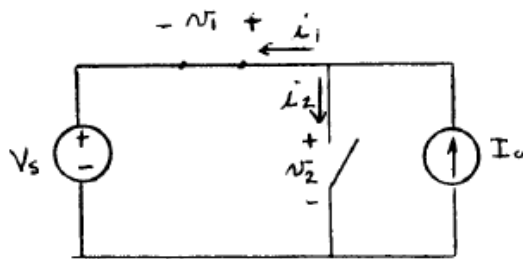
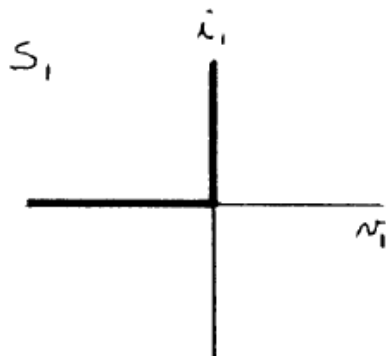


CHAPTER 1 SOLUTIONS

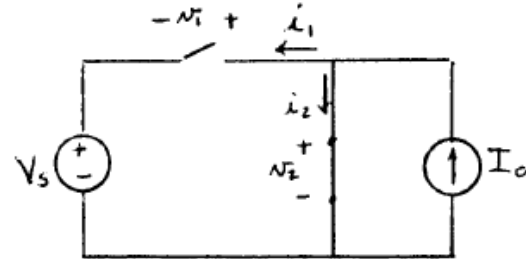
(1-1)



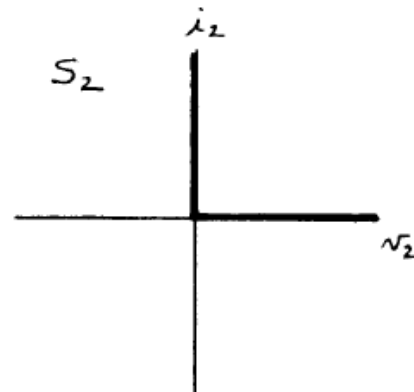
$$\begin{aligned} S_1: i_1 &= I_o > 0, v_1 = 0 \\ S_2: i_2 &= 0, v_2 = V_s > 0 \end{aligned}$$



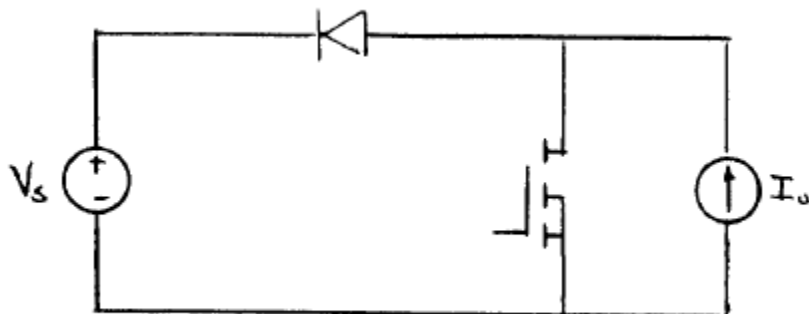
S1: Diode is sufficient



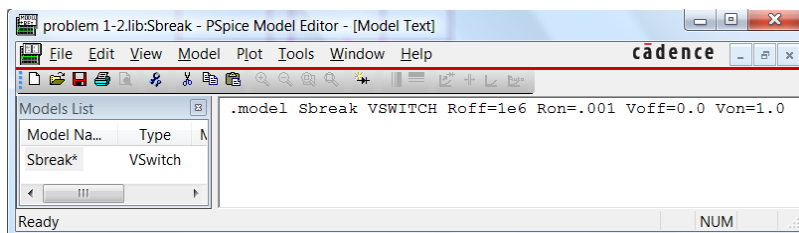
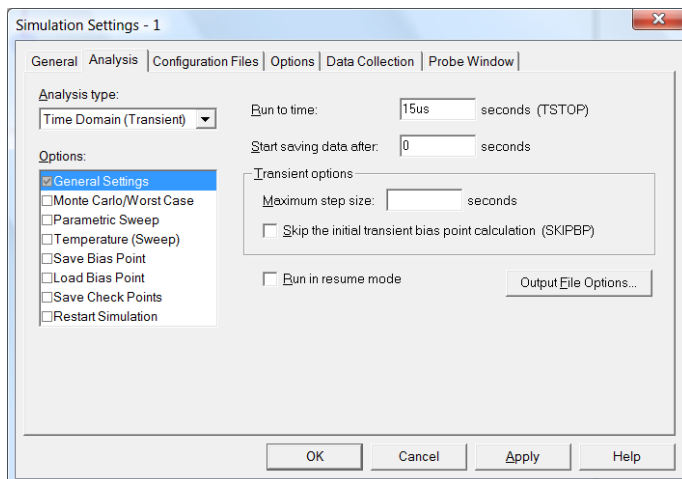
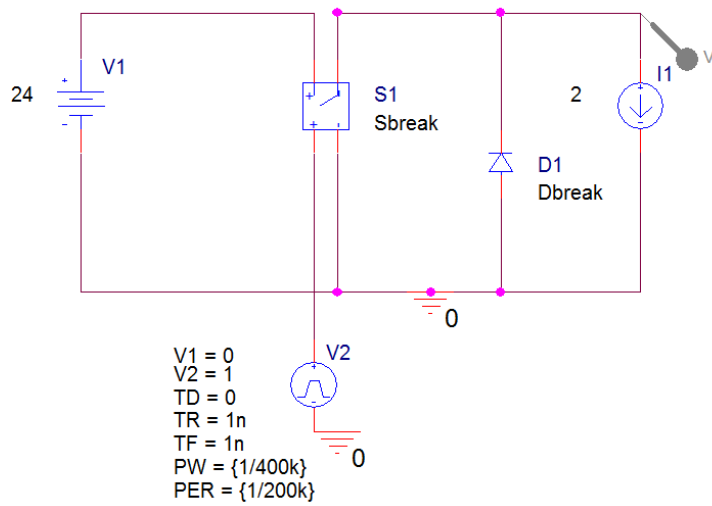
$$\begin{aligned} S_1: i_1 &= 0, v_1 = -V_s < 0 \\ S_2: i_2 &= I_o > 0, v_2 = 0 \end{aligned}$$

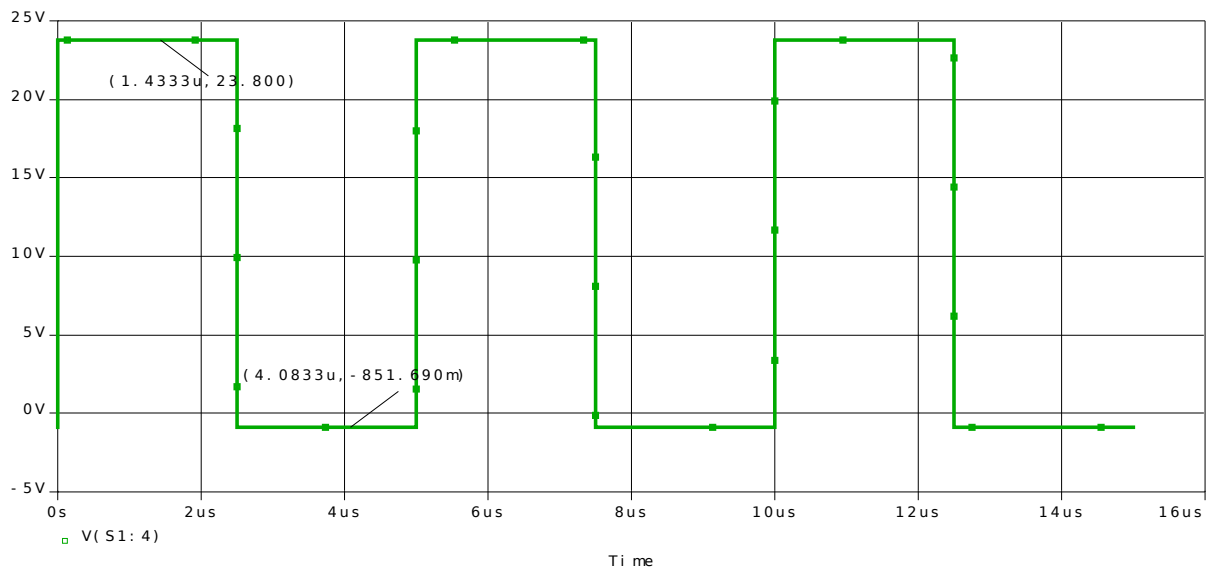
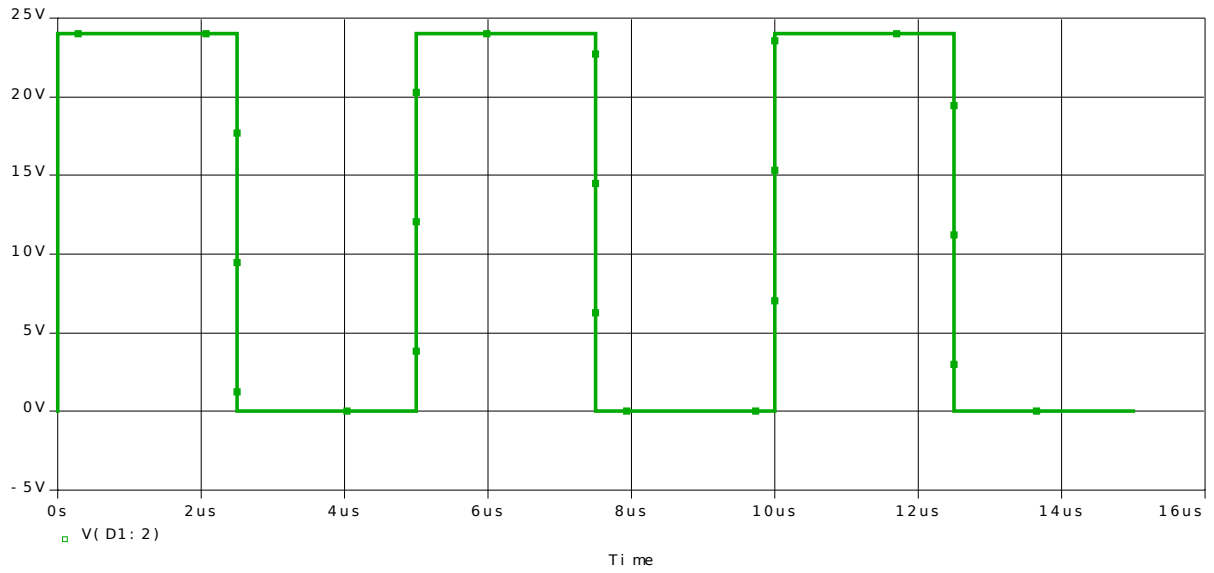


S2: Controlled device,
e.g., MOSFET



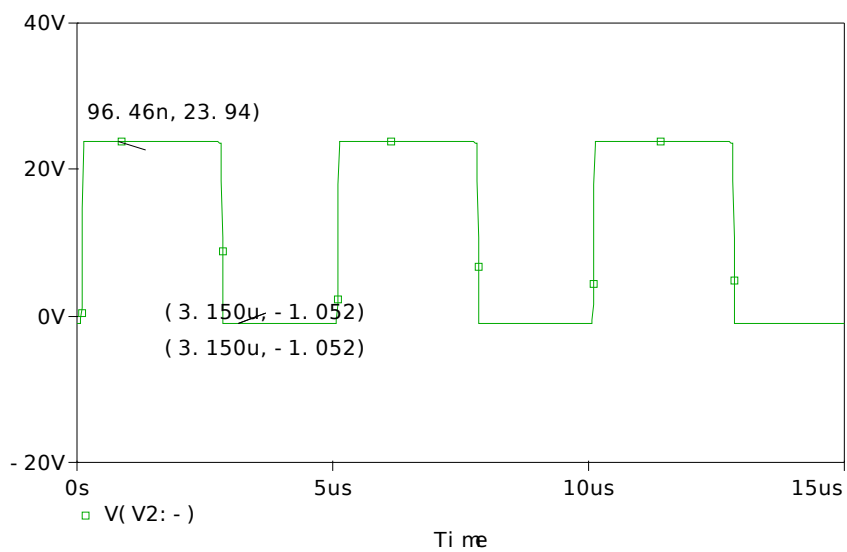
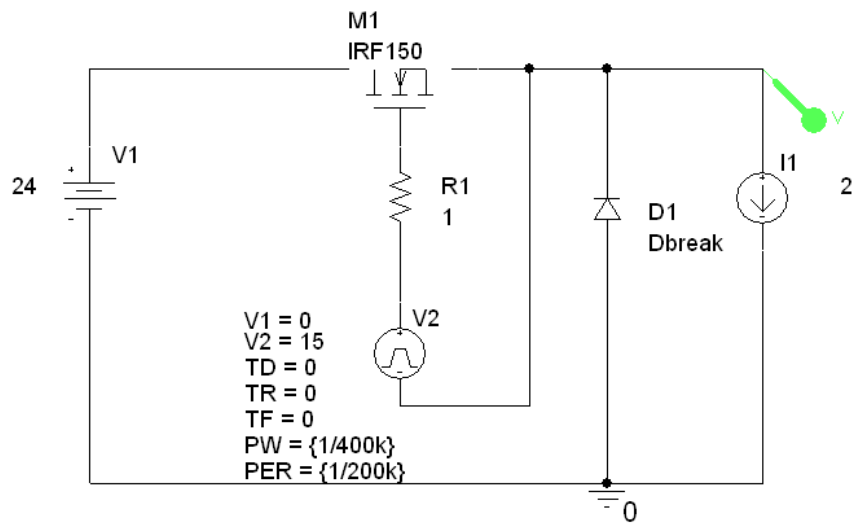
(1-2)





In part (b), the voltage across the current source is reduced from 24 V by the switch resistance and diode voltage drop.

(1-3)



(1-4)

