

# Chapter 6 Example 6-1

Q  $C = 4F$  find  $i_C(t)$   $p_C(t)$   $w_C(t)$

Formula  $q(t) = C u(t)$

$$i = C \frac{du}{dt}$$

$$u(t) = \frac{1}{C} \int_{-\infty}^t i(\xi) d\xi$$

$$u(t) = u(t_0) + \frac{1}{C} \int_{t_0}^t i(\xi) d\xi$$

$$p(t) = u(t) i(t)$$

$$w_C(t) = \frac{1}{2} C u^2(t)$$

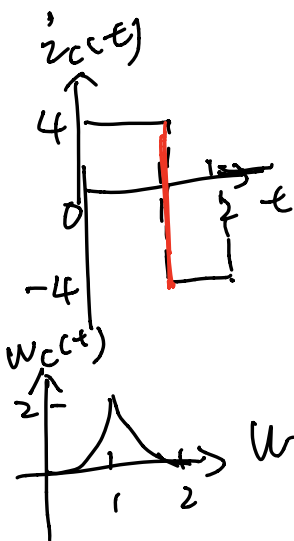
Solution  $i_C(t) = C \frac{du}{dt} = 4$  ,  $0 \leq t \leq 1$

$$i_C(t) = C \frac{du}{dt} = -4$$
 ,  $1 < t \leq 2$

0

$$p_C(t) = u(t) i(t)$$

others



$$w_C(t) = \frac{1}{2} C u^2(t) = 2 u^2(t)$$

