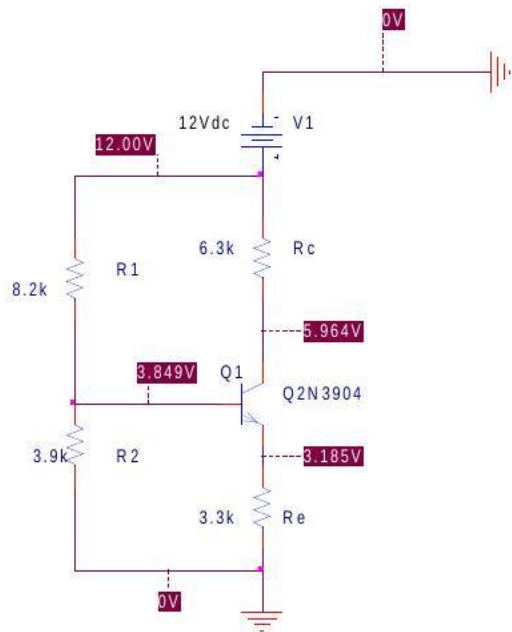


6.

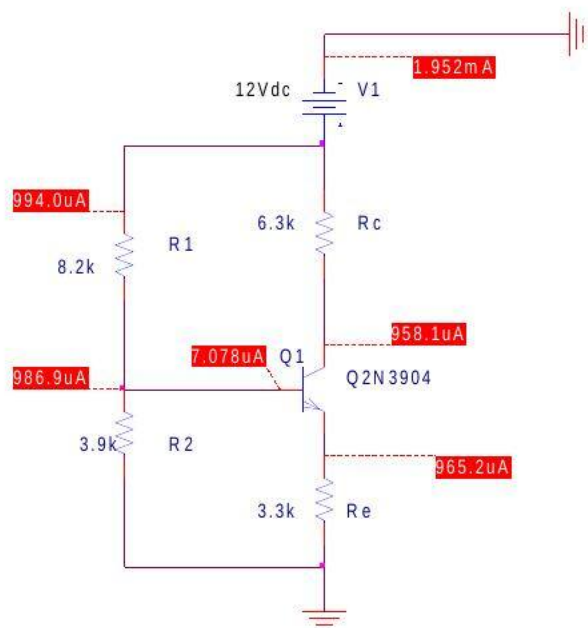
a. Bias Point Analysis

DC Voltages



$$V_{CE} = 5.964 - 3.185 = 2.78 \text{ V}$$

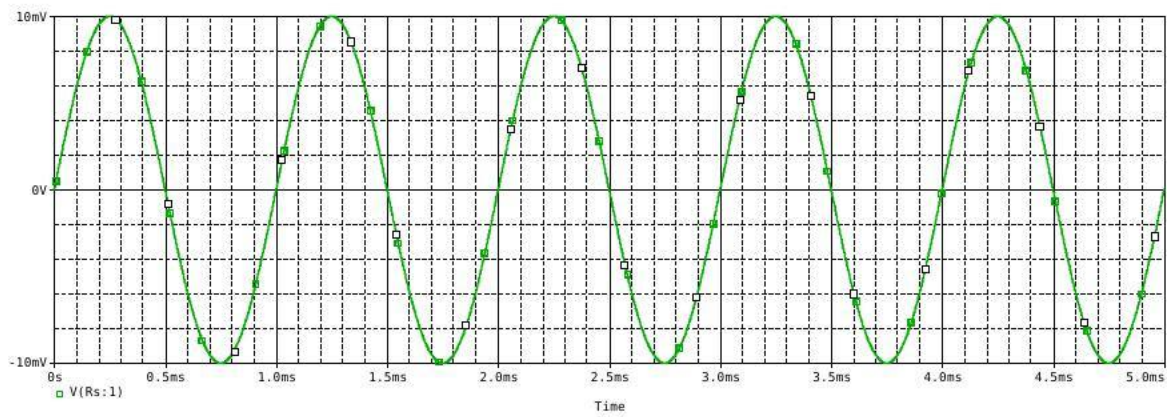
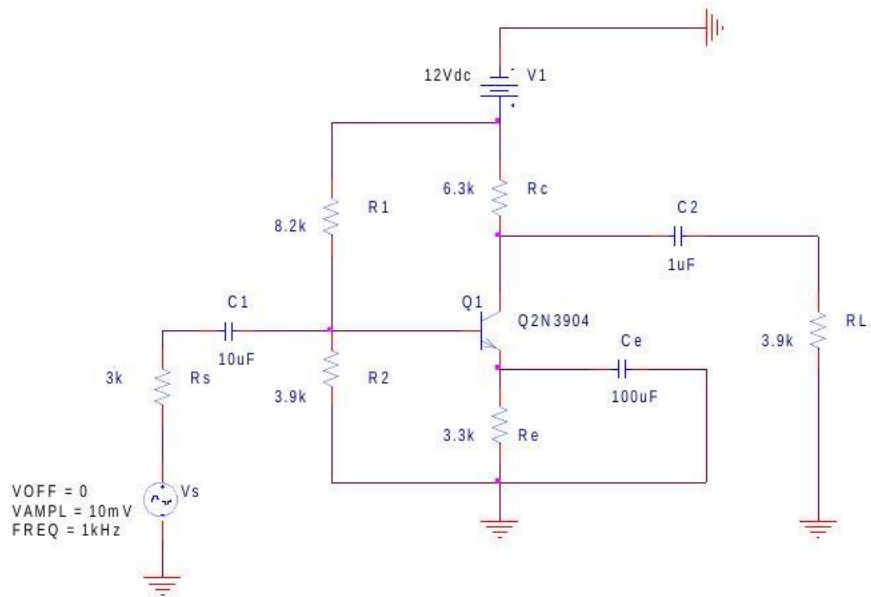
DC Akımlar



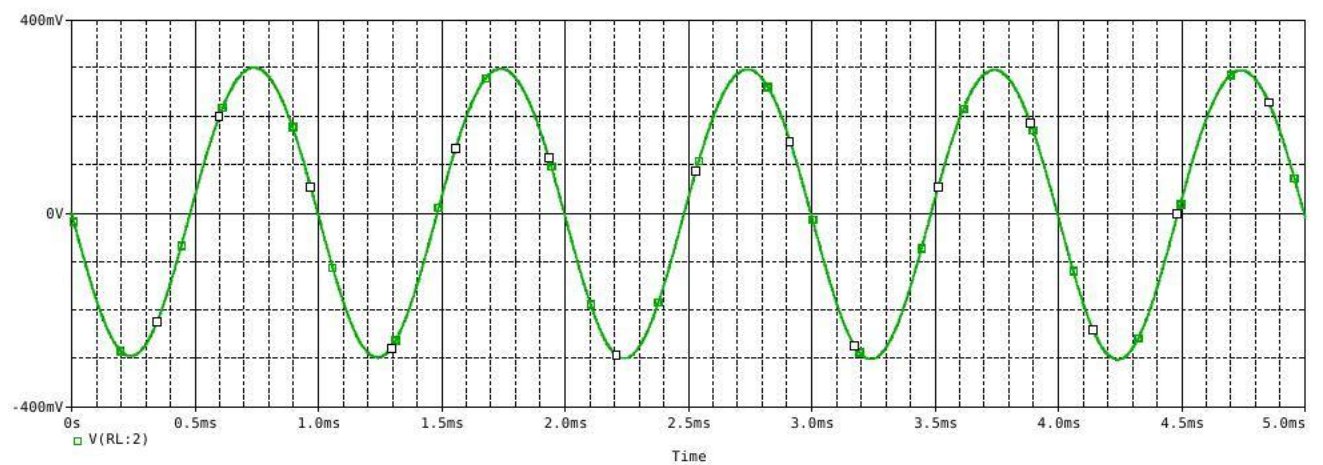
$$I_{CQ} = 958.1 \mu\text{A}$$

$$I_{BQ} = 7.078 \mu\text{A}$$

b.



$$V_{in} = 10 \text{ mV}_{\text{peak}}$$

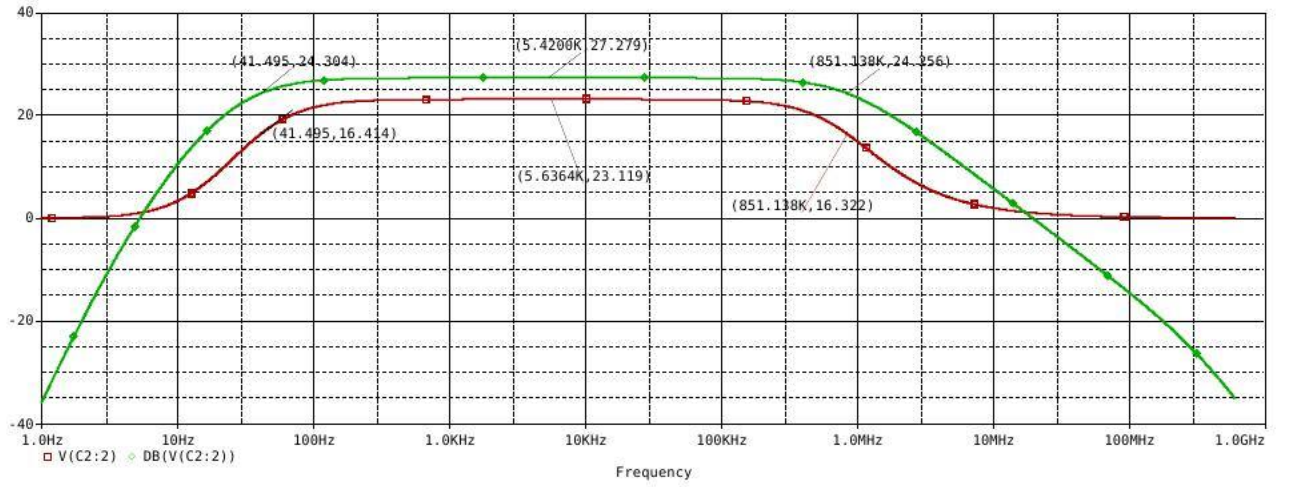


$$V_{out} = 289.2 \text{ mV}_{\text{peak}}$$

$$A_v = - V_{out} / V_{in} = -289.2 \text{ mV} / 10 \text{ mV}$$

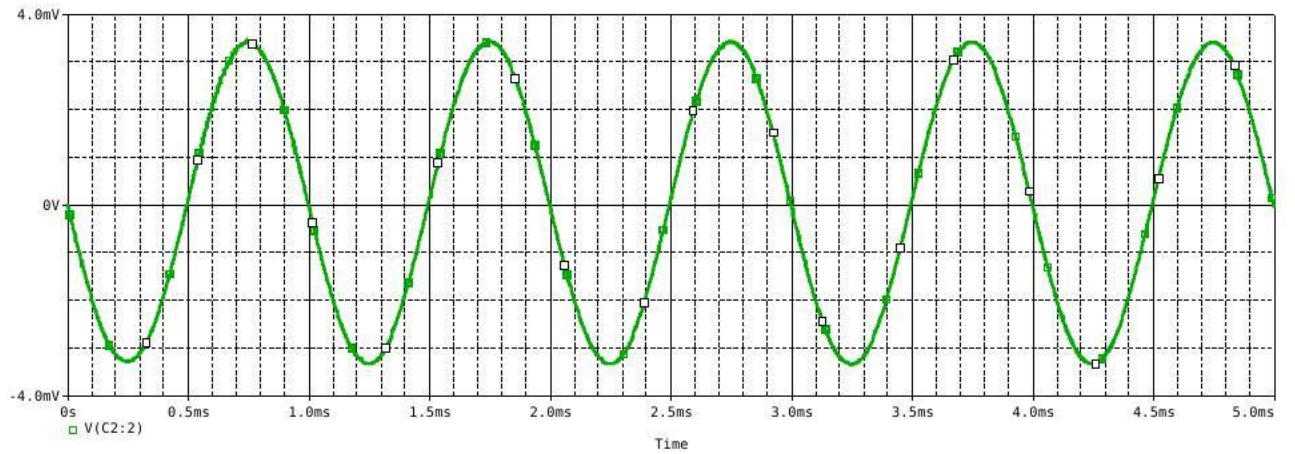
$$A_v = -28.9$$

c.



$$ACMAG = 1V \text{ ve } 0.707A_{v\text{-mid}}$$

d. C_E (bypass capacitor) kapasitörünü kaldırırsak ;



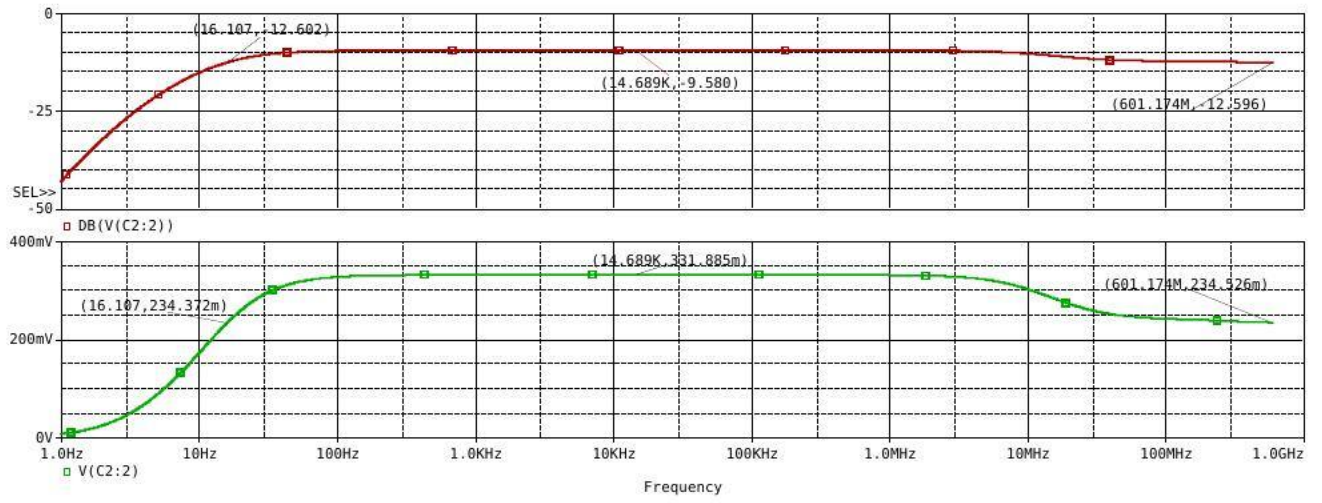
$$V_{out} = 3.27 \text{ mV}_{peak}$$

$$A_v = -3.27 \text{ mV} / 10 \text{ mV}$$

$$A_v = -0.32$$

Görüldüğü gibi bypass kapasitansını kaldırıncı , voltaj kazancında kayda değer bir azalma meydana gelmiştir. Aynı zamanda alttaki grafikte de görüldüğü gibi yüksek ve alçak kesim

frekanslarıda değişmiştir. Bu sonuç doğaldır.Çünkü frekans değeri devredeki kapasitör sayısına bağlıdır.



e. Calculated with hands ;

I_{BQ}	9.29 μ A
I_{CQ}	0.929 mA
V_{CEQ}	3.06 V
A_{mid}	-27.26
f_L	60.2 Hz
f_H	694 kHz

Simulation results (C_E in the circuit)

I_{BQ}	7.078 μ A
I_{CQ}	958.1 μ A
V_{CEQ}	2.78 V
A_{mid}	- 28.9
f_L	41.5 Hz
f_H	851.2 kHz

Without C_E

A_{mid}	- 0.32
f_L	16.1 Hz
f_H	601.17 kHz