

ECE 523/421 – Analog Electronics

Lecture 21: Frequency Response: More Examples

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Review of Last Lecture

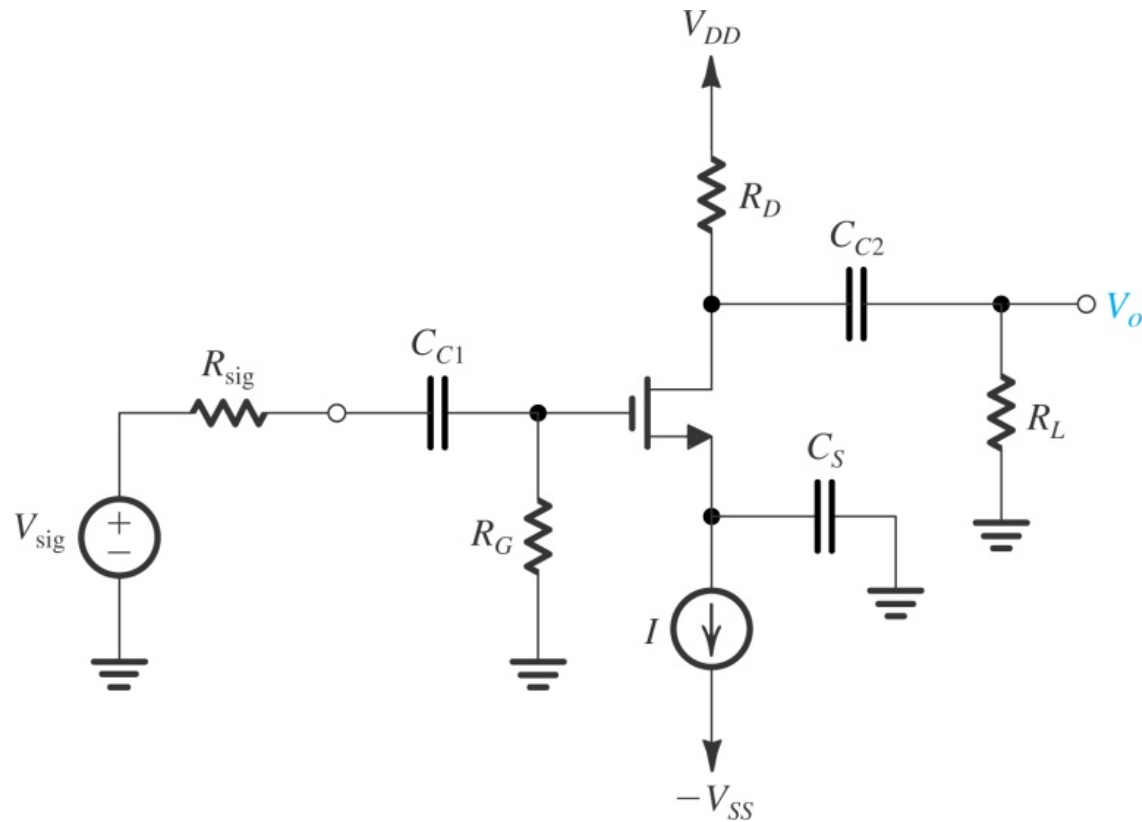
- ☐ High frequency analysis of CG Circuit
- ☐ High frequency analysis of MOS Cascode Circuit
- ☐ High frequency analysis of BJT Cascode Circuit

Today's Lecture

- ☐ Numerical example of low frequency analysis
- ☐ High frequency analysis of CC-CE wideband amplifier
- ☐ High frequency analysis of CMOS Op Amp

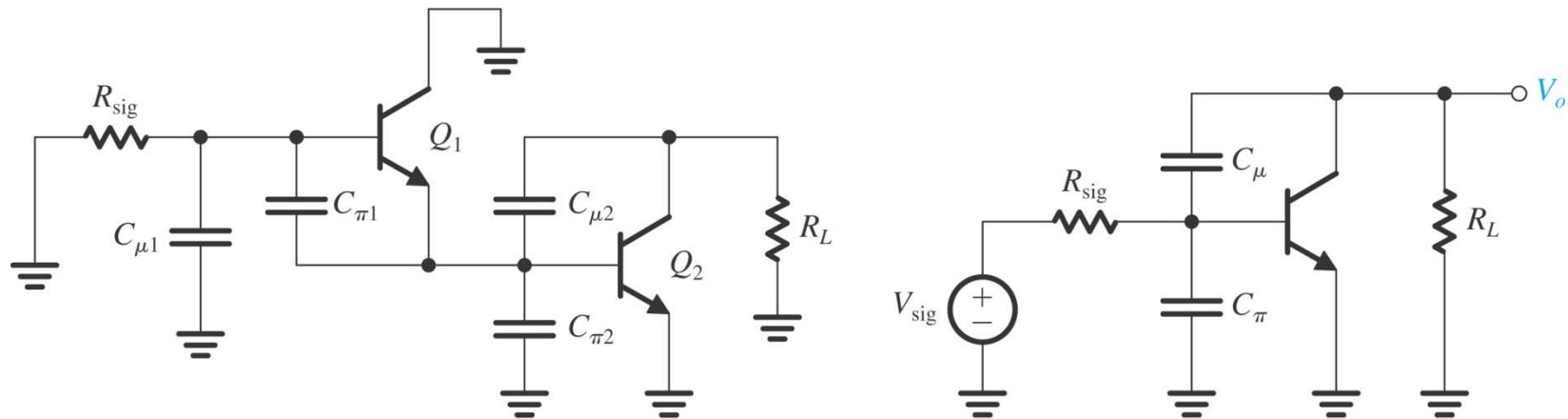
Example 1: Low Frequency Analysis

Find C_{C1} , C_{C2} , and C_S to achieve $f_L=100\text{Hz}$. Assume that $R_G=4.7\text{M}\Omega$, $R_D=R_L=15\text{K}\Omega$, $R_{\text{sig}}=100\text{K}\Omega$, $g_m=1\text{mA/V}$. Assuming large r_o



Example 2: Wideband CC-CS Amplifier

Compare f_H and A_v in the following two circuits. Assume that $I_1=I_2=1\text{mA}$, $\beta=100$, $f_T=400\text{MHz}$, $C_\mu=2\text{pF}$, $R_{\text{sig}}=R_L=4\text{k}\Omega$, neglect r_o and r_x .



High Frequency Analysis of CMOS OpAmp

