Department of Electrical & Electrical Engineering

BRAC University

Semester- Fall 2025

EEE205L

ELECTRONIC CIRCUITS I LABORATORY

Section: 01

Experiment:6 - BJT BIASING

Group Number: 1

Group Members:

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Submitted by :

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ID : 24121204

Submitted To : Aldrin Nippon Bobby

Aldrin Nippon Bobby

Objective:

To study the common emitter amplifier and measure its gain,

input impedance and output impedance.

Equipments:

1. Breadboard
2. Jumper wires
3. Multimeter
4. n-p-n Transistor (C828, BD135)
5. 100k Potentiometer
6. Resistors (470Ω, 560Ω, 10kΩ, 220kΩ)
7. DC Voltage Source

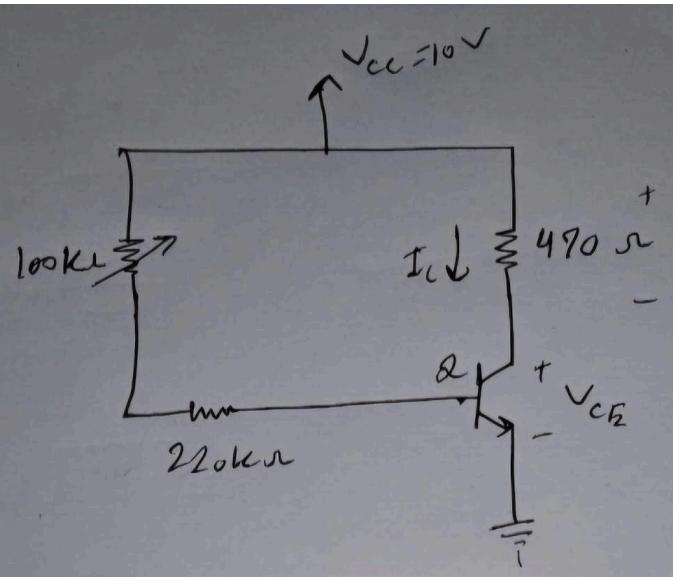


Fig: Fixed - bias.

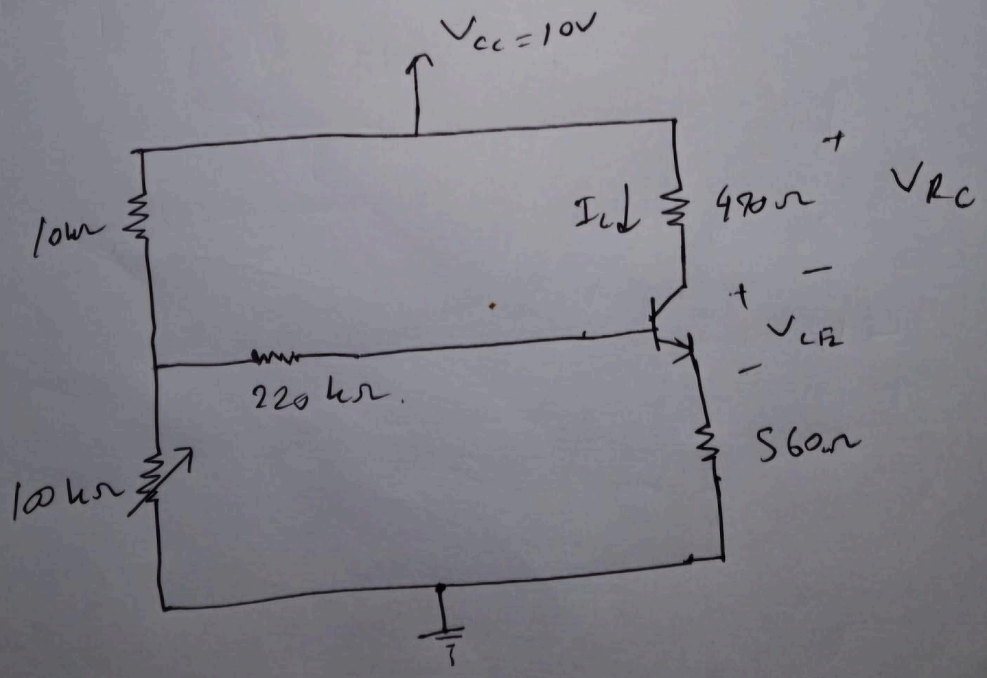


Fig: Self- bias

→ Fixed - Bias data

$R_3(\Omega)$	BJT	$V_{CE}(V)$	$V_{R_3}(V)$	$I_C = \frac{V_{R_3}}{R_3}$ (mA)	ΔV_{CE} (V)	ΔI (mA)
470	BD135	6.37	3.76	8	1.90	4.00
	C828	4.56	5.66	12.04		

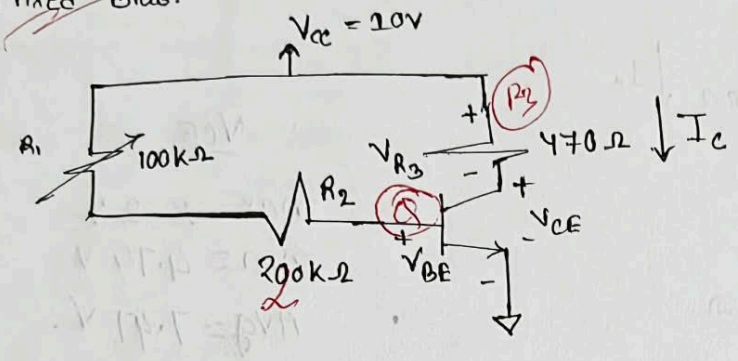
→ Self - Bias data

$R_4(\Omega)$	BJT	$V_{CE}(V)$	V_{R_4} (V)	$I_C = \frac{V_{R_4}}{R_4}$ (mA)	ΔV_{CE} (V)	ΔI_C (mA)
470	BD135	7.45	1.44	3.064	1.44	0.979
	C828	6.01	1.90	4.040		

Experiment 6 BJT Biasing.

Group: 01

Fixed Bias.



V_{CE}

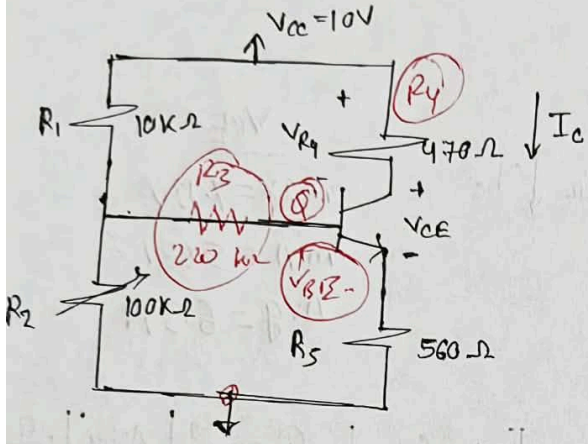
max = 7.11V

min = 5.63V

Avg = 6.37V

R_3 (Ω)	BJT.	V_{CE} (V)	V_{R_3} (V)	$I_C = \frac{V_{R_3}}{R_3}$ (mA)	ΔV_{CE} (V)	ΔI_C (mA)
470	BD135	6.37	3.76	8	1.9	4.04
	C828	4.56	5.66	12.04		

Self Bias



VCE

max = 10.2 V
min = 4.74 V
Avg = 7.47 V

R4 (Ω)	BJT	VCE (V)	VR4 (V)	$I_C = \frac{V_{R4}}{R4}$ (mA)	ΔVCE (V)	ΔIC (mA)
470Ω	BD135	7.45	1.44	3.064	1.44	0.979
	C828	6.01	1.9	4.04		

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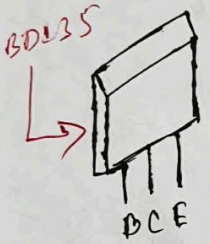
V_{BE} → 0.5V – 0.7V

2. Gradual change in V_{CE}.

⊞ Terminal Configuration.

PIN → BD135.



7/10

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