

BC549C

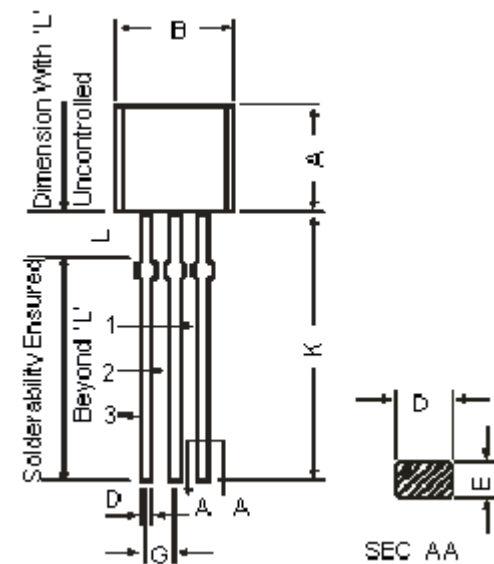
General Purpose Transistors



Features:

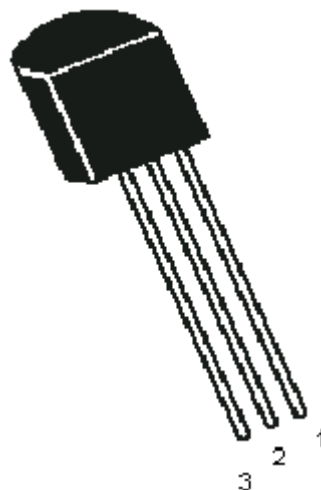
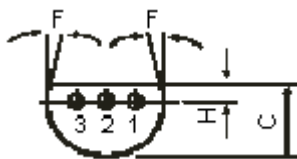
- NPN silicon planar epitaxial transistors.
- General purpose transistors, best suited for use in driver stages of audio amplifiers, of tape recorders. Low noise input stages, Hi-Fi amplifiers, signal processing circuits of television receivers.

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	-
L	1.982	2.082

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Base
3. Collector

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

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°C	P_D	625	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		5	mW/°C
		1.5	W
		12	mW/°C
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	°C
Thermal Resistance			
Junction to Ambient	$R_{th(j-a)}$	200	°C/W
Junction to Case	$R_{th(j-c)}$	83.3	

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

Parameters	Symbol	Test Condition	Minimum	Typical	Maximum	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 μA
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	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 10\text{mA}, I_B = \text{see note1}$ $I_C = 100\text{mA}, I_B = 5\text{mA}^*$	-	0.075 0.30 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	0.70	

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

Parameters	Symbol	Test Condition	Minimum	Typical	Maximum	Units
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}	$I_E = 0$, $V_{CE} = 10\text{V}$ $f = 1\text{MHz}$	-	2.50	-	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	dB
	NF_2	$V_{CE} = 5\text{V}$, $I_C = 200\mu\text{A}$ $R_S = 100\text{K}\Omega$, $f = 1.0\text{KHz}$	-		10	
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 $\leq 2\%$.

Specifications

V_{CEO} Maximum (V)	I_C Maximum (A)	h_{FE} Minimum at $I_C = 2\text{mA}$	F (Typical) MHz	f_T (Typical) MHz	P_{tot} at 25°C	Package and Pinout	Part Number
30	0.1	420	1.4	300	500	TO-92	BC549C

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