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A uniform copper rod of cross-sectional area 8.0 mm^2 has 8.2×10^{28} conduction electrons per cubic metre. A current flows through the rod when a potential difference of 3.0 V is applied across it.

Given that the drift velocity of electrons in the rod is 2.3×10^{-5} m s^{-1}, determine the resistance of the rod?

A

0.08 Ω

B

0.16 Ω

C

0.80 Ω

D

1.2 Ω