

BC547B

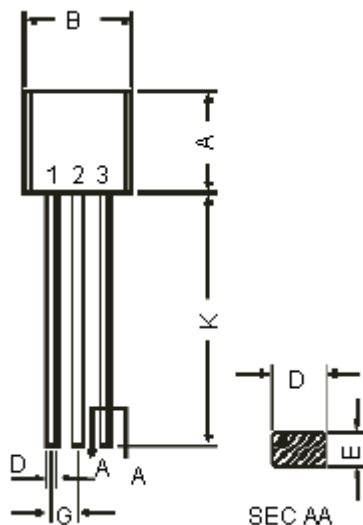
General Purpose Transistor



Features:

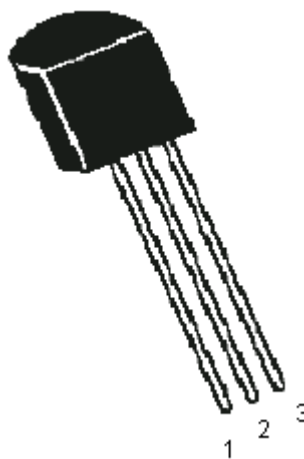
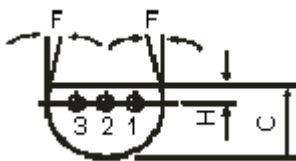
- NPN general purpose transistors, especially suited for use in driver stages of audio amplifiers, low noise input stages of tape recorders, HI-FI amplifiers, signal processing circuits of television receivers.

TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-

Dimensions : Millimetres



Pin Configuration:

1. Collector
2. Base
3. Emitter

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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}	6.0	
Collector Current Continuous Peak	I _C I _{CM}	100 200	mA
Base Current Peak	I _{BM}	200	
Emitter Current Peak	I _{EM}		
Power Dissipation at T _a = 25°C Derate above 25°C	P _{TA}	500 4.0	mW mW/°C
Storage Temperature	T _{stg}	-65 to +150	°C
Junction Temperature	T _j	150	
Thermal Resistance			
Junction to Ambient	R _{th (j-a)}	250	°C/W

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}	$I_E = 10\mu\text{A}, I_C = 0$	>6.0	
$(1+\beta)I_{CBO} = I_{CEO}$ 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 <5.0	nA μA
	I_{CES}	$V_{CE} = 50\text{V}, V_{BE} = 0$ $T_J = 125^\circ\text{C}$	<15	nA
Collector Cut off Current		$V_{CE} = 50\text{V}, V_{BE} = 0$	<4.0	μA
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 <0.60	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 0.70 Typical 0.90	
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 - 0.70 <0.72	



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Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbol	Test Condition	Value	Units
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}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	<4.50	pF
Emitter Input Capacitance	C_{ib}	$V_{EB} = 0.5\text{V}$, $f = 1\text{MHz}$	Typical 9.0	
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 Ω
Voltage Feedback Ratio	h_{re}		Typical 2.0	$\times 10^{-4}$
Output Impedance	h_{oe}		<60	$\mu\Omega$

$\beta_{ac} = h_{fe}$

h-parameter model

Specifications

V_{CEO} (V)	V_{CBO} Maximum (V)	I_C (A)	h_{FE} Minimum at $I_C = 2\text{mA}$	f_T (Typical) MHz	P_{tot} (mW)	Package	Part Number
45	50	0.1	200	300	625	TO-92	BC547B



BC557B

General Purpose Transistor



Notes:

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