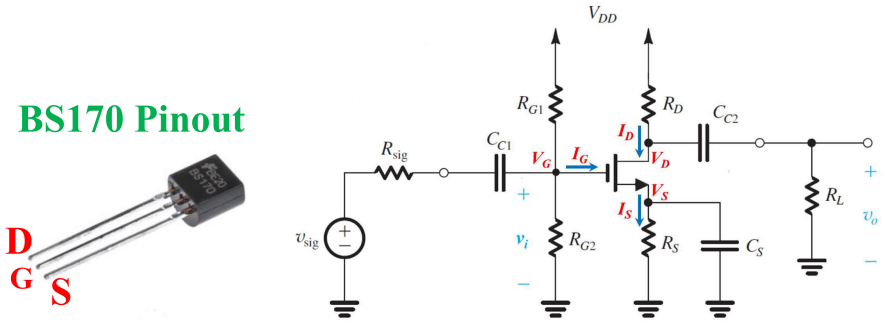
Frequency Response Prelab

梁程捷(B11901136)，吴奕娃(B11901080)

1 Fundamental Frequency Response

Plot the magnitude bode diagram of $\left|\frac{v_o}{v_{sig}}\right|$ **WITH** and **WITHOUT** C_S, respectively.
In each case, indicate the 3-dB frequencies f_L and f_H, and estimate the bandwidth BW=f_H-f_L.

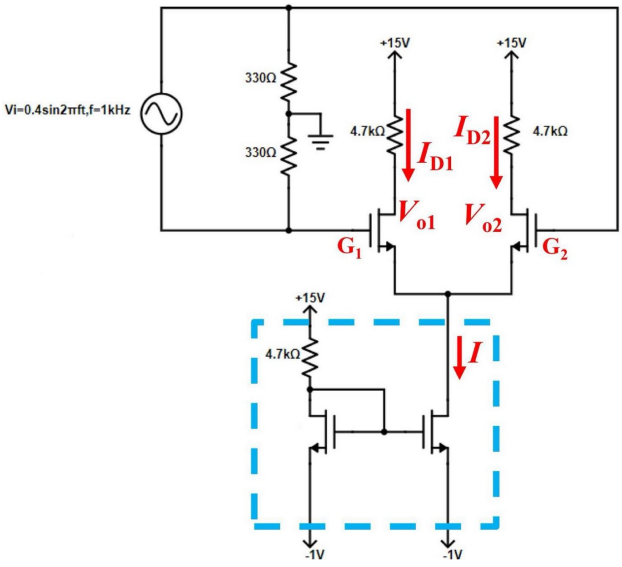


(a) BS170 pinout (b) CS-Amplifier circuit

FET model: BS170
Voltage source: $V_{DD} = +15$ V; $v_{sig} = 0.2\sin(2\pi ft)$, $f = 200$ Hz $\sim$ 500 kHz
Resistors: $R_{G1} = R_{G2} = 1$ MΩ; $R_D = R_S = R_L = 10$ kΩ; $R_{sig} = 100$ kΩ
Capacitors: $C_{C2} = C_S = 0.1$ μF (104); $C_{C1} = 0.01$ μF (103)

2 The Differential Amplifier with Current-Source Load

Plot the magnitude bode diagram of A_d. Indicate A_M and f_3dB.



(c) Differential Amplifier circuit