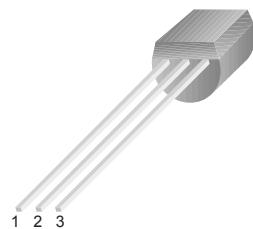


# Bipolar Transistor

**multicomp**



## Description:

- General Purpose NPN Silicon Planar Epitaxial Amplifier Transistors.
- This device is designed for general purpose amplifier application at collector currents to 100mA.

## Pin Configuration:

- Collector
- Base
- Emitter

## Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Description	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	50	V
Collector-Base Voltage	$V_{CBO}$	60	
Emitter-Base Voltage	$V_{EBO}$	6	
Collector Current Continuous	$I_C$	100	
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to + 150	°C

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 2\text{mA}, I_B = 0$	50			V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 50\text{V}, V_{BE} = 0$			15	nA
Emitter-Base Leakage Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_E = 0$			15	nA
<b>On Characteristics</b>						
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}, I_C = 100\text{mA}$	40 80			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$			0.25 0.6	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 100\text{mA}, I_B = 5\text{mA}$			1.2	V
Base-Emitter On Voltage	$V_{BE(ON)}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	0.55		0.7	V

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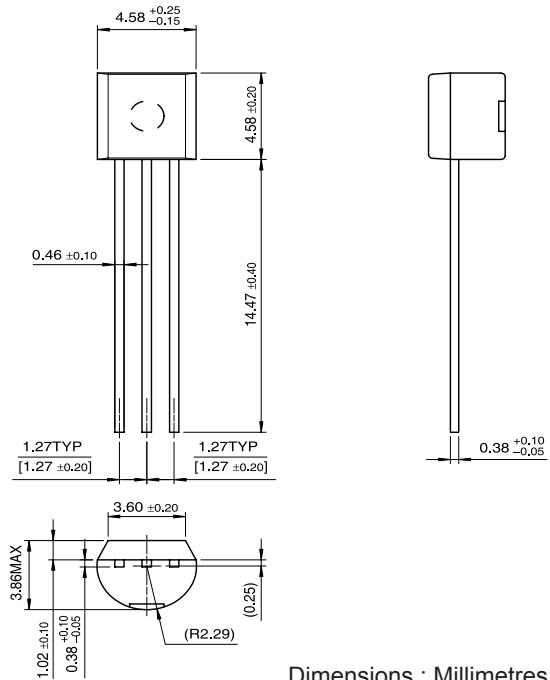
## Electrical Characteristics (Tc = 25°C unless specified otherwise)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
<b>Dynamic Characteristics</b>						
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA, f = 100MHz	150			MHz
Output Capacitance	C <sub>OB</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0, f = 1MHz			5	pF
Small Signal Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA, f = 1KHz	240		500	
Noise Figure	NF	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.2mA R <sub>S</sub> = 2KΩ, f = 1KHz, BW = 200Hz			10	dB

## Thermal Characteristics TA=25°C unless otherwise noted

Parameter	Symbol	Max.	Max.
Total Device Dissipation @TA=25°C Derate above 25°C	P <sub>D</sub>	350 2.8	mW mW/°C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	357	mW/°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	125	°C/W

TO-92



Dimensions : Millimetres

## Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC182B

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