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EXPERIMENT: 5.1

EXAMINATION OF EMITTER GROUND AMPLIFIER

EXPERIMENTAL PROCEDURE:

Plug the Y-0016/009 module. Make the circuit connections as in figure 14.5

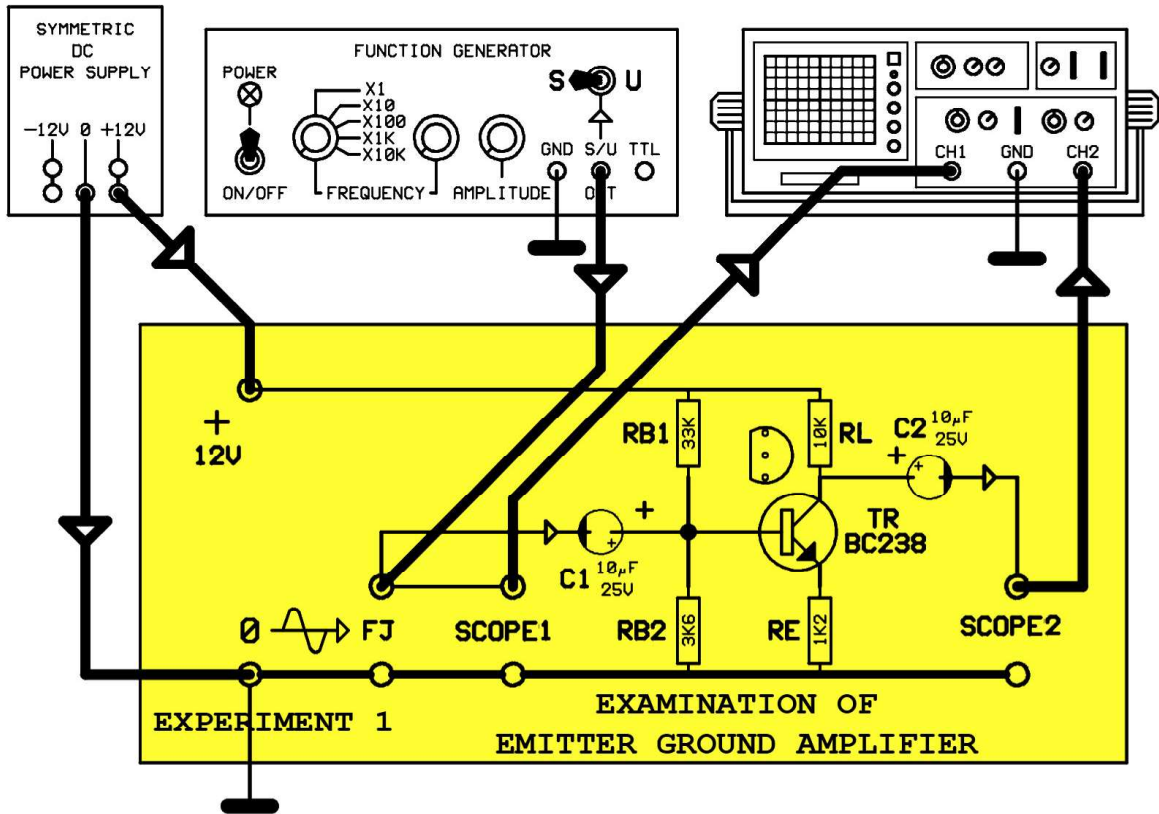


Figure 14.5

- 1- Adjust the amplitude potentiometer of function generator to zero. (**mid-terminal will be on left**).
- 2- Adjust the output waveform to sine, frequency to 1KHz and amplitude to peak to peak $V_{ipp}=100mV$
- 3- See the input and output signals at oscilloscope. What is the phase relation between input and output signals?

4- Measure the output signal amplitude (**V_{opp}**). Calculate the circuit gain (**A**).

$$A = \frac{V_{O_{PP}}}{V_{i_{PP}}} =$$

5- Write the properties of emitter ground amplifier.

- a- *Input impedance*
- b- *Output impedance*
- c- *Voltage gain*
- d- *Current gain*
- e- *Power gain*

EXPERIMENT: 5.2

EXAMINATION OF BASE GROUND AMPLIFIER

EXPERIMENTAL PROCEDURE:

Plug the Y-0016/009 module. Make the circuit connections as in figure 14.7

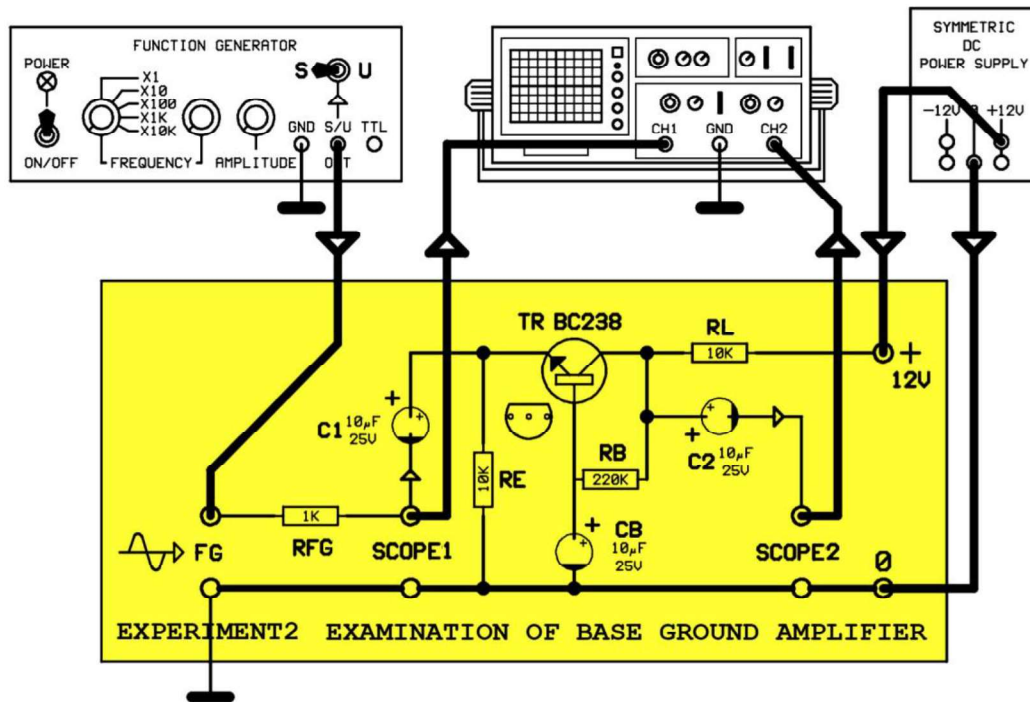


Figure 14.7

- 1- Adjust the amplitude potentiometer of function generator to zero. (**mid-terminal will be on left**). RFG resistor is used to prevent the function generator's short-circuiting because input impedance of base ground amplifier is too low.
- 2- Adjust the output signal to sine wave at point scopel1, frequency to 1KHz and amplitude to peak to peak **V_{ipp}**=10mV. Apply power to the circuit.
- 3- See the input and output signals displayed by oscilloscope. What is the phase relation between input and output signals?

4- Measure the output signal amplitude (**V_{opp}**). Calculate the circuit gain (**A**).

Peak to peak output signal amplitude is V_{opp}

Gain is the ratio of output voltage to input voltage.

Gain:

$$A = \frac{V_{OPP}}{V_{IPP}} =$$

5-Write the properties of base ground amplifier.

a- Input impedance

b- Output impedance

c- Voltage gain

d- Current gain

e- Power gain

EXPERIMENT: 5.3

EXAMINATION OF COLLECTOR GROUND AMPLIFIER

EXPERIMENTAL PROCEDURE:

Plug Y-0016/009 module. Make the circuit connections as in figure 14.9

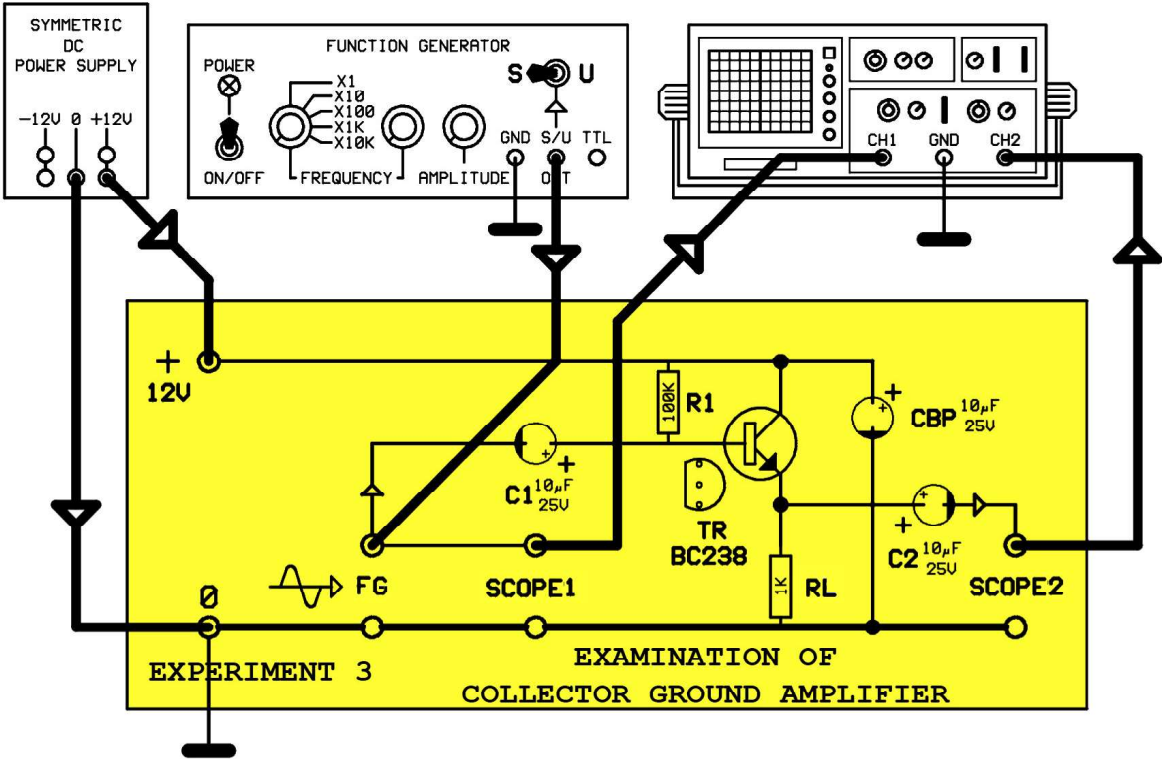


Figure 14.9

- 1- Adjust the amplitude potentiometer of function generator to zero. (**mid-terminal will be on left**). Apply power to the circuit.
- 2- Adjust the output signal to sine wave, frequency to 1KHz and amplitude to peak to peak $V_{ipp}=1V$.
- 3- See the input and output signals displayed by oscilloscope. What is the phase relation between input and output signals

4- Measure the output signal amplitude (**V_{opp}**). Calculate the circuit gain (**A**).

Output signal amplitude is a little smaller than the input. Peak to peak output signal is V_{opp}.

Gain is the ratio of output voltage to input voltage.

Gain:

$$A = \frac{V_{oPP}}{V_{iPP}} =$$

5-Write the properties of collector ground amplifier.

a- Input impedance

b- Output impedance

c- Voltage gain

d- Current gain

e- Power gain