38 The resistivity of the intrinsic semiconductor silicon decreases from 400 Ω m at 20 °C to 40 Ω m at 60 °C.

Which statement, using band theory, best explains the change in resistivity of silicon with increase in temperature?

A Conduction band electrons which carry current move faster.

B More electrons can move through the valence band taking part in conduction.

C More valence band electrons can be promoted to the conduction band.

D The energy gap between the valence and conduction bands decreases.

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