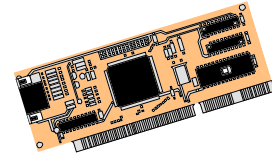




Math Study Strategies

Math for Electronics

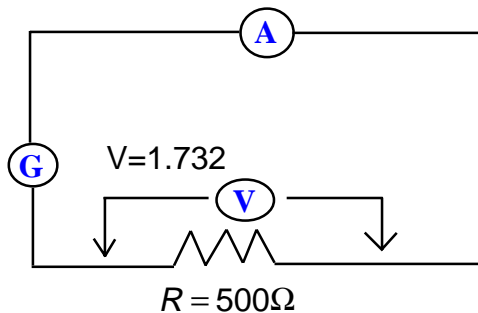
Problem Solving (Page 2)



A voltage of 1.732 V is applied across a 500Ω Resistor.

- a) How much power is expended in the resistor?
- b) How much current flows through the resistor?

Step 1- Draw the diagram of the circuit



Step 2

Ohm's formula $P = VI$

$$\text{but } I = \frac{V}{R} \text{ therefore } P = \frac{V^2}{R}$$

Substituting in the given values

$$P = \frac{1.732^2}{500} = \frac{1.732^2}{5 \times 10^2} = \frac{1.732^2}{5} \times 10^{-2} = 0.006\text{W}$$

Converting to a smaller unit

$$.006\text{W} = \boxed{6\text{mW}}$$

Step 3

$$I = \frac{V}{R} = \frac{1.732}{500} = \frac{1.732}{5} \times 10^{-2} = 0.346 \times 10^{-2}\text{ A}$$

Doing the conversion

$$\boxed{I = 3.46\text{mA}}$$