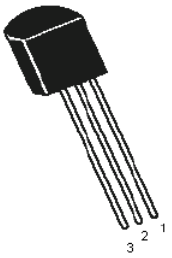
General Purpose Transistor



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°C Derate Above 25°C	P_D	350 2.8	mW mW/°C
Total Device Dissipation at T_c = 25°C Derate Above 25°C		1 8	W mW/°C
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to + 150	°C

Thermal Resistance

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

Electrical Characteristics (T_a = 25°C unless otherwise specified)

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

Dynamic Characteristics

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

*Pulse Condition: Pulse Width 300µs, Duty Cycle 2%.

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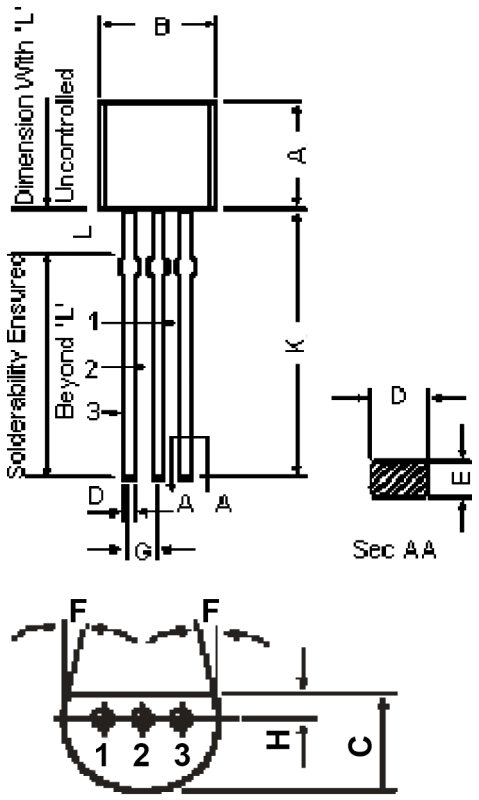

Dimensions	Min.	Max.
A	4.32	5.33
B	4.45	5.2
C	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
H	1.14	1.53
K	12.7	-
L	1.982	2.082

Dimensions : Millimetres

Pin Configuration:

1. Emitter
2. Base
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Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC237B