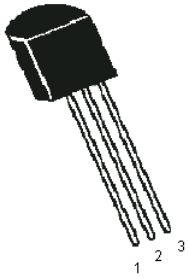
General Purpose Transistor



Pin Configuration:
1. Collector
2. Base
3. Emitter

Features:

- NPN general purpose 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

Absolute Maximum Ratings (T_a = 25°C unless otherwise specified)

Parameters	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	45	V
Collector Emitter Voltage	V_{CES}	50	
Collector Base Voltage	V_{CBO}		
Emitter Base Voltage	V_{EBO}	6	
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 Ta = 25°C Derate above 25°C	P_{TA}	500 4	mW mW/°C
Storage Temperature	T_{stg}	-65 to +150	°C
Junction Temperature	T_j	150	

Thermal Resistance

Junction to Ambient	$R_{th\ (j\text{-}a)}$	250	°C/W

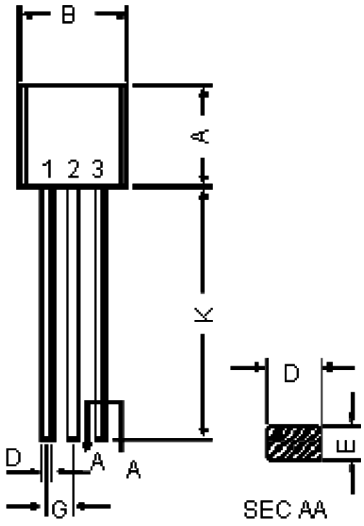
Electrical Characteristics (T_a = 25°C unless otherwise specified)

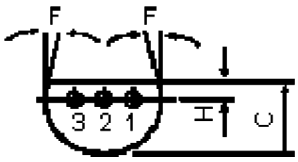
Parameters	Symbol	Test Condition	Value	Unit
Collector Emitter Voltage	V_{CEO}	I_C = 1mA, I_B = 0	>45	V
Collector Base Voltage	V_{CBO}	I_C = 10µA, I_E = 0	>50	
Emitter Base Voltage	V_{EBO}	I_E = 10µA, I_C = 0	>6	
Collector Cut off Current	I_{CBO}	V_{CB} = 30V, I_E = 0 T_J = 150°C V_{CB} = 30V, I_E = 0	<50 <5	nA µA
	I_{CES}	V_{CE} = 50V, V_{BE} = 0 T_J = 125°C	<15	nA
Collector Cut off Current		V_{CE} = 50V, V_{BE} = 0	<4	µA
DC Current Gain	h_{FE}	I_C = 2mA, V_{CE} = 5V	200	-
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5mA	<0.25 <0.6	V
Base Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5mA	Typical 0.7 Typical 0.9	
Base Emitter On Voltage	$V_{BE\ (on)}$	I_C = 2mA, V_{CE} = 5V I_C = 10mA, V_{CE} = 5V	0.55 - 0.7 <0.72	

Dynamic Characteristics

Transition Frequency	f_T	I_C = 10mA, V_{CE} = 5V f = 100MHz	Typical 300	MHz
Collector Output Capacitance	C_{cbo}	V_{CB} = 10V, f = 1MHz	<4.5	pF
Emitter Input Capacitance	C_{ib}	V_{EB} = 0.5V, f = 1MHz	Typical 9	
Noise Figure	NF	I_C = 0.2mA, V_{CE} = 5V Rs = 1kΩ, f = 200Hz	<10	dB
Small Signal Current Gain	h_{fe}	I_C = 2mA, V_{CE} = 5V	Typical 330	-
Input Impedance	h_{ie}		3.2 - 8.5	kΩ
Voltage Feedback Ratio	h_{re}		Typical 2	× 10-4
Output Impedance	h_{oe}		<60	µΩ

TO-92 Plastic Package





Dimensions	Minimum	Maximum
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	-

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC547B