

Answer on question #65350, Physics / Electric Circuits

Question Clear! A defibrillator uses a 250 F capacitor charged to a potential difference of 1000 V. If all the charge on the capacitor is delivered to the patient during a time interval of $5.0 \cdot 10^{-2}$ s, determine the resistance associated through the patients chest.

Solution The current is

$$I = \frac{Q}{t} = \frac{CU}{t} = \frac{250 \cdot 10^{-6} \cdot 1000}{5 \cdot 10^{-2}} = 5 \text{ A}$$

The resistance is

$$R = \frac{U}{I} = \frac{1000}{5} = 200 \Omega$$