21. (a) We compare this expression for the current with $i = I \sin(\omega t+\phi_0)$. Setting $(\omega t+\phi) = 2500t + 0.680 = \pi/2$, we obtain $t = 3.56 \times 10^{-4}$ s.

(b) Since $\omega = 2500$ rad/s $= (LC)^{-1/2}$,

$$L = \frac{1}{\omega^2 C} = \frac{1}{(2500\,\text{rad/s})^2 (64.0\times10^{-6}\,\text{F})} = 2.50\times10^{-3}\,\text{H}.$$

(c) The energy is

$$U = \frac{1}{2}LI^2 = \frac{1}{2}(2.50\times10^{-3}\,\text{H})(1.60\,\text{A})^2 = 3.20\times10^{-3}\,\text{J}.$$