

### Answer on Question #71763, Physics / Electric Circuits

**Question.** The maximum current rating for a 10 kilo ohms, 0.5 W resistor is...

**Given.**

$R = 10 \text{ kilo ohm}$ ;  $N = 0.5 \text{ W}$ .

**Find.**

$I - ?$ .

**Solution.**

From the formula

$$N = I \cdot U = I^2 \cdot R$$

we have

$$I^2 = \frac{N}{R} \rightarrow I = \sqrt{\frac{N}{R}} = \sqrt{\frac{0.5}{10000}} \approx 0.00707 \text{ A} = 7.07 \text{ mA}$$

**Answer.**  $I = 7.07 \text{ mA}$

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