1.25 P The voltage and current at the terminals of the circuit element in Fig. 1.5 are zero for $t < 0$. For $t \geq 0$ they are

$$v = 80{,}000te^{-500t}\ \text{V}, \quad t \geq 0;$$

$$i = 15te^{-500t}\ \text{A}, \quad t \geq 0.$$

a) Find the time (in milliseconds) when the power delivered to the circuit element is maximum.

b) Find the maximum value of p in milliwatts.

c) Find the total energy delivered to the circuit element in microjoules.

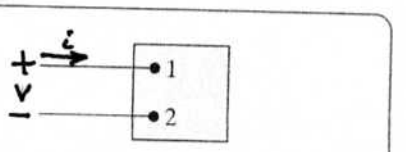

Figure 1.5 An ideal basic circuit element.