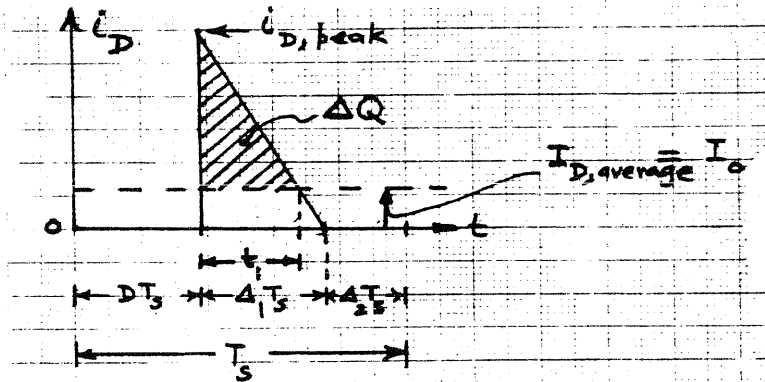


Problem 7-10



7-6

$$D_{\text{peak}} = i_{L,\text{peak}} = \frac{V_d}{L} DT_s$$

during t_{off} : $\frac{di_D}{dt} = \frac{V_d - V_o}{L}$

$$-\frac{di_D}{dt} = \frac{i_{D,\text{peak}} - I_o}{t_1} = \frac{V_o - V_d}{L}$$

$$\therefore t_1 = \frac{L(i_{D,\text{peak}} - I_o)}{V_o - V_d} = \frac{L(\frac{V_d}{L} DT_s - I_o)}{V_o - V_d}$$

$$\Delta V_o = \frac{\Delta Q}{C} = \frac{1}{2C} (i_{D,\text{peak}} - I_o) t_1 = \frac{1}{2LC} \frac{(V_d DT_s - LI_o)^2}{(V_o - V_d)}$$