ENGR 305 Lab 9: Amplifier Schematics

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1 Part 1: LTspice Simulation Schematic

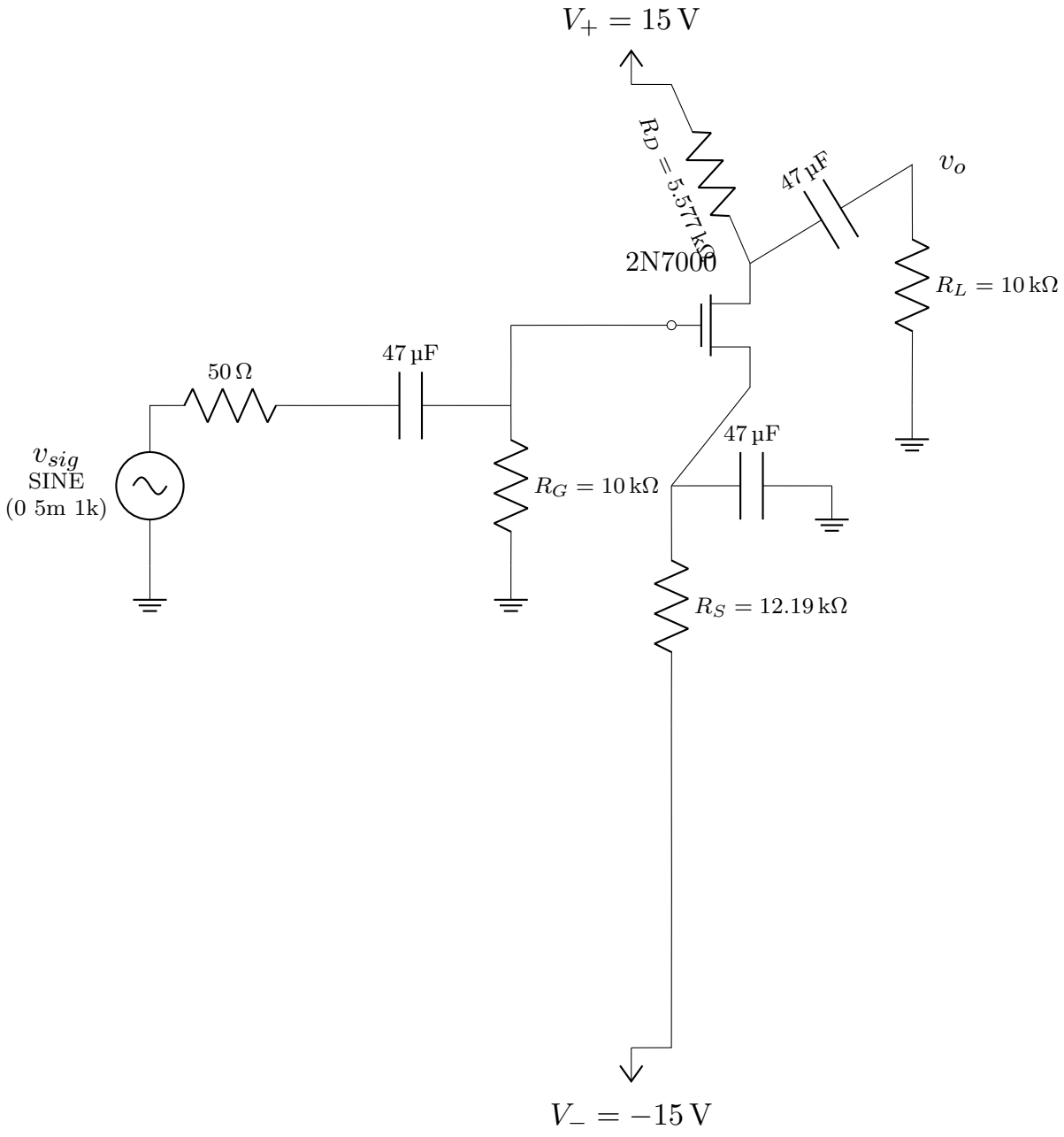

Figure 1: Schematic for LTspice simulation. This circuit includes the signal source v_{sig} and its internal resistance R_{sig}. It uses the exact calculated resistor values for R_D and R_S to verify the hand calculations.

2 Part 2: Physical Build Schematic

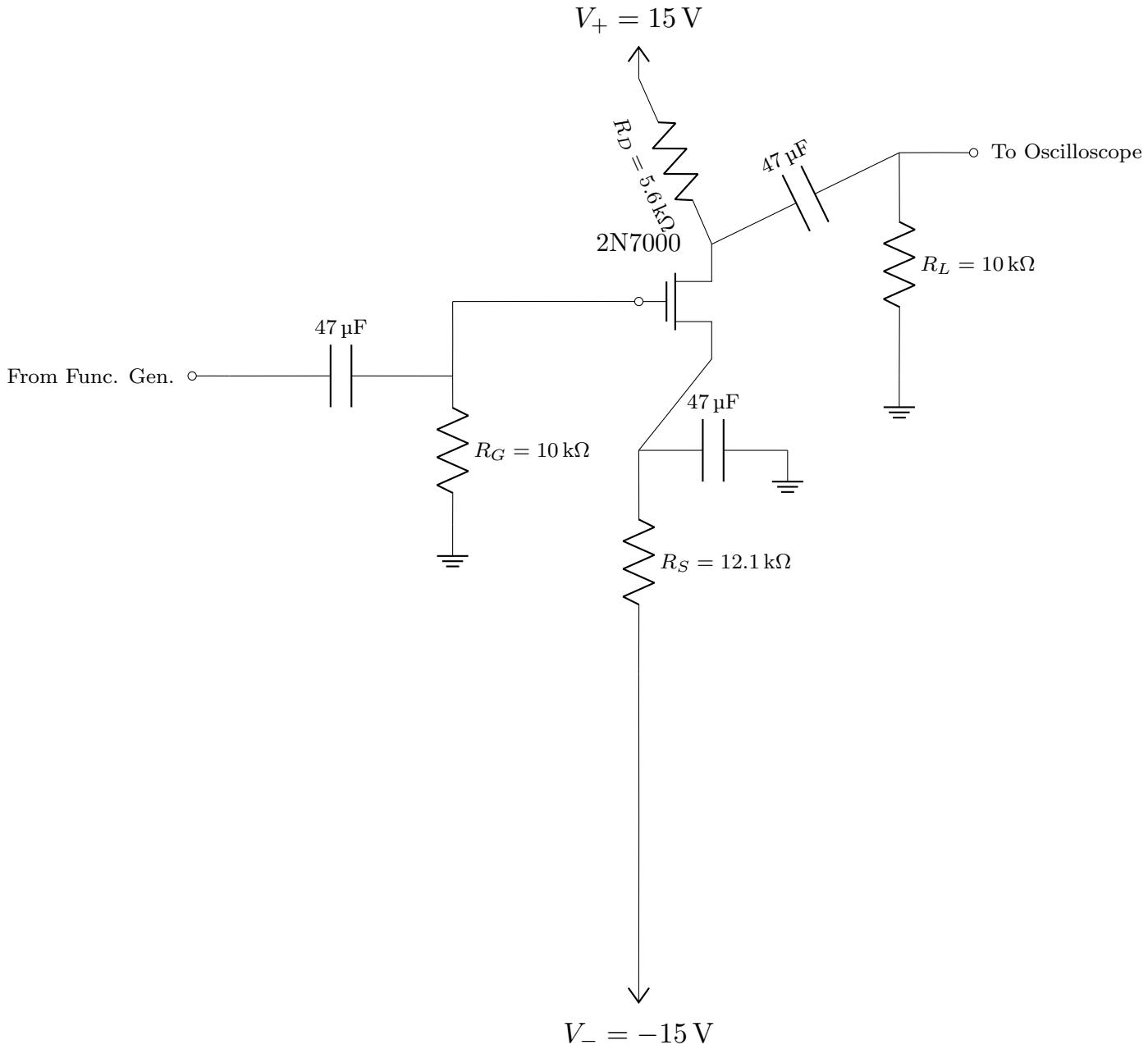

Figure 2: Schematic for physical breadboard implementation. R_{sig} is not included as it is internal to the function generator. Standard resistor values (5.6kΩ, 12.1kΩ) are used for R_D and R_S.

3 AC Small-Signal Model Schematics

These diagrams show the equivalent circuit used for AC analysis, after all DC sources are grounded and all capacitors are treated as short circuits.

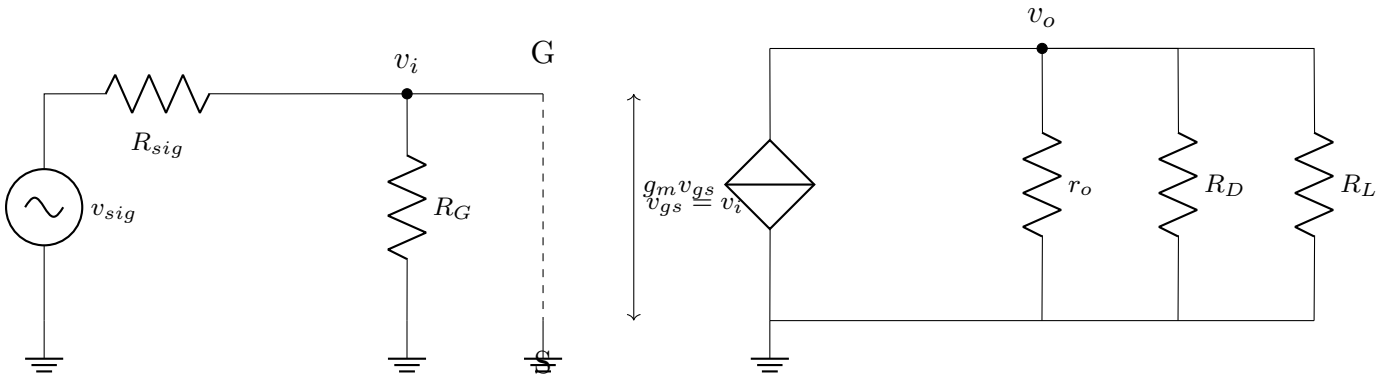

Figure 3: AC Small-Signal Model (Hybrid-π Model) showing all parallel output resistances.

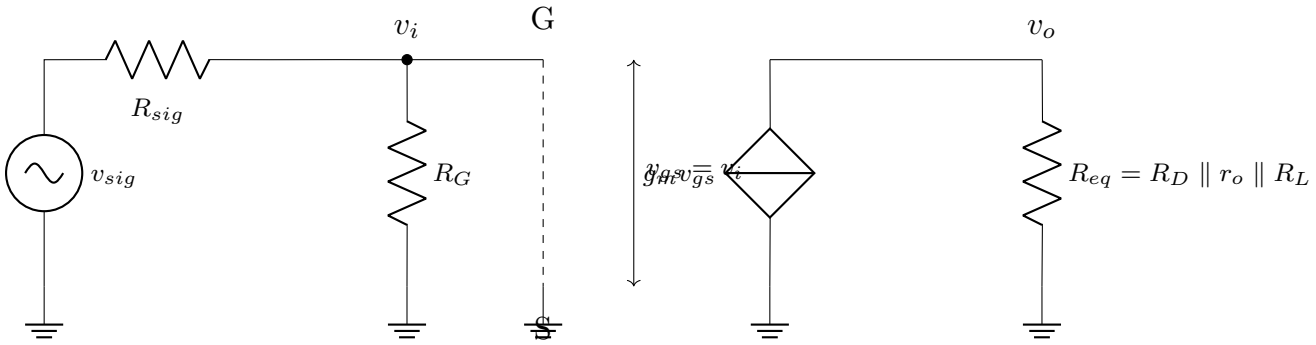

Figure 4: Simplified AC Small-Signal Model, with all output resistances combined into R_{eq}.