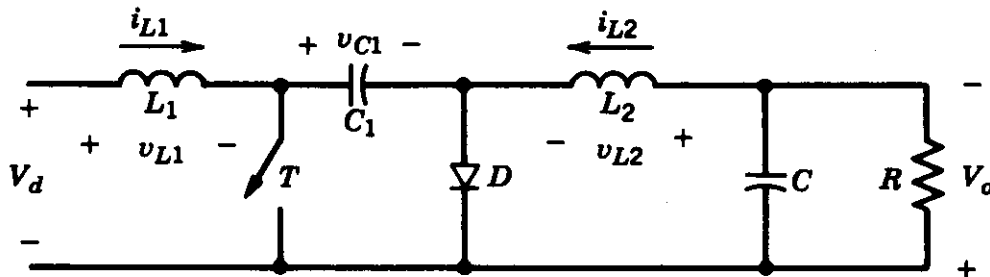


## LAB 06A

### Cuk Converter



Nominal Values

$$V_d=8.5\text{V}$$

$$L_1=L_2=10\ \mu\text{H}$$

$$R_{L1}=R_{L2}=10\text{m}\Omega$$

$$C_1=C_2=100\ \mu\text{F}$$

$$f_s=100\text{kHz}$$

$$\text{switch duty ratio } D=0.75$$

1. In steady state, obtain the following wave forms:

(a)  $v_{L1}$ ,  $v_{L2}$ ,  $i_{L1}$ ,  $i_{L2}$

(b)  $v_o$ ,  $i_o$ ,  $i_C$

Check if the  $V_o$ ,  $I_o$ ,  $I_d$  results agree with the analytical calculations. Repeat for  $D=0.25$ .

2. Obtain the peak-to-peak ripple in the output voltage and check to see if results agree with the analytical calculations.

3. Obtain the rms value of the current through  $L_2$  and check to see if results agree with the analytical calculations.

4. Obtain the rms value of the current through  $L_1$