

Problem 1.10

A lightning bolt with 10 kA strikes an object for 15 μ s. How much charge is deposited on the object?

Solution

Multiply the current by the time to get the amount of charge deposited.

$$Q = \left(10 \cancel{\text{kA}} \times \frac{1000 \text{ A}}{1 \cancel{\text{kA}}} \right) \times \left(15 \cancel{\mu\text{s}} \times \frac{1 \text{ s}}{10^6 \cancel{\mu\text{s}}} \right) = 150 \times 10^{-3} \text{ A} \cdot \text{s} = 0.15 \text{ C}$$