Brac University

Department of Electrical & Electronic Engineering

Fall2025

Course Number : EEE205L

Section :01

Group No :01

Lab Report

Experiment no: 07

Name of the experiment:

Implementation of Common Emitter BJT Amplifier Circuits

Prepared by:

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Objective:

The main objective of this experiment is to study the operation of a Common Emitter (CE) BJT amplifier. The voltage gain, input impedance, output impedance, and phase relationship between input and output signals are measured and analyzed.

Equipments:

1. NPN Transistor (Q2N760)
2. Resistors: 1 kΩ, 2.2 kΩ, 10 kΩ, 33 kΩ, 100 kΩ
3. Potentiometer: 100 kΩ
4. Capacitors: 1 µF, 10 µF, 47 µF
5. Use Pspice app for simulation

Circuit Diagram

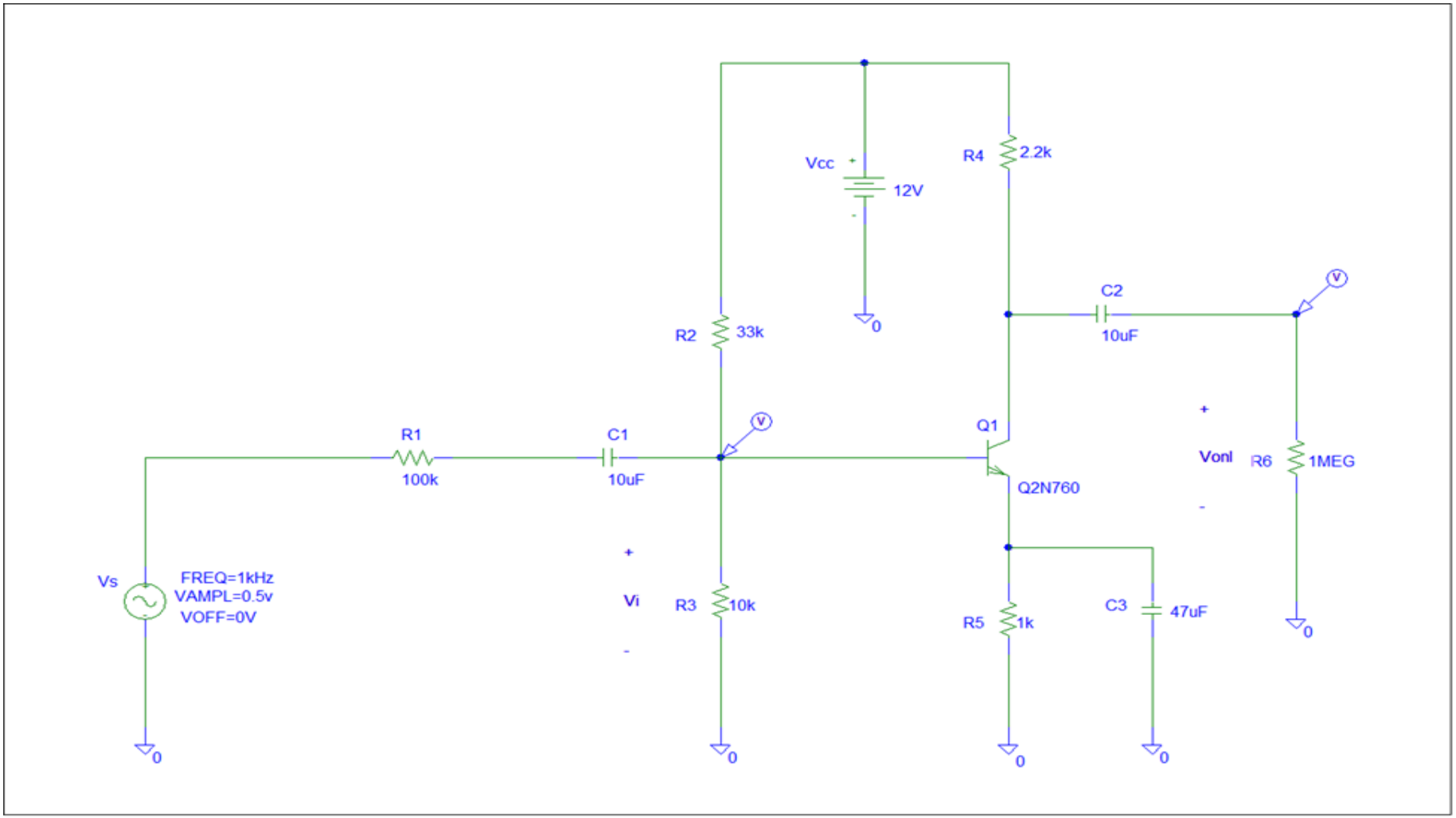

Figure:- Common Emitter BJT amplifier implemented.

Transient Parameter

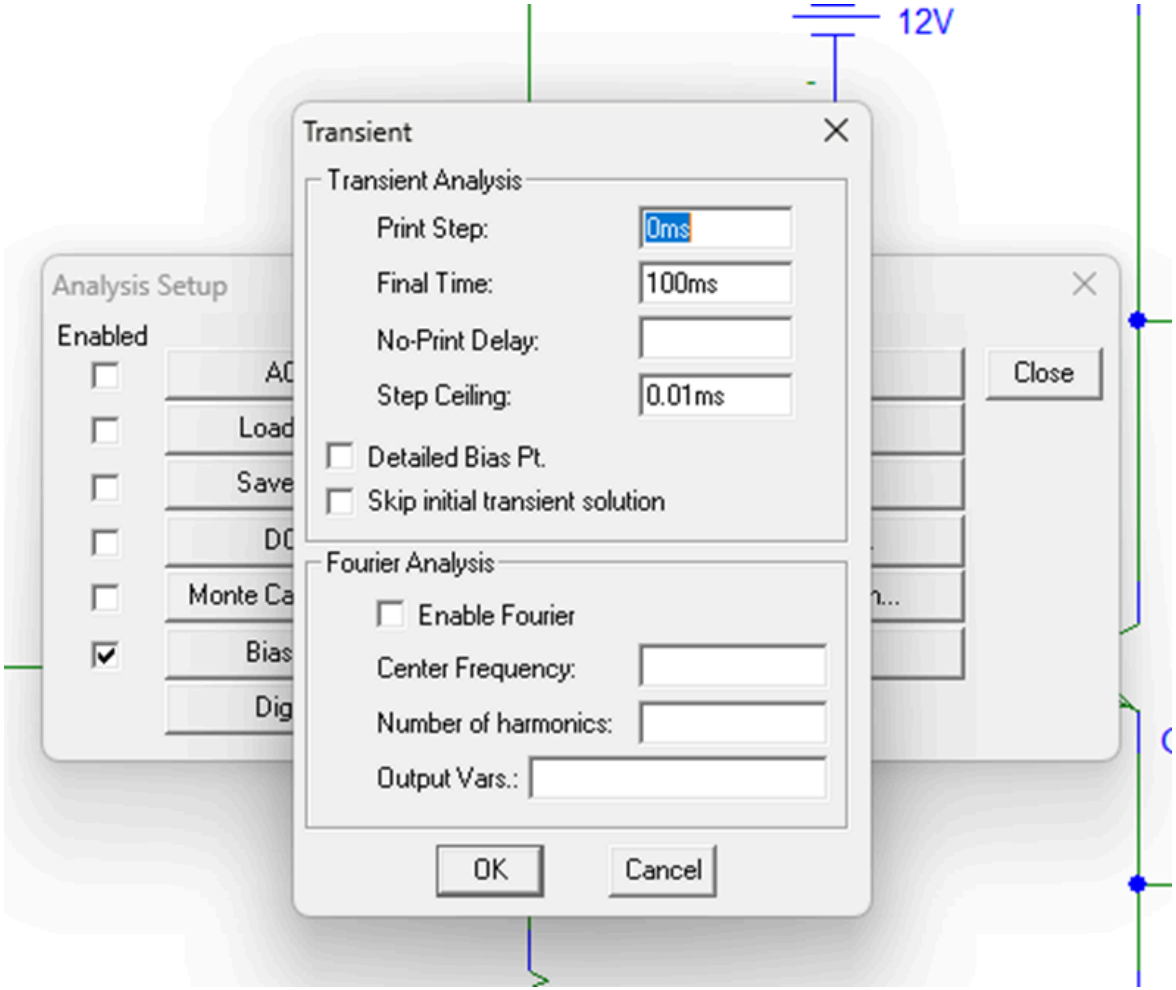

Figure:- Transient analysis parameter settings used to define simulation time and step size for observing the CE amplifier response.

V_i & V_o Graph

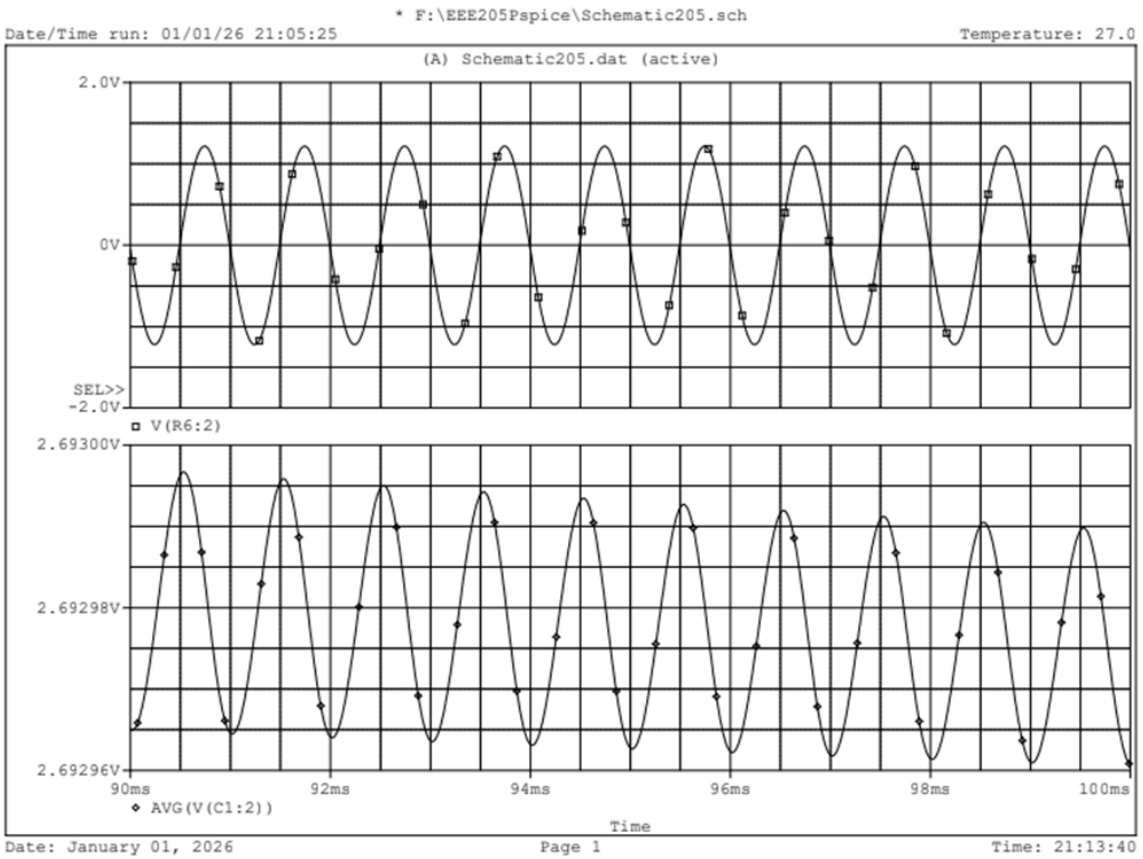

Figure: -Input and output voltage waveforms

Circuit Diagram

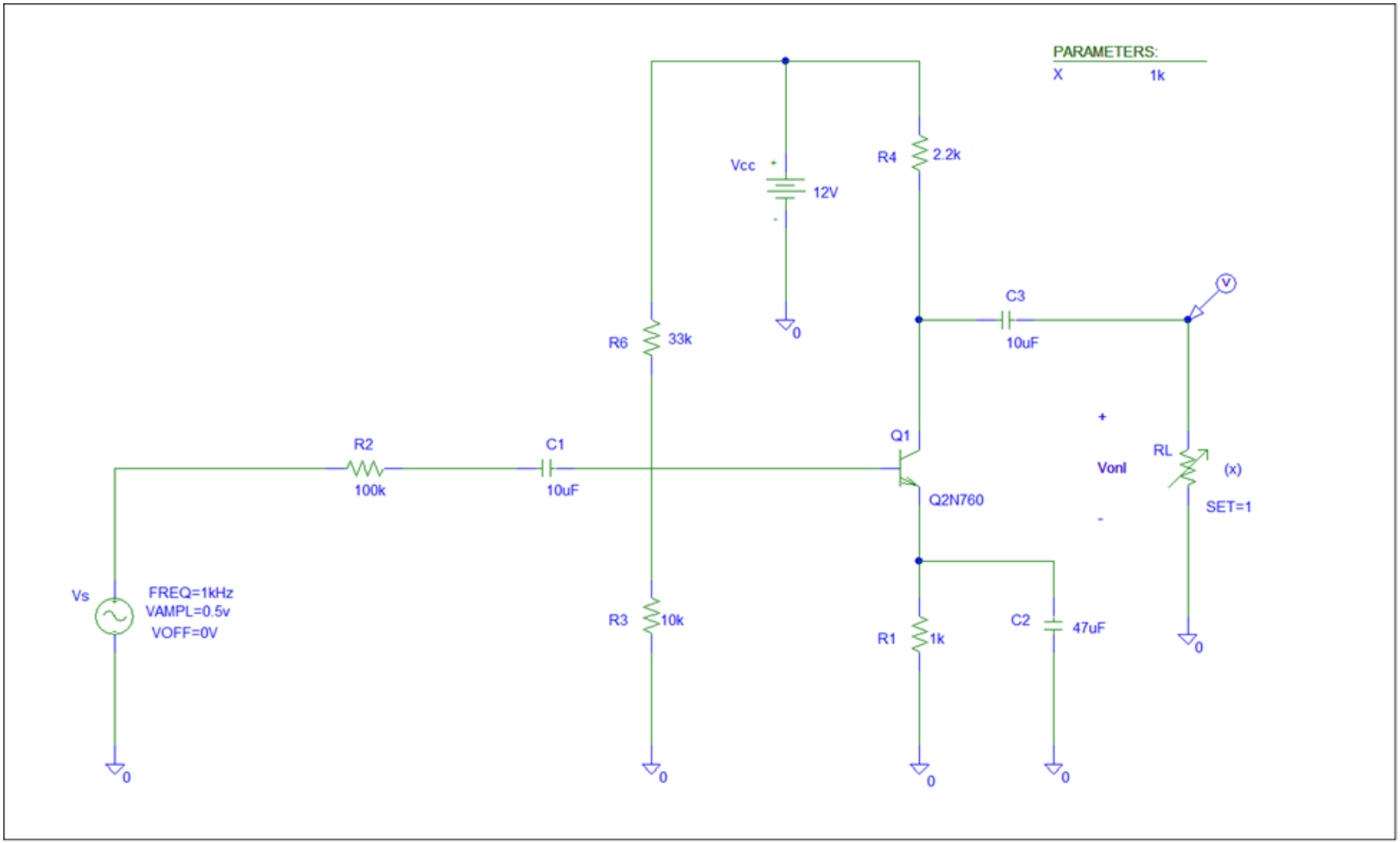

Figure: - CE amplifier circuit with output potentiometer for output impedance measurement

Transient Parameter

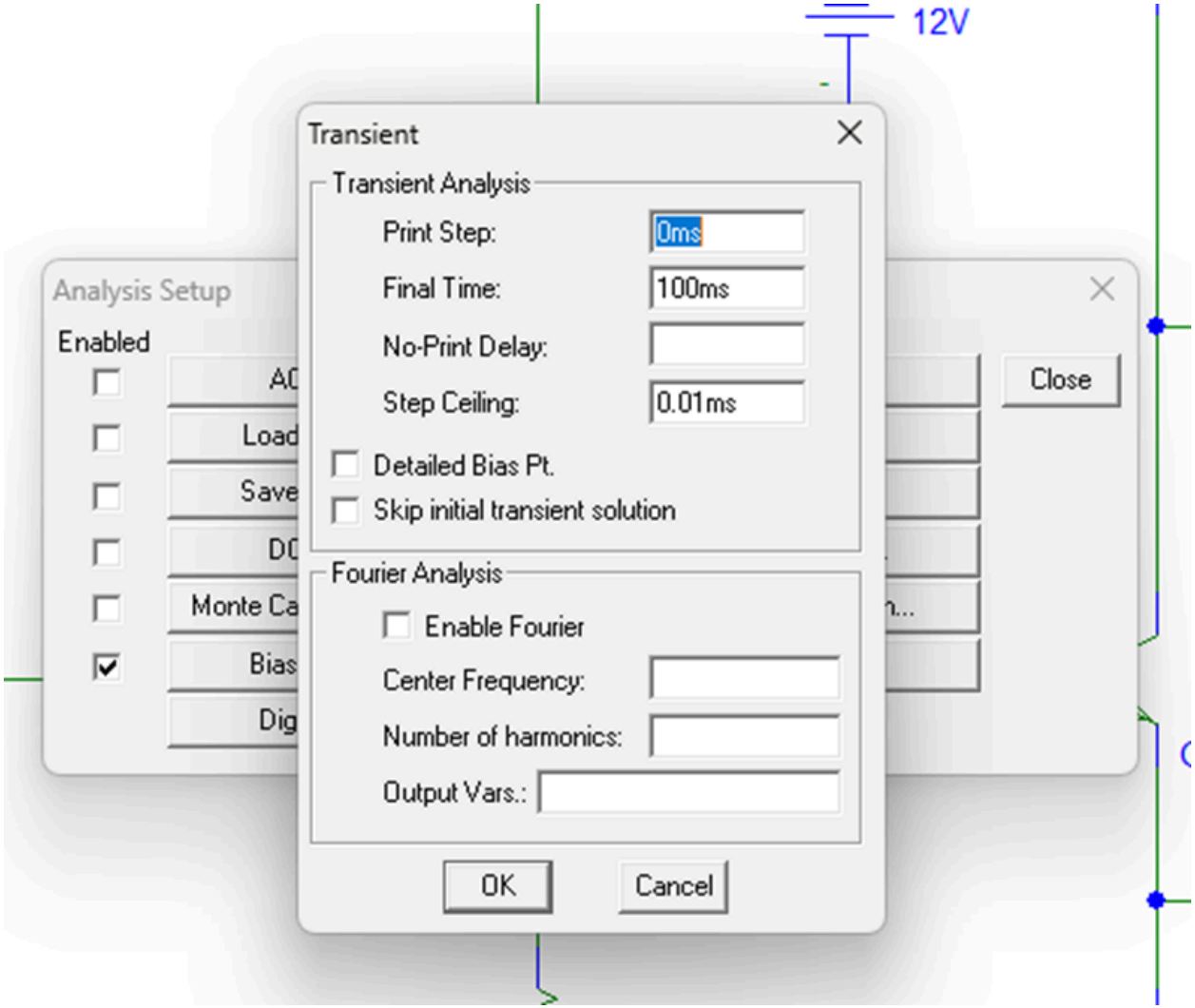

Figure: - Transient analysis parameter settings used to define simulation time and step size for observing the CE amplifier response.

Parametric parameter

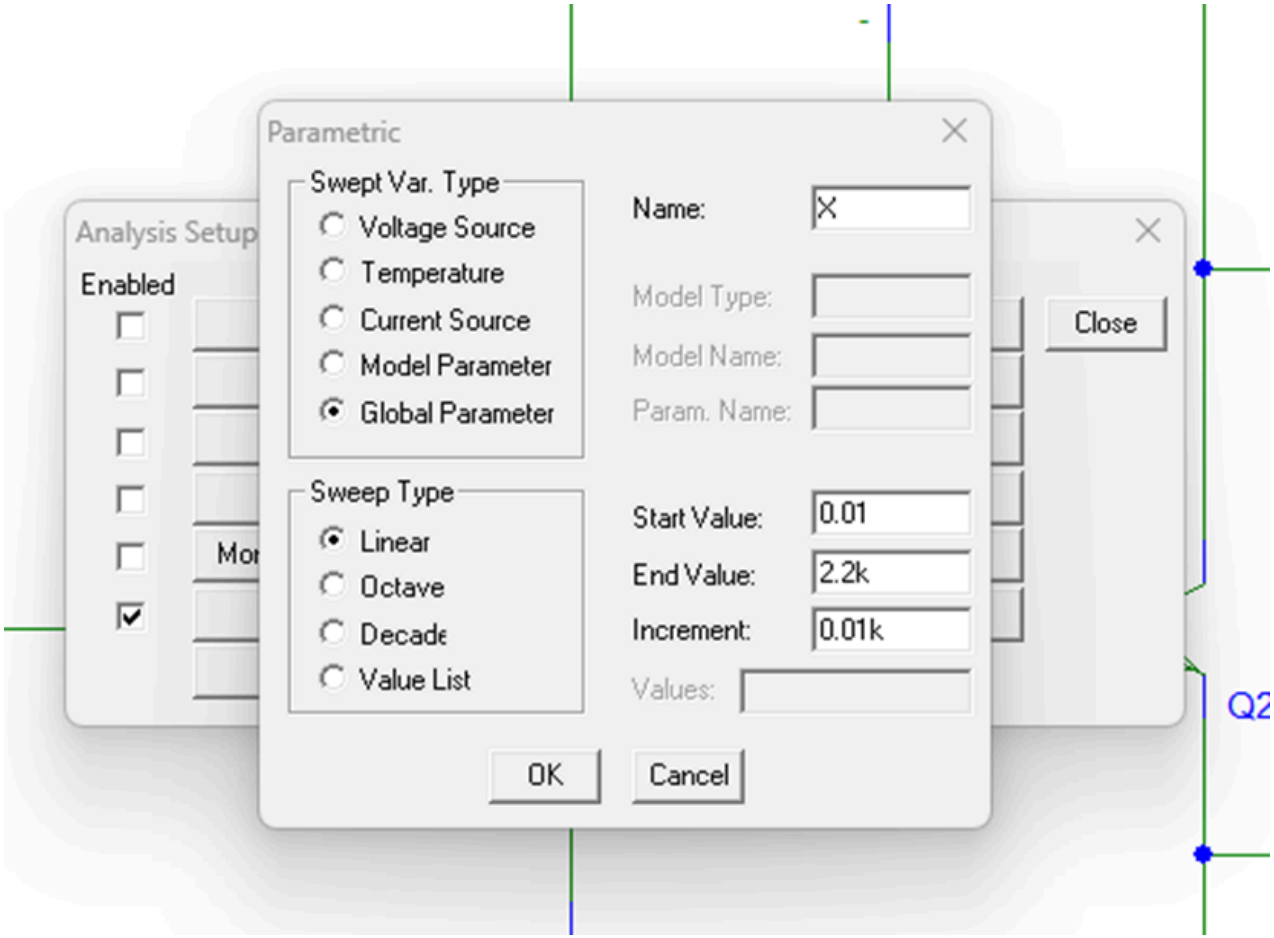

Figure: -Parametric analysis settings used to observe the effect of parameter variation on CE amplifier performance.

Axis Setting

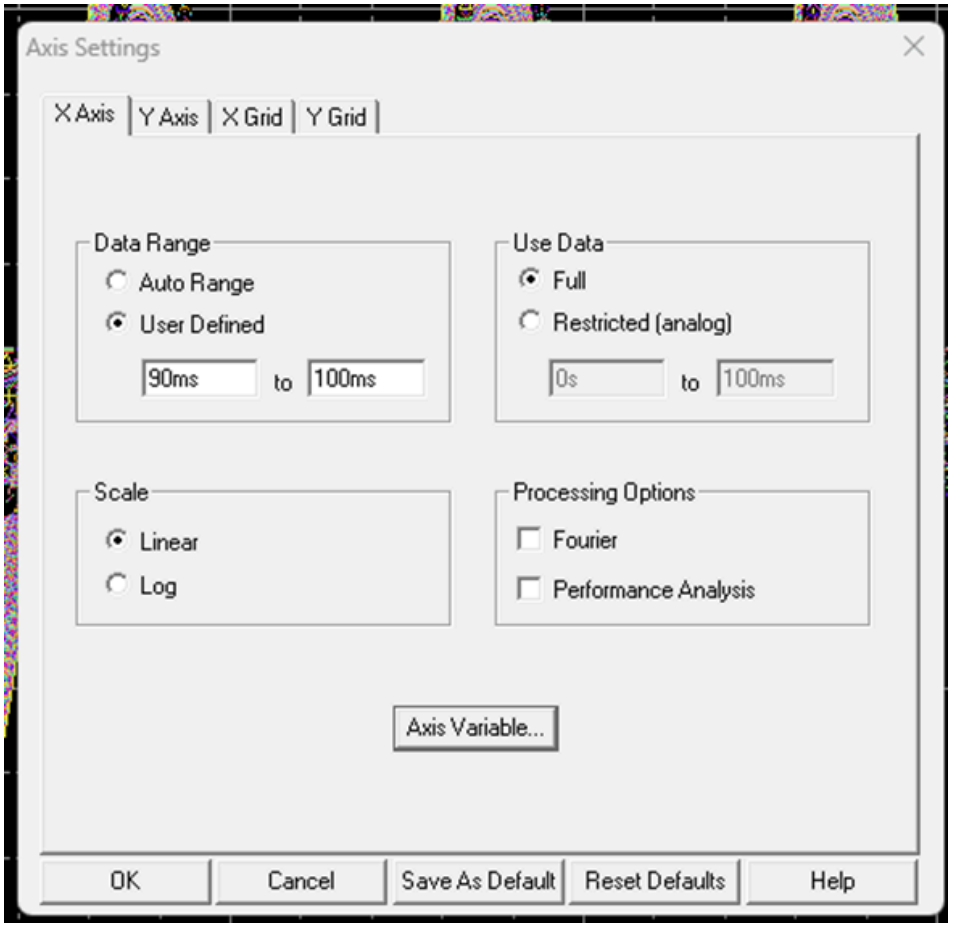

Figure: - To define the time range and scale for proper visualization of simulation waveforms.

Graph

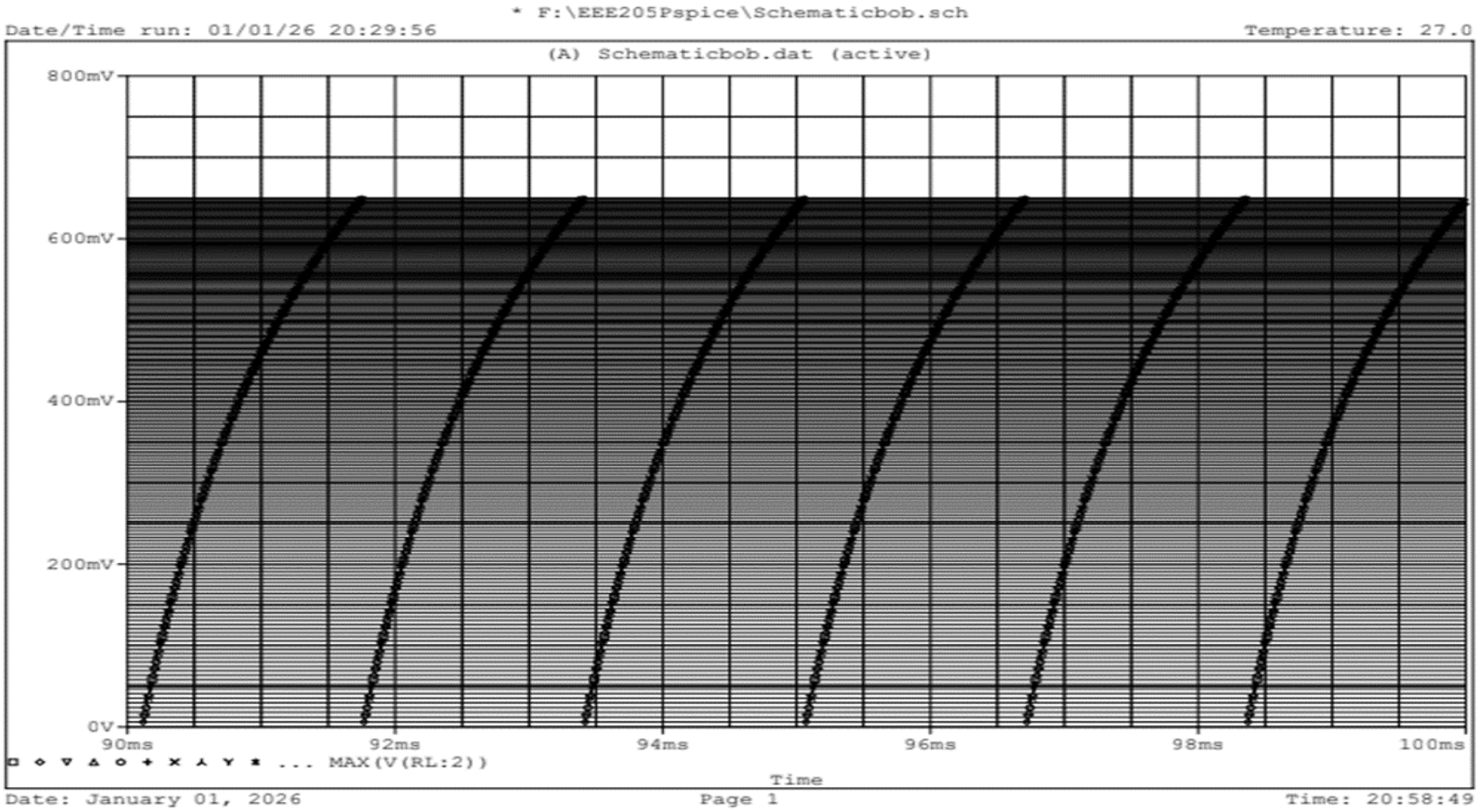

Figure: - Voltage gain characteristics of the CE amplifier.

R_o Graph

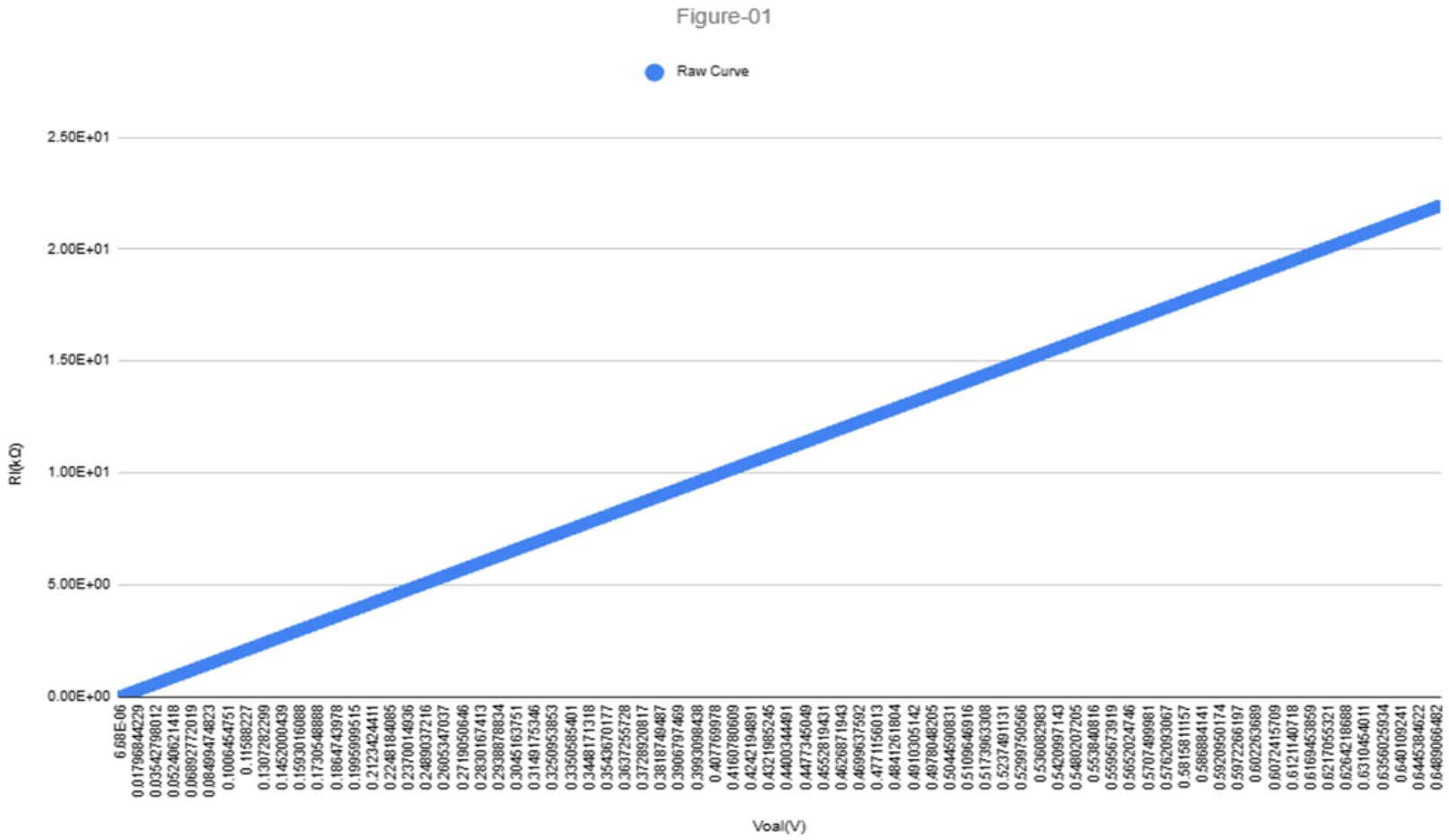

Figure: - Phase relationship graph between input and output signals