

Answer on Question #62778-Physics-Electromagnetism

Calculate the self-inductance of a solenoid of length 10 cm, area 5 square cm and 200 turns

Solution

The self-inductance of the solenoid is

$$L = \frac{\mu_0 N^2 A}{l}.$$

$$L = \frac{(4\pi \cdot 10^{-7})(200)^2(5 \cdot 10^{-4})}{0.1} = 2.5 \cdot 10^{-4} H = 0.25 \text{ mH}.$$

Answer: 0.25 mH.

<https://www.AssignmentExpert.com>