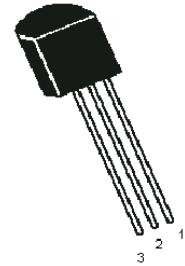


# General Purpose Transistor



#### Pin Configuration:

1. Emitter
2. Base
3. Collector

#### Features:

- NPN silicon planar epitaxial transistors
- General purpose transistors, best suited for use in driver stages of audio amplifiers, of tape recorders. Low noise input stages, Hi-Fi amplifiers, signal processing circuits of television receivers

#### Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Collector Emitter Voltage	$V_{CEO}$	30	V
Collector Base Voltage	$V_{CBO}$		
Emitter Base Voltage	$V_{EBO}$		
Collector Current Continuous	$I_C$	100	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	625	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$		5	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	1.5	W
		12	mW/ $^\circ\text{C}$
		-55 to +150	$^\circ\text{C}$

#### Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	200	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	83.3	

# General Purpose Transistor

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

Parameters	Symbol	Test Condition	Min.	Typ.	Max.	Units
Collector Emitter Voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	30	-	-	V
Collector Base Voltage	$V_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$		-	-	
Emitter Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5	-	-	
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 30\text{V}, I_E = 0$ $V_{CB} = 30\text{V}, I_E = 0,$ $T_a = +125^\circ\text{C}$	-	-	15 5	nA $\mu\text{A}$
Emitter Cut off Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$	-	-	15	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}, I_C = 2\text{mA}$	100 420	270 500	- 800	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 10\text{mA}, I_B = \text{see note 1}$ $I_C = 100\text{mA}, I_B = 5\text{mA}^*$	-	0.075 0.3 0.25	0.25 0.6 0.6	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 5\text{mA}^*$	-	1.1	-	
Base Emitter on Voltage	$V_{BE(on)}$	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 100\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$	0.55	0.52 0.55 0.62	0.7	

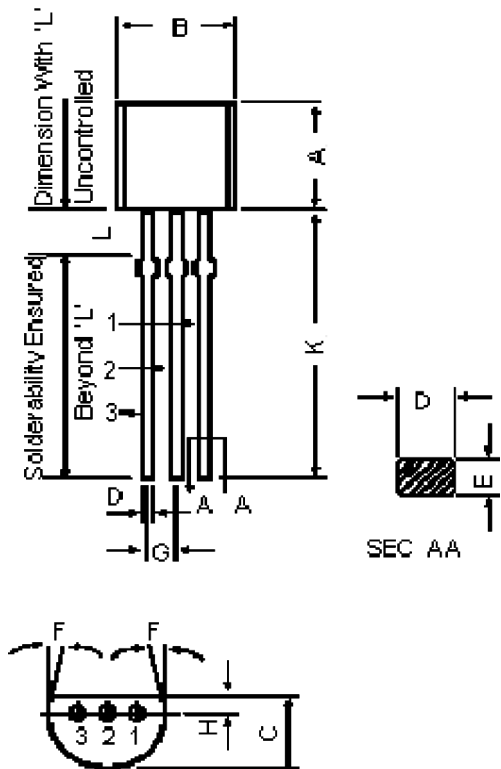
## Dynamic Characteristics

Transition Frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 5\text{V},$ $f = 100\text{MHz}$	-	250	-	MHz
Collector Output Capacitance	$C_{cbo}$	$I_E = 0, V_{CE} = 10\text{V}$ $f = 1\text{MHz}$	-	2.5	-	pF
Noise Figure	$NF_1^*$	$V_{CE} = 5\text{V}, I_C = 200\mu\text{A}$ $R_S = 2\text{K}\Omega,$ $f = 30\text{Hz} - 15\text{kHz}$	-	0.6	2.5 10	dB
	$NF_2$	$V_{CE} = 5\text{V}, I_C = 200\mu\text{A}$ $R_S = 100\text{K}\Omega, f = 1\text{kHz}$				
Small Signal Current Gain	$h_{fe}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $f = 1\text{kHz}$	450	600	900	-

Note 1:  $I_B$  is value for which  $I_C = 11\text{mA}$  at  $V_{CE} = 1\text{V}$

\*Pulse Condition: = Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

# General Purpose Transistor



Dimensions	Min.	Max.
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	-
L	1.982	2.082

Dimensions : Millimetres

## Pin Configuration:

1. Emitter
2. Base
3. Collector

## Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC549C

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