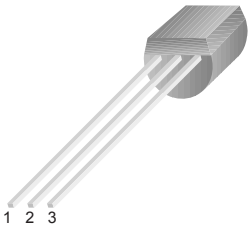
Bipolar Transistor



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:
1. Collector
2. Base
3. 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	mA
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
Off Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 2mA, I_B = 0	50			V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	60			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6			V
Collector Cut-off Current	I_{CBO}	V_{CB} = 50V, V_{BE} = 0			15	nA
Emitter-Base Leakage Current	I_{EBO}	V_{EB} = 4V, I_E = 0			15	nA
On Characteristics						
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 10μA V_{CE} = 5V, I_C = 100mA	40 80			
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 = 100mA, I_B = 5mA			1.2	V
Base-Emitter On Voltage	$V_{BE(ON)}$	V_{CE} = 5V, I_C = 2mA	0.55		0.7	V

Bipolar Transistor

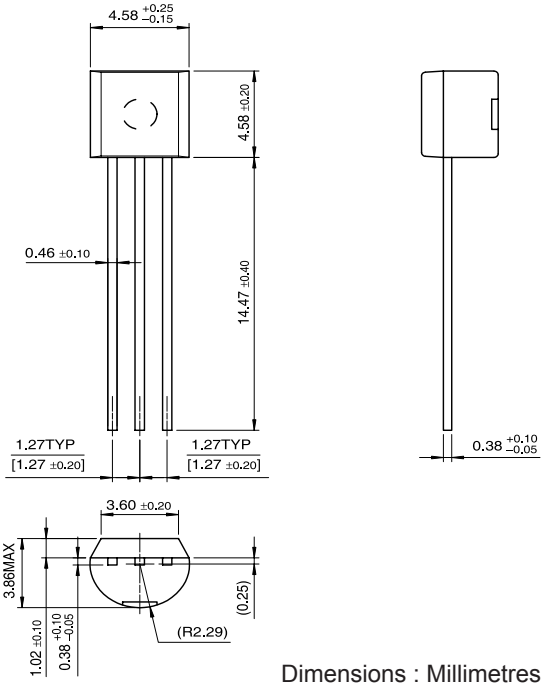
Electrical Characteristics (Tc = 25°C unless specified otherwise)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Dynamic Characteristics						
Current Gain Bandwidth Product	f_T	V_{CE} = 5V, I_C = 10mA, f = 100MHz	150			MHz
Output Capacitance	C_{ob}	V_{CE} = 10V, I_C = 0, f = 1MHz			5	pF
Small Signal Current Gain	h_{fe}	V_{CE} = 5V, I_C = 2mA, f = 1KHz	240		500	
Noise Figure	NF	V_{CE} = 5V, I_C = 0.2mA R_S = 2KΩ, f = 1KHz, BW = 200Hz			10	dB

Thermal Characteristics T_A=25°C unless otherwise noted

Parameter	Symbol	Max.	Max.
Total Device Dissipation @T_A=25°C Derate above 25°C	P_D	350 2.8	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	mW/°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	°C/W

TO-92



Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC182B