

# BC557B

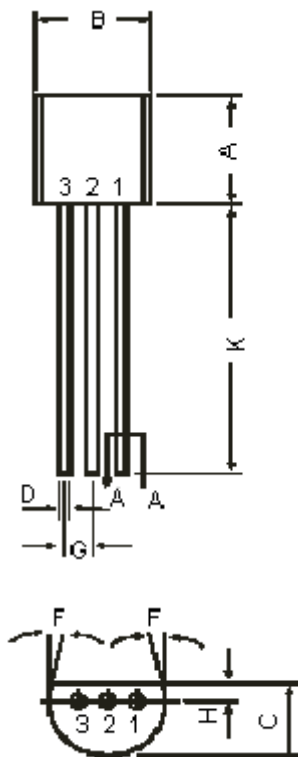
## General Purpose Transistors



### Features:

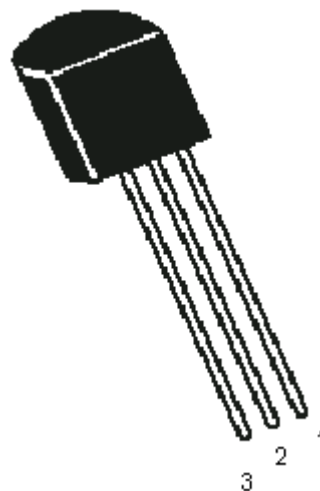
- PNP Silicon Planar Epitaxial Transistors.
- Especially Suited For use in Driver Stages of Audio Amplifiers, Low Noise Input Stages of Tape Recorders, HI-FI Amplifiers, Signal Processing Circuits of Television Receivers.

### 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. Emitter
2. Base
3. Collector



### Absolute Maximum Ratings

Parameters	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	45	V
Collector-Emitter Voltage	$V_{CES}$	50	
Collector-Base Voltage	$V_{CBO}$		
Emitter-Base Voltage	$V_{EBO}$	5.0	
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 $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{TA}$	500 4.0	mW mW/ $^\circ\text{C}$
Storage Temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Junction Temperature	$T_j$	150	
<b>Thermal Resistance</b>			
Junction to Ambient	$R_{th(j-a)}$	250	$^\circ\text{C}/\text{W}$

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

Parameters	Symbol	Test Condition	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	$I_C = 2\text{mA}, I_B = 0$	>45	V
Collector-Base Voltage	$V_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	>50	
Emitter-Base Voltage	$V_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	>5.0	
Collector-Cut off Current	$I_{CBO}$ $I_{CES}$	$V_{CB} = 30\text{V}, I_E = 0$ $T_j = 150^\circ\text{C}$	<15	nA
		$V_{CB} = 30\text{V}, I_E = 0$	<5.0	$\mu\text{A}$
		$V_{CE} = 80\text{V}, V_{BE} = 0$	<15	nA
Collector-Cut off Current	$I_{CES}$	$T_j = 125^\circ\text{C}$ $V_{CE} = 80\text{V}, V_{BE} = 0$	<4.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ <b>BC557B</b> $I_C = 100\text{mA}, V_{CE} = 5\text{V}$ <b>BC557B</b>	Typical 150 200 - 450 Typical 200	-

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### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ Unless Otherwise Specified)

Parameters	Symbol	Test Condition	Rating	Unit
Collector Emitter Saturation Voltage	$V_{CE (Sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	<0.30 <0.65	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 <0.82	
<b>Dynamic Characteristics</b>				
Transition Frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $f = 100\text{MHz}$	Typical 150	MHz
Collector output Capacitance	$C_{cbo}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	<6.0	pF
Emitter Input Capacitance	$C_{ib}$	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$	Typical 9.0	
Noise Figure	NF	$I_C = 0.2\text{mA}, V_{CE} = 5\text{V}$ $R_S = 2\text{k}\Omega, f = 1\text{kHz}$ $B = 200\text{Hz}$	<10	dB
Small Signal Current Gain	$h_{fe}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V} - \text{BC557B}$	Typical 330	-
Input Impedance	$h_{ie}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V} - \text{BC557B}$	3.2 - 8.5	K $\Omega$
Voltage Feedback Ratio	$h_{re}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V} - \text{BC557B}$	Typical 2.0	$\times 10^{-4}$
Out put Admittance	$h_{oe}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V} - \text{BC557B}$	<60	umhos

### Specifications

$V_{CEO}$ Maximum (V)	$V_{CBO}$ Maximum (V)	$I_C$ (A)	$h_{FE}$ Minimum at $I_C = 2\text{mA}$	$F_T$ Minimum (MHz)	$P_{tot}$ (mW)	Package	Part Number
45	50	0.1	75	75	625	TO-92	BC557B



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