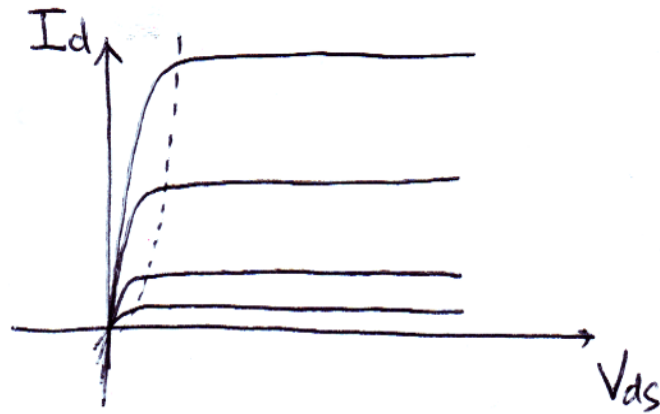P3360/AEP 3630

Lecture 21

MOSFET modes

mathematical model

If $V_{gs} < V_T$,
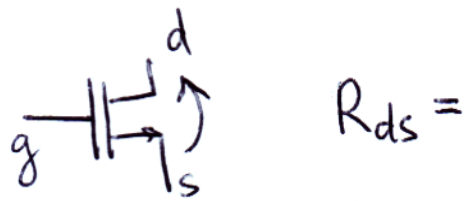
Else if $V_{ds} < V_{gs} - V_T$,

else,

Ohmic region

$R_{ds} =$
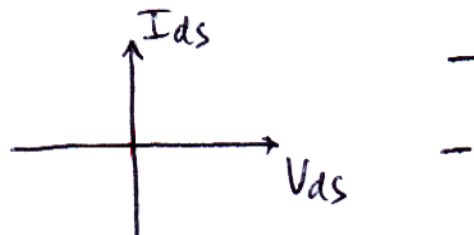
saturation (= active) region

$$I_d = K(V_{gs} - V_T)^2$$

Id axis (vertical), Vgs axis (horizontal), with V_T marked on Vgs axis.

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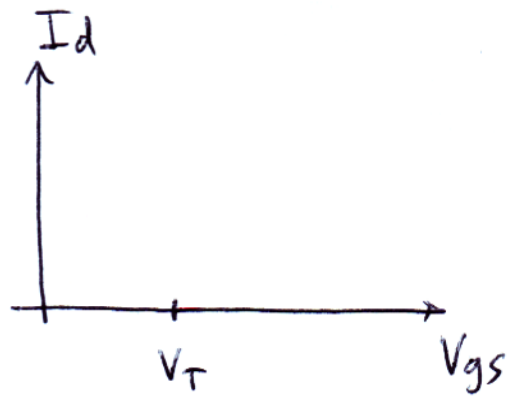
MOSFET circuit analysis

① large signal

② small-signal analysis

Id axis (vertical), Vgs axis (horizontal).