## General Purpose Transistor multicomp





### **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 <sub>CEO</sub>	45	V	
Collector Emitter Voltage	V <sub>CES</sub>	50		
Collector Base Voltage	$V_{CBO}$	50		
Emitter Base Voltage	$V_{EBO}$	6		
Collector Current Continuous Peak	I <sub>C</sub> I <sub>CM</sub>	100 200		
Base Current Peak	I <sub>BM</sub>	200	mA	
Emitter Current Peak	I <sub>EM</sub>	7 200		
Power Dissipation at Ta = 25°C Derate above 25°C	P <sub>TA</sub>	500 4	mW mW/°C	
Storage Temperature	T <sub>stg</sub>	-65 to +150	°C	
Junction Temperature	T <sub>j</sub>	150		

#### **Thermal Resistance**

Junction to Ambient	R <sub>th (j-a)</sub>	250	°C/W



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

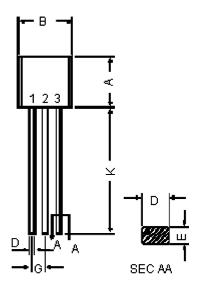
Parameters	Symbol	Test Condition	Value	Unit
Collector Emitter Voltage	V <sub>CEO</sub>	$I_C = 1mA, I_B = 0$	>45	
Collector Base Voltage	V <sub>CBO</sub>	$I_{\rm C} = 10 \mu A, I_{\rm E} = 0$	>50	V
Emitter Base Voltage	V <sub>EBO</sub>	$I_{E} = 10 \mu A, I_{C} = 0$	<b>^</b> 6	
Collector Cut off Current	I <sub>CBO</sub>	$V_{CB} = 30V, I_{E} = 0$ $T_{J} = 150^{\circ}C$ $V_{CB} = 30V, I_{E} = 0$	<50 <5	nΑ μΑ
	I <sub>CES</sub>	$V_{CE} = 50V, V_{BE} = 0$ $T_{J} = 125^{\circ}C$	<15	nA
Collector Cut off Current	CLS	$V_{CE} = 50V, V_{BE} = 0$	<4	μΑ
DC Current Gain	h <sub>FE</sub>	$I_C = 2mA, V_{CE} = 5V$	200	-
Collector Emitter Saturation Voltage	V <sub>CE (sat)</sub>	$I_{C} = 10 \text{mA}, I_{B} = 0.5 \text{mA}$ $I_{C} = 100 \text{mA}, I_{B} = 5 \text{mA}$	<0.25 <0.6	
Base Emitter Saturation Voltage	V <sub>BE (sat)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA I <sub>C</sub> = 100mA, I <sub>B</sub> = 5mA	Typical 0.7 Typical 0.9	V
Base Emitter On Voltage	V <sub>BE (on)</sub>	$I_{C} = 2mA, V_{CE} = 5V$ $I_{C} = 10mA, V_{CE} = 5V$	0.55 - 0.7 <0.72	

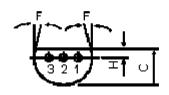
#### **Dynamic Characteristics**

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

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## **TO-92 Plastic Package**





Dimensions	Minimum	Maximum
А	4.32	5.33
В	4.45	5.2
С	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
Н		1.53
K	12.7	-

Dimensions: Millimetres

### **Part Number Table**

Description	Part Number	
Transistor, NPN, TO-92	BC547B	

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