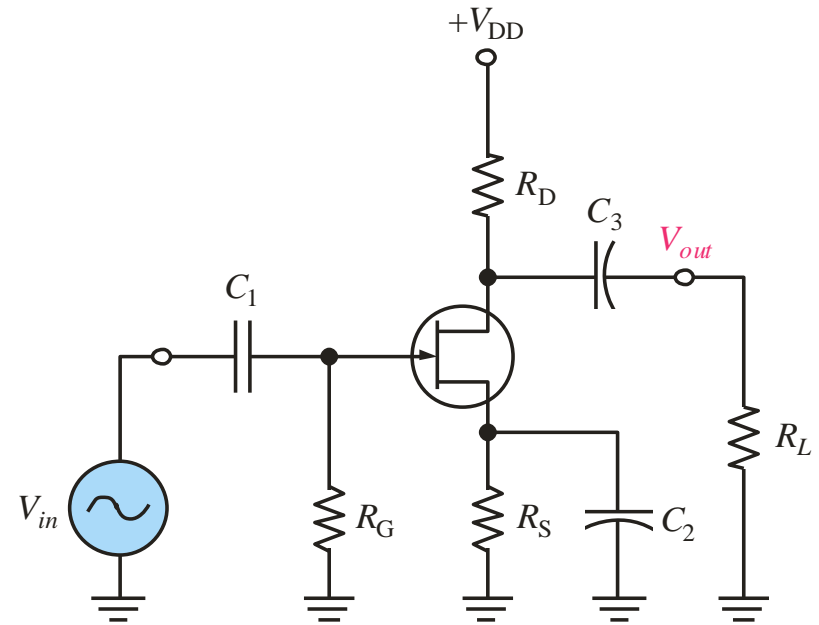


# Lecture 17:Field Effect Transistors (FETs) (3)

JFET Common Source Amplifier, MOSFET Common  
Source Amplifier, Examples

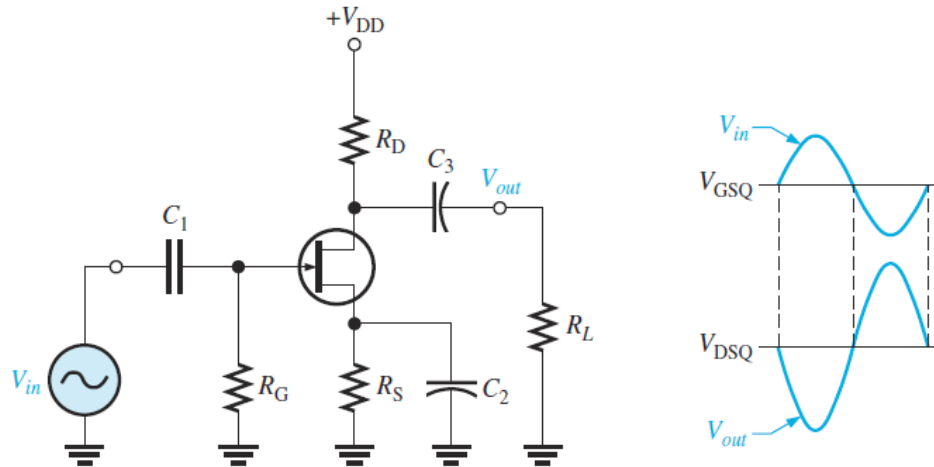
# Common Source JFET Amplifier

In a CS amplifier, the input signal is applied to the gate and the output signal is taken from the drain. The amplifier has higher input resistance and lower gain than the equivalent CE amplifier.

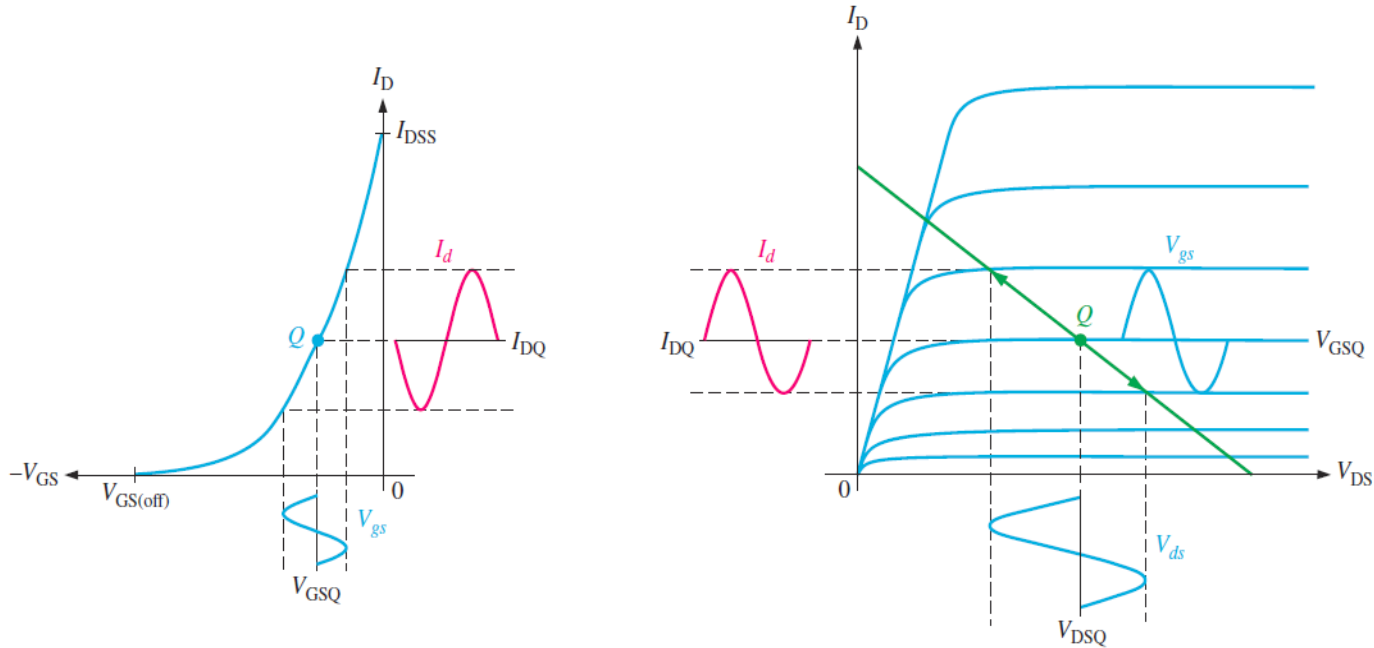


The voltage gain is given by the equation  $A_v = g_m R_d$ .

# Common Source Amplifier (Cont'd)

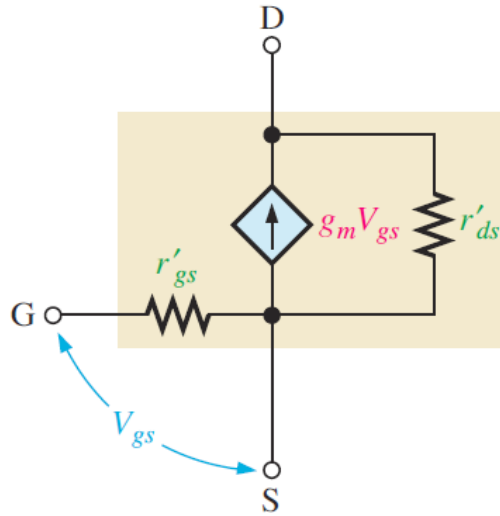


# Common Source Amplifier (Cont'd)

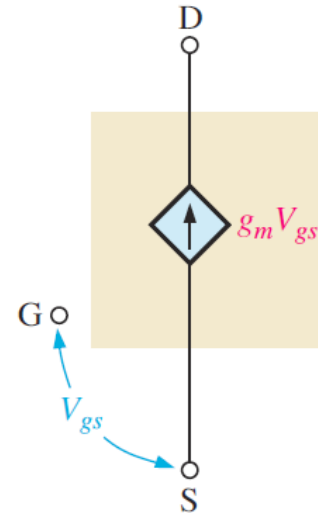


small signal variations can be significantly amplified

# Small Signal Model



(a) Complete



(b) Simplified

# E-MOSFET Common Source Amplifier

The E-MOSFET is a normally off device. The  $n$ -channel device is biased by making the gate positive with respect to the source. A voltage-divider biased E-MOSFET amplifier is shown.

