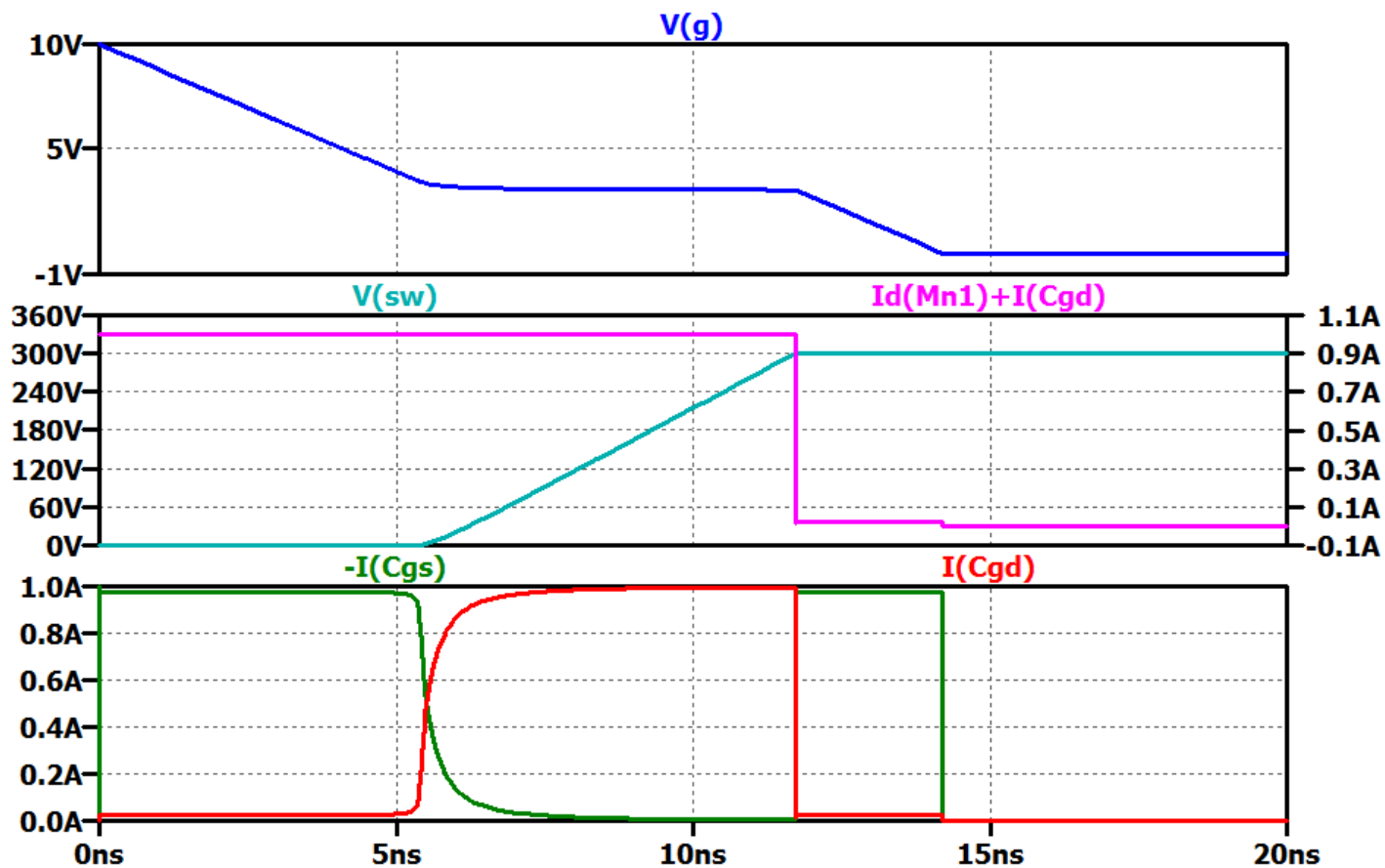
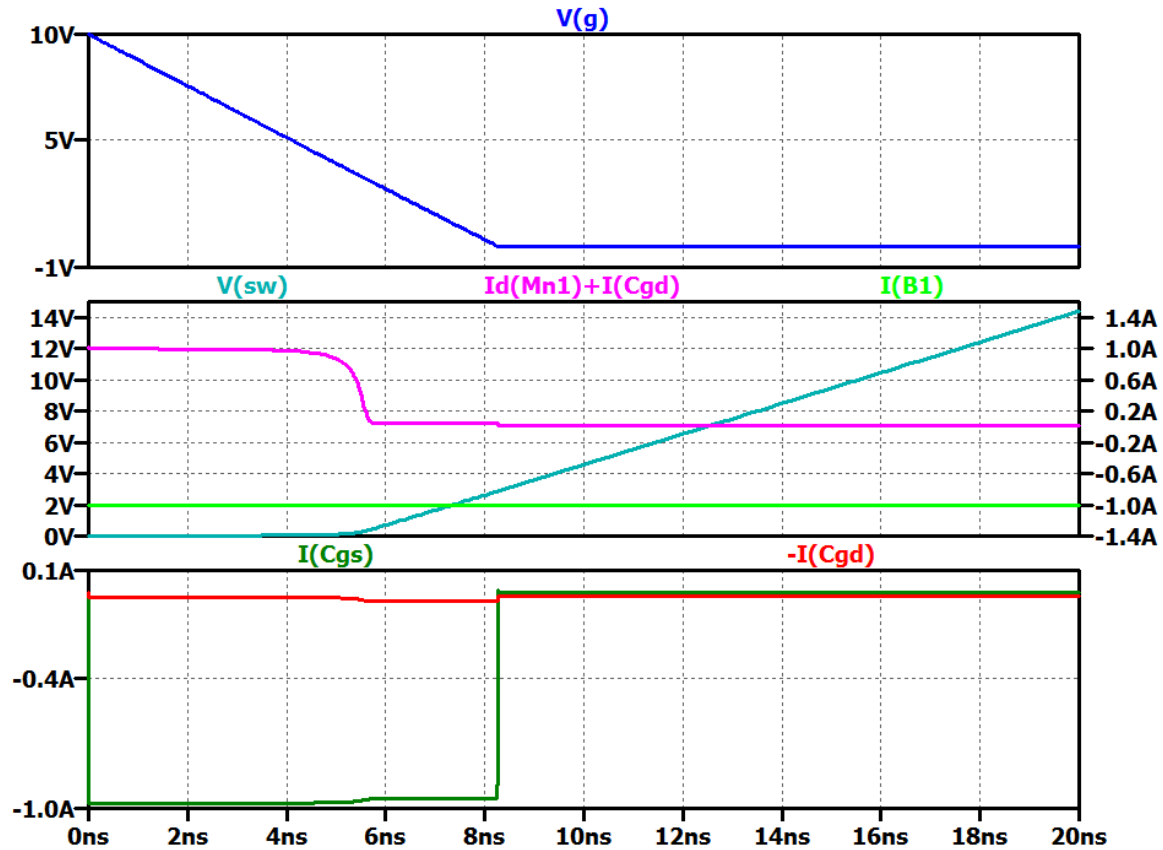


Turn-off

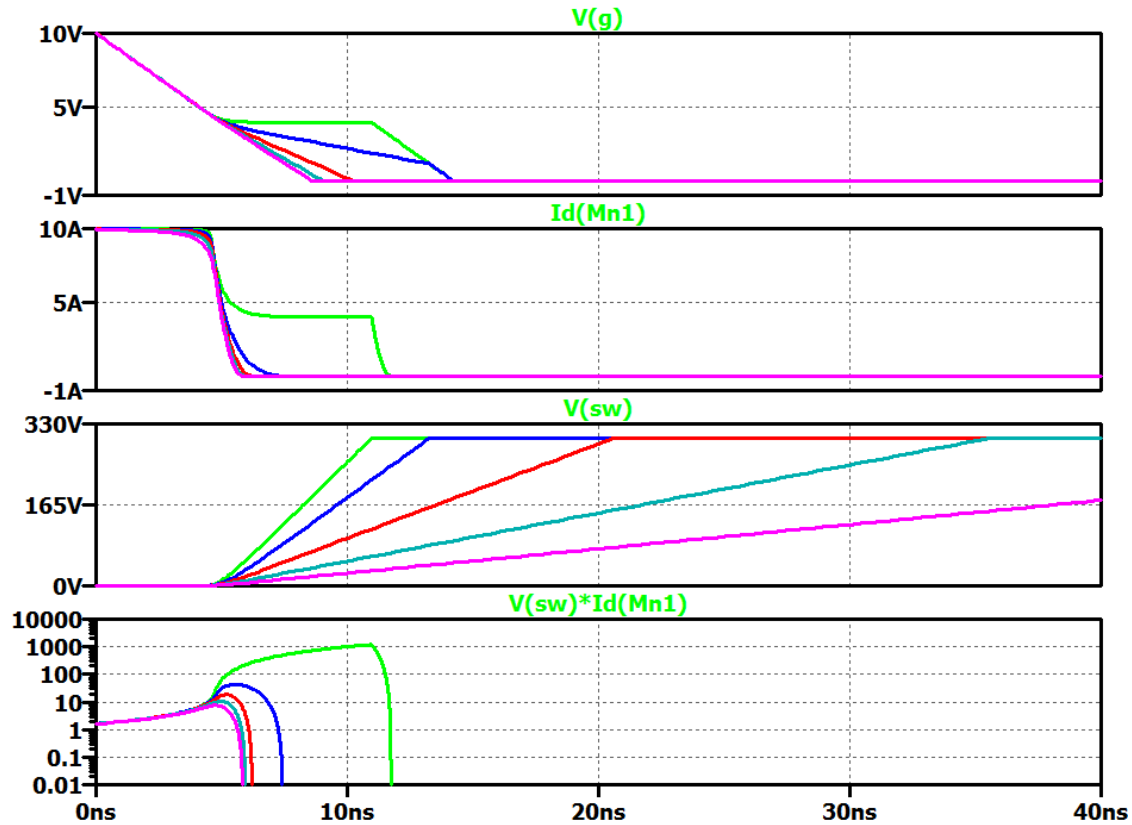


Turn-Off (Drain Dominated)

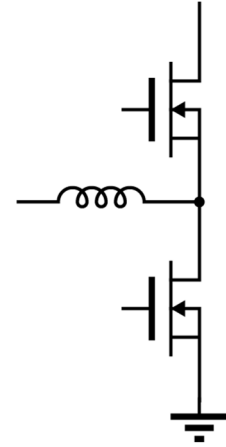


Gate- vs. Drain-Limited Switching

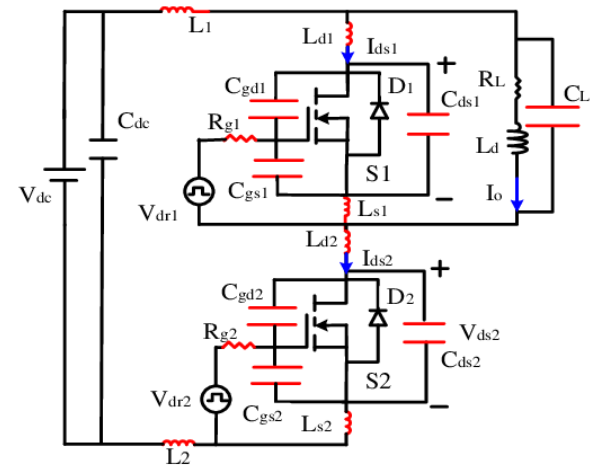
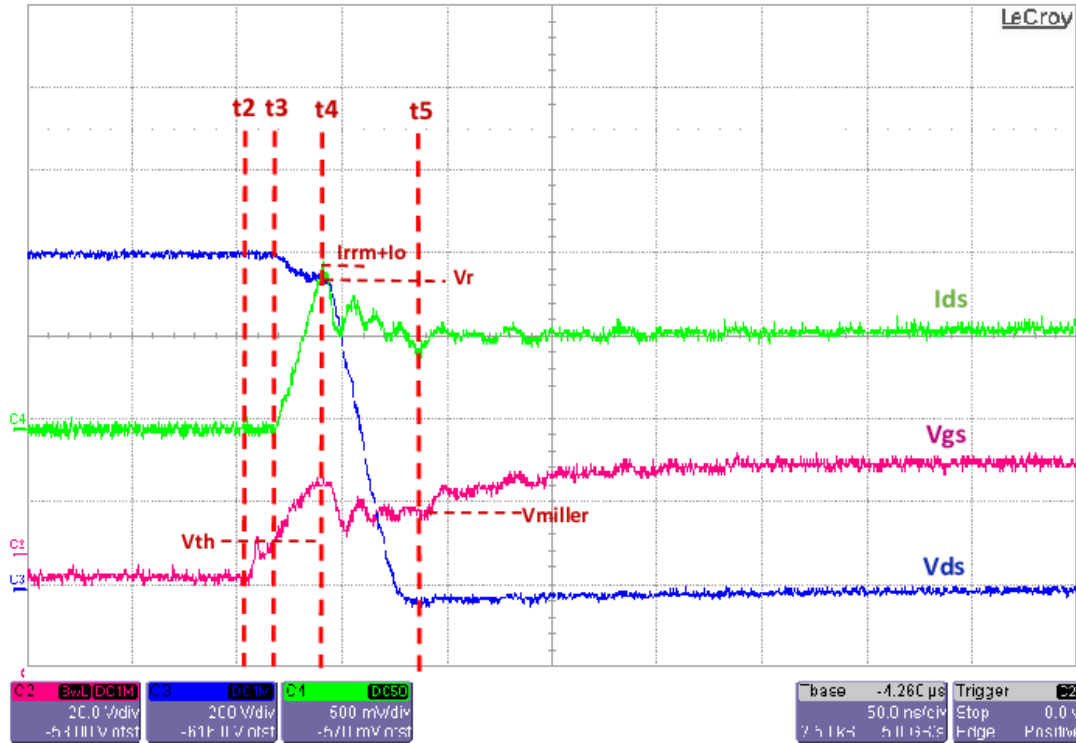
Simulation Results: C_{ds} Sweep



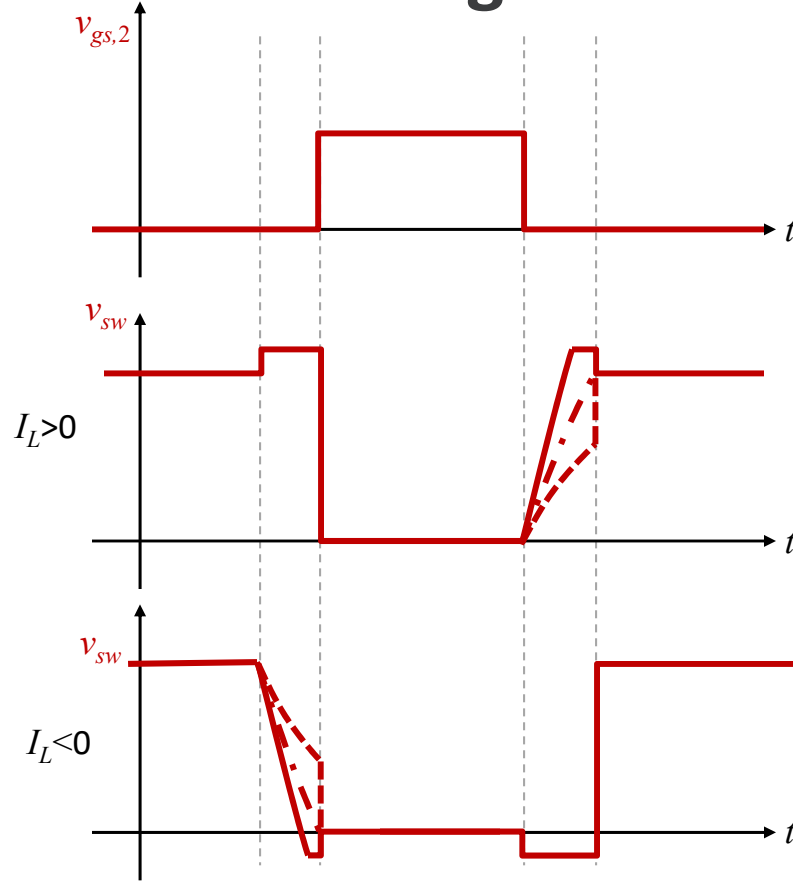
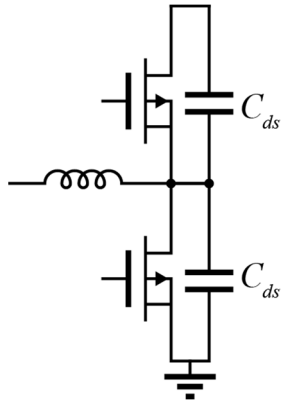
Limitations on Switching Speed



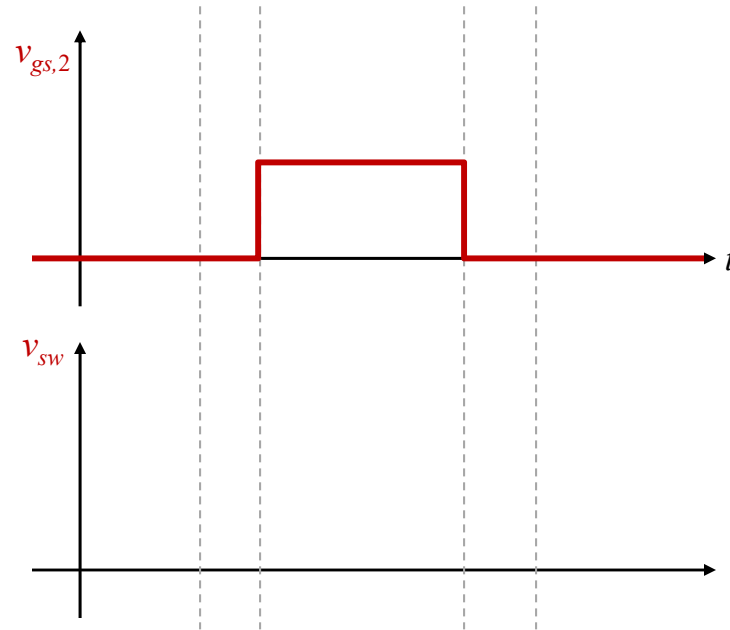
Switching Waveforms



Switching Losses in a Half Bridge



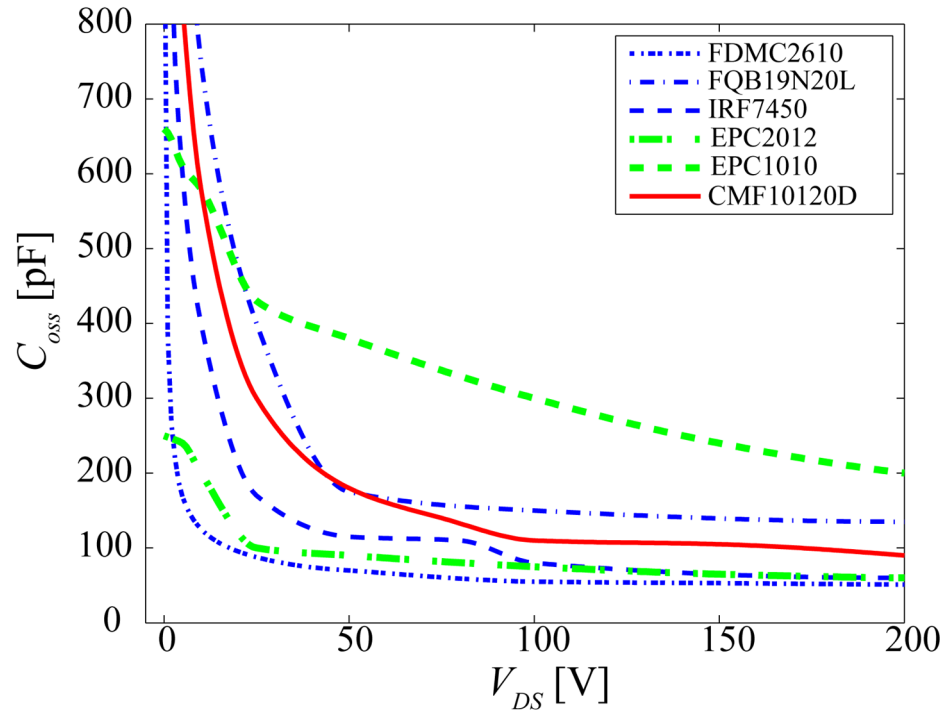
Ideal Switching Waveforms



Capacitive switching loss

ANALYSIS OF NONLINEAR CAPACITANCES

Example Device C_{oss}



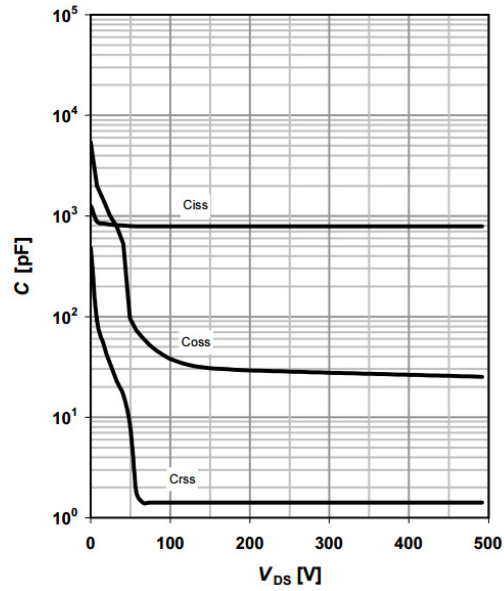
Datasheet Reported Capacitance



IPB60R385CP

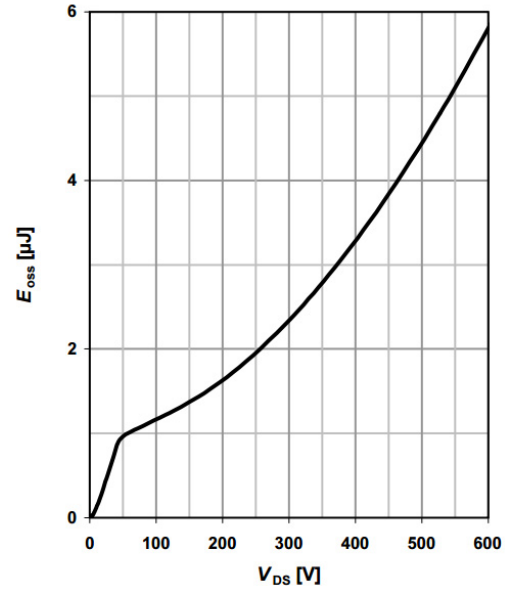
13 Typ. capacitances

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



14 Typ. C_{oss} stored energy

$E_{oss}=f(V_{DS})$



Modeling Nonlinear Capacitances