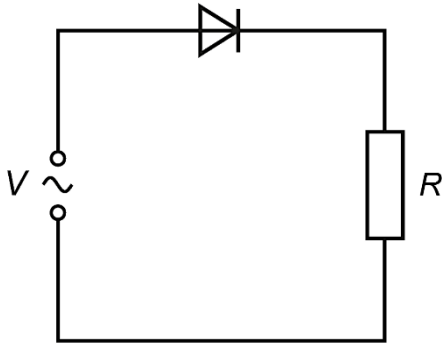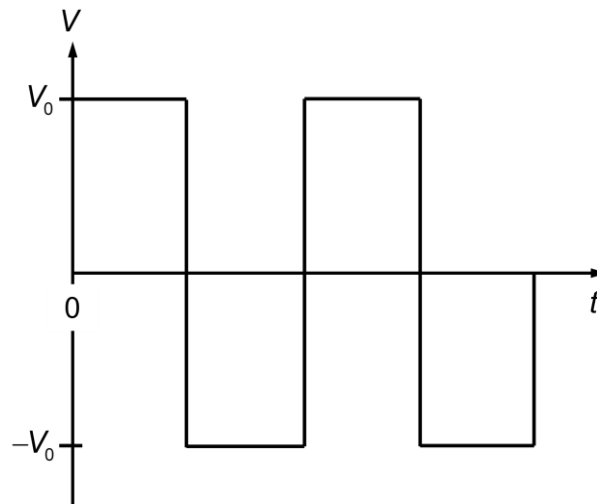**27** An alternating square wave power supply V is connected to a resistor of resistance R and a diode in the circuit as shown.

The variation of V with time t is shown in the graph.

What is the mean power dissipated in the resistor?

A $\dfrac{V_0^2}{4R}$ **B** $\dfrac{V_0^2}{2R}$ **C** $\dfrac{V_0^2}{\sqrt{2}R}$ **D** $\dfrac{V_0^2}{R}$