

**Pin Configuration:**

- 1. Collector
- 2. Base
- 3. Emitter

**Features:**

- NPN general purpose transistors, especially suited for use in driver stages of audio amplifiers, low noise input stages of tape recorders, HI-FI amplifiers, signal processing circuits of television receivers

**Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$  unless otherwise specified)**

Parameters	Symbol	Value	Unit
Collector Emitter Voltage	$V_{CEO}$	45	V
Collector Emitter Voltage	$V_{CES}$	50	
Collector Base Voltage	$V_{CBO}$		
Emitter Base Voltage	$V_{EBO}$	6	
Collector Current Continuous	$I_C$	100	mA
Peak	$I_{CM}$	200	
Base Current Peak	$I_{BM}$	200	
Emitter Current Peak	$I_{EM}$		
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{TA}$	500 4	mW mW/ $^\circ\text{C}$
Storage Temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Junction Temperature	$T_j$	150	

**Thermal Resistance**

Junction to Ambient	$R_{th(j-a)}$	250	$^\circ\text{C}/\text{W}$
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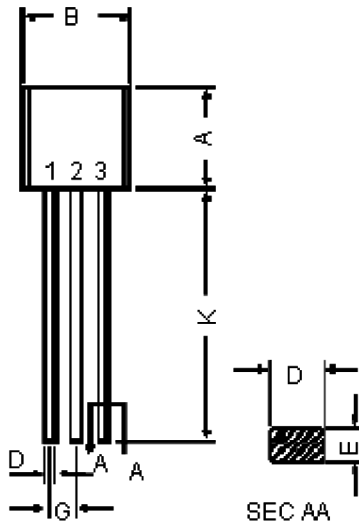
## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbol	Test Condition	Value	Unit
Collector Emitter Voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	>45	V
Collector Base Voltage	$V_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	>50	
Emitter Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	>6	
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 30\text{V}, I_E = 0$ $T_J = 150^\circ\text{C}$ $V_{CB} = 30\text{V}, I_E = 0$	<50 <5	nA $\mu\text{A}$
	$I_{CES}$	$V_{CE} = 50\text{V}, V_{BE} = 0$ $T_J = 125^\circ\text{C}$	<15	nA
Collector Cut off Current		$V_{CE} = 50\text{V}, V_{BE} = 0$	<4	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	200	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	<0.25 <0.6	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	Typical 0.7 Typical 0.9	
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}$	0.55 - 0.7 <0.72	

## Dynamic Characteristics

Transition Frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $f = 100\text{MHz}$	Typical 300	MHz
Collector Output Capacitance	$C_{cbo}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	<4.5	pF
Emitter Input Capacitance	$C_{ib}$	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$	Typical 9	
Noise Figure	NF	$I_C = 0.2\text{mA}, V_{CE} = 5\text{V}$ $R_s = 1\text{k}\Omega, f = 200\text{Hz}$	<10	dB
Small Signal Current Gain	$h_{fe}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	Typical 330	-
Input Impedance	$h_{ie}$		3.2 - 8.5	k $\Omega$
Voltage Feedback Ratio	$h_{re}$		Typical 2	$\times 10^{-4}$
Output Impedance	$h_{oe}$		<60	$\mu\Omega$

## TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.2
C	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
H		1.53
K	12.7	-

Dimensions : Millimetres



### Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC547B

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