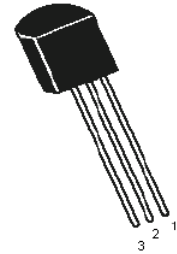


# General Purpose Transistor



## Pin Configuration:

1. Emitter
2. Base
3. Collector

## Description:

General purpose NPN silicon planar epitaxial transistors, best 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

Parameter	Symbol	Value	Units
Collector-Emitter Voltage	$V_{CEO}$	45	V
Collector-Emitter Voltage	$V_{CES}$	50	
Emitter-Base Voltage	$V_{EBO}$	6	
Collector Current Continuous	$I_C$	100	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	350	mW
Total Device Dissipation at $T_c = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		2.8	$\text{mW}/^\circ\text{C}$
		1	W
		8	$\text{mW}/^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to + 150	$^\circ\text{C}$

## Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	375	$^\circ\text{C}/\text{W}$
Junction to Case	$R_{th(j-c)}$	125	

# General Purpose Transistor

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

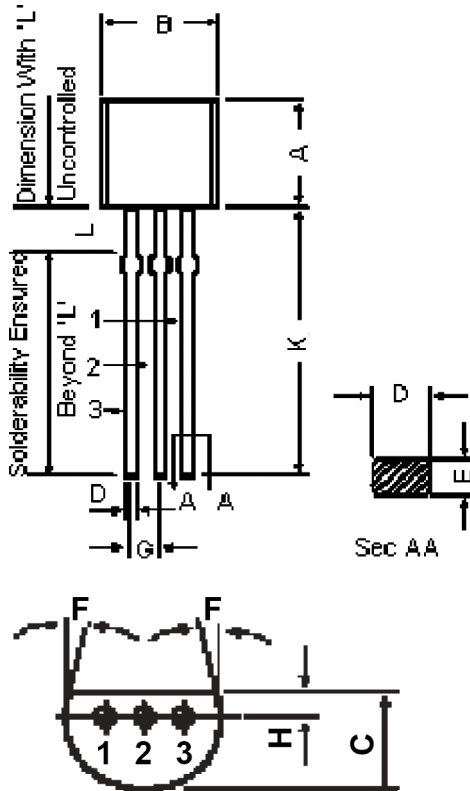
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Collector Emitter Voltage	$V_{CE0}$	$I_C = 2\text{mA}, I_B = 0$	45	-	-	V
Emitter Base Voltage	$V_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	6	-	-	
Collector Cut off Current	$I_{CES}$	$V_{CE} = 50\text{V}, V_{BE} = 0$ $V_{CE} = 50\text{V}, V_{BE} = 0,$ $T_a = 125^\circ\text{C}$	-	-	15 4	nA $\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C = 2\text{mA}, V_{CE} = 50\text{V}$	200	290	460	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}^*$	-	0.07 0.2	0.2 0.6	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 0.5\text{mA}^*$	-	0.6	0.83 1.05	
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 100\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$	0.55	0.5 0.62 0.83	0.7	

## Dynamic Characteristics

Transition Frequency	$f_T$	$I_C = 0.5\text{mA}, V_{CE} = 3\text{V}$ $f = 100\text{MHz}$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $f = 100\text{MHz}$	- 150	100 200	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$	-	-	4.5	pF
Emitter Input Capacitance	$C_{ib}$	$V_{EB} = 0.5\text{V}, I_E = 0$ $f = 1\text{MHz}$	-	8		
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $R_s = 2\text{k}\Omega, f = 1\text{kHz}$ $F = 200\text{Hz}$	-	2	10	dB

\*Pulse Condition: Pulse Width 300 $\mu\text{s}$ , Duty Cycle 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	1.14	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	BC237B

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