

EE4981 - Lab W7: Basic Amplifiers

1 week total

Goals:

1. Create some amplifier designs
2. Properly bias transistors
3. Calculate and simulate gain

Assignment Description:

Overview:

Develop 3 amplifier designs

Part 1: Design and simulate a CS amplifier stage with resistive load

Attempt to get a gain of 2

Part 2: Design and simulate a CS amplifier with source degeneration

Attempt to get a gain of 2

Part 3: Design and simulate a simple differential pair with resistive loads and single transistor current Source

Attempt to get a differential gain of 4

Deliverables:

Design equations

Schematics

Simulation results (Transient with small signals)

Due: Lab week 8