25 When an alternating current, $I = I_0 \cos \omega t$, passes through a resistor, the mean power dissipated in the resistor is P.

The peak value of the alternating current is then reduced by half and the current is passed through a diode.

What is the mean power dissipated in the resistor in terms of P?

A $\frac{P}{8}$ **B** $\frac{P}{4}$ **C** $\frac{P}{2}$ **D** P