

# CMOS Operational Amplifier Prelab

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## CMOS Operational Amplifier Small Signal Analysis

Use three CD4007 ICs to construct the circuit in Figure (a) or Figure (b), and follow the steps below:

1. Record the input( $V_i$ ) and output( $V_o$ ) waveform in Y-t mode for  $f=1\text{kHz}$ .
2. Plot the magnitude bode diagram of  $V_o/V_i$  for  $f=500\text{kHz}$  to  $1\text{MHz}$ .
3. Indicate the 3-dB frequency and the bandwidth.

**note: For Each CD4007 IC, supply voltage VSS = -8V in pin 7 and VDD = +8V in pin 14.**

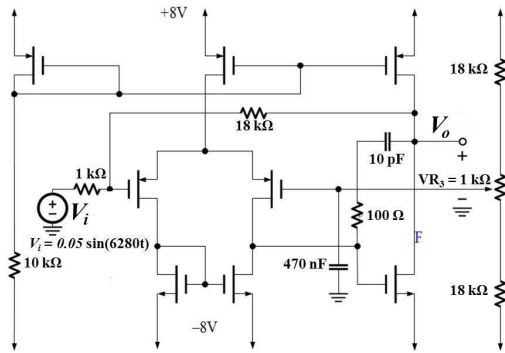


Figure (a)

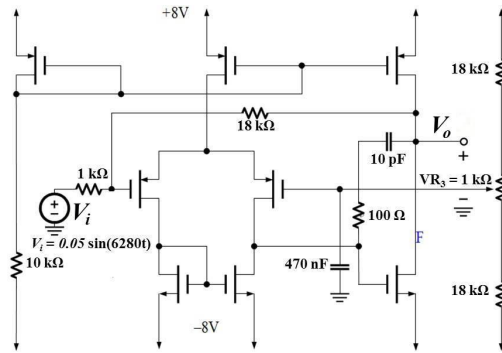


Figure (b)

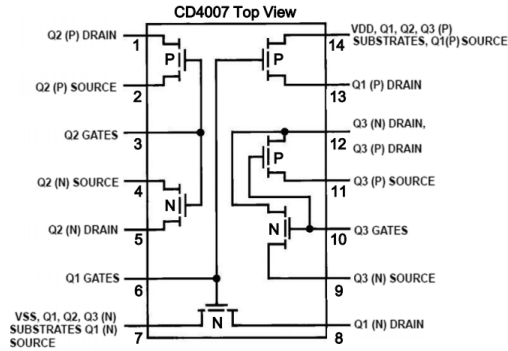


Figure (c): the CD4007 IC