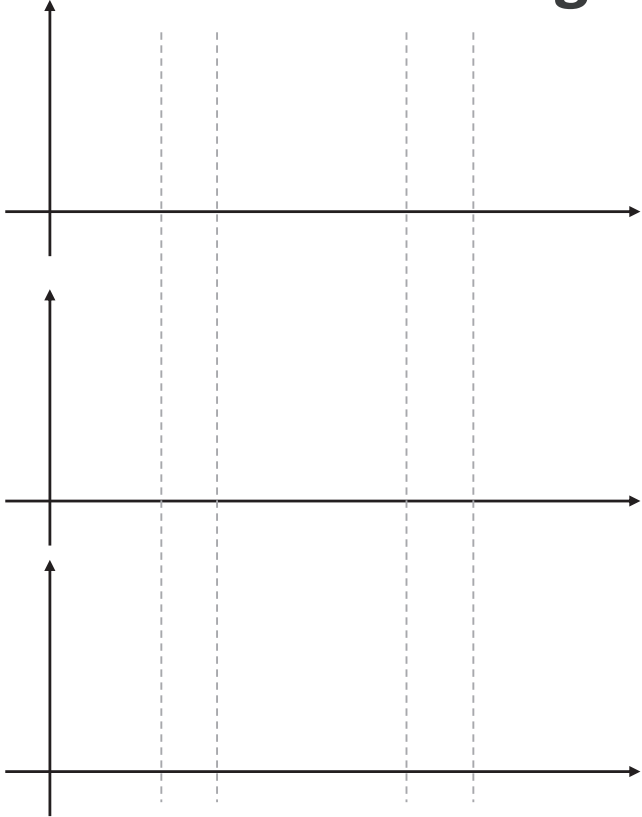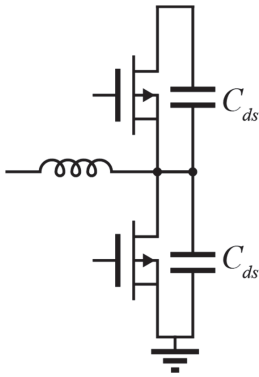# Switching Losses in a Half Bridge
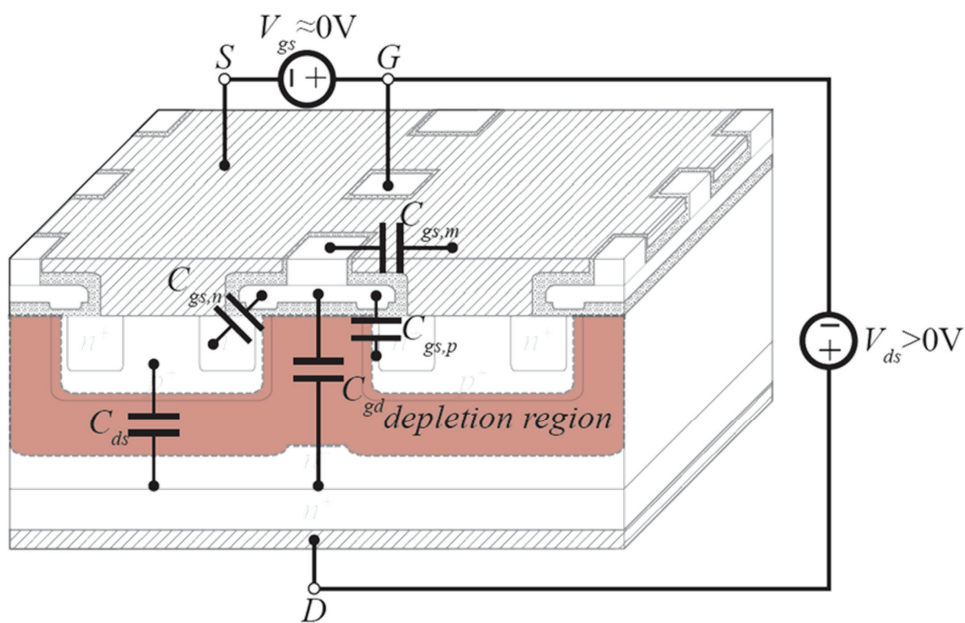
Target Switching Waveforms

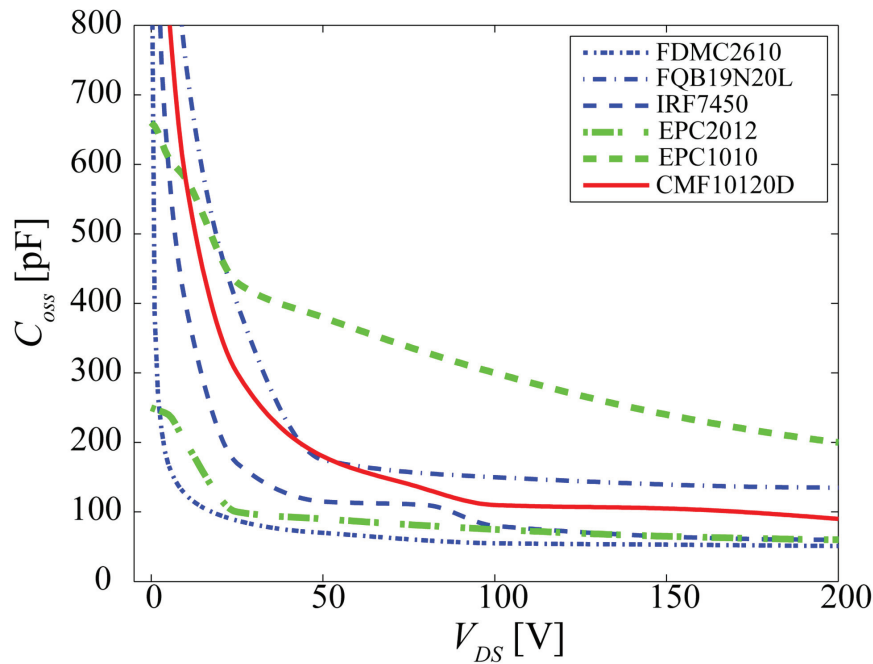# MOSFET Depletion Capacitance

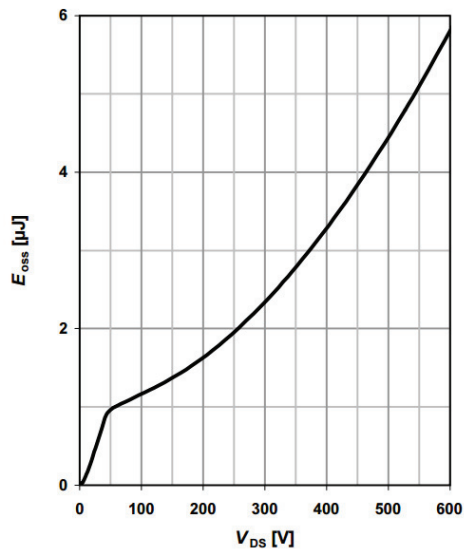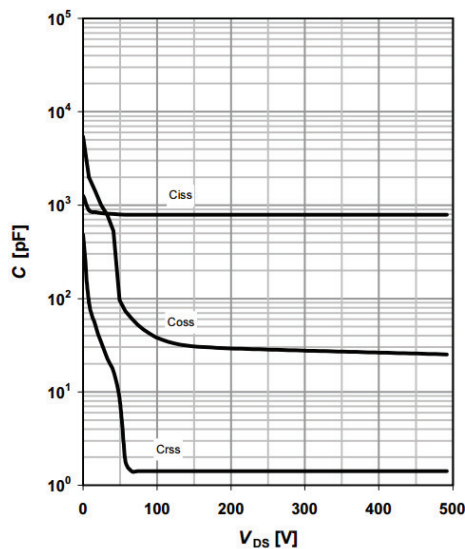# Example Device C_{oss}

Datasheet Reported Capacitance

IPB60R385CP

13 Typ. capacitances

$C = f(V_{DS})$; $V_{GS} = 0$ V; $f = 1$ MHz

14 Typ. Coss stored energy

$E_{oss} = f(V_{DS})$
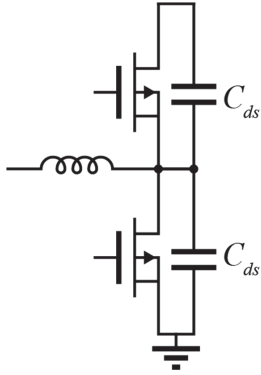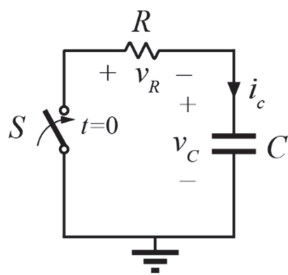
Modeling Nonlinear Capacitances
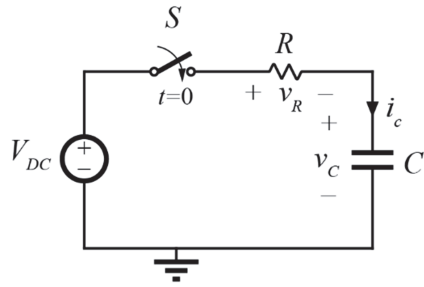
Energy and Charge Equivalents

C_{oss} Losses in a Half Bridge

M_2 Energy Loss

M_1 Energy Loss

Total Half Bridge C_{oss} Loss