220
	B	$h_{FE}$	200	290	450
	C	$h_{FE}$	420	500	800
at $V_{CE}=5V, I_C=100mA$	Current Gain Group A	$h_{FE}$	-	120	-
	B	$h_{FE}$	-	200	-
	C	$h_{FE}$	-	400	-
Collector Saturation Voltage					
at $I_C=10mA, I_B=0.5mA$	$V_{CEsat}$	-	80	200	mV
at $I_C=100mA, I_B=5mA$	$V_{CEsat}$	-	200	600	mV
Base Saturation Voltage					
at $I_C=10mA, I_B=0.5mA$	$V_{BEsat}$	-	700	-	mV
at $I_C=100mA, I_B=5mA$	$V_{BEsat}$	-	900	-	mV
Base Emitter Voltage					
at $V_{CE}=5V, I_C=2mA$	$V_{BE}$	580	660	700	mV
at $V_{CE}=5V, I_C=10mA$	$V_{BE}$	-	-	720	mV
Collector Emitter Cutoff Current					
at $V_{CE}=80V$	BC546	$I_{CES}$	-	0.2	15
at $V_{CE}=50V$	BC547	$I_{CES}$	-	0.2	15
at $V_{CE}=30V$	BC548, BC549	$I_{CES}$	-	0.2	15
at $V_{CE}=80V, T_J=125\text{ }^{\circ}\text{C}$	BC546	$I_{CES}$	-	-	4
at $V_{CE}=50V, T_J=125\text{ }^{\circ}\text{C}$	BC547	$I_{CES}$	-	-	4
Thermal Resistance Junction to Ambient Air	$R_{thA}$	-	-	250 <sup>1)</sup>	K/W

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

# BC546 ... BC549



## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
at $V_{CE}=30\text{V}$ , $T_j=125\text{ }^{\circ}\text{C}$ BC548, BC549	$I_{CES}$	-	-	4 4	$\mu\text{A}$ $\mu\text{A}$
Gain Bandwidth Product at $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$	$f_T$	-	300	-	MHz
Collector Base Capacitance at $V_{CB}=10\text{V}$ , $f=1\text{MHz}$	$C_{CB0}$	-	3.5	6	pF
Emitter Base Capacitance at $V_{EB}=0.5\text{V}$ , $f=1\text{MHz}$	$C_{EB0}$	-	9	-	pF
Noise Figure at $V_{CE}=5\text{V}$ , $I_C=200\mu\text{A}$ , $R_G=2\text{k}\Omega$ , $f=1\text{kHz}$ , $\Delta f=200\text{Hz}$ BC546, BC547	F	-	2	10	dB
BC548, BC549	F	-	1.2	4	dB

**G S P FORM A IS AVAILABLE**