

Chapter 2

Problem 2-1

$$P_s = \frac{1}{2} V_d I_o f_s [t_c(\text{on}) + t_c(\text{off})]; \quad (2-6)$$

$$t_c(\text{on}) = t_{ri} + t_{fv}; \quad (2-1)$$

$$t_c(\text{off}) = t_{rv} + t_{fi}; \quad (2-4)$$

$$P_s = \frac{1}{2} (300\text{V})(4\text{A}) f_s [100 \text{ ns} + 50 \text{ ns} + 100 \text{ ns} + 200 \text{ ns}]$$

$$P_s = 0.27 \times 10^{-3} f_s \text{ Watts}$$

P_s varies linearly from 6.75 W at 25 kHz to 27 W at 100 kHz.

