

Kaplan Electrical FE Review Manual

Errata

Chapter 12 (Problems 12.12 & 12.13)

12.12.

$$\eta := 2 \quad I_s := 9.748 \cdot 10^{-9} \quad k := 1.38 \cdot 10^{-23} \quad q := 1.6 \cdot 10^{-19}$$

$$I_D := 10^{-3}$$

a.

$$T := 50 + 273$$

$$V_d := \eta \cdot \left(k \cdot \frac{T}{q} \right) \cdot \left(\ln \left(\frac{I_D}{I_s} \right) + 1 \right) \quad V_d = 0.699 \text{ Volts}$$

b

$$T := 0 + 273$$

$$V_d := \eta \cdot \left(k \cdot \frac{T}{q} \right) \cdot \left(\ln \left(\frac{I_D}{I_s} \right) + 1 \right) \quad V_d = 0.59 \text{ Volts}$$

12.13

$$V_t := 0.026 \quad V_d := 0.7 \quad I_d := 2.3 \cdot 10^{-3}$$

Let $\eta := 2$

$$I_s := \frac{I_d}{\left[e^{\left(\frac{V_d}{\eta \cdot V_t} \right)} - 1 \right]} \quad I_s = 3.277 \times 10^{-9} \text{ Amps}$$

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