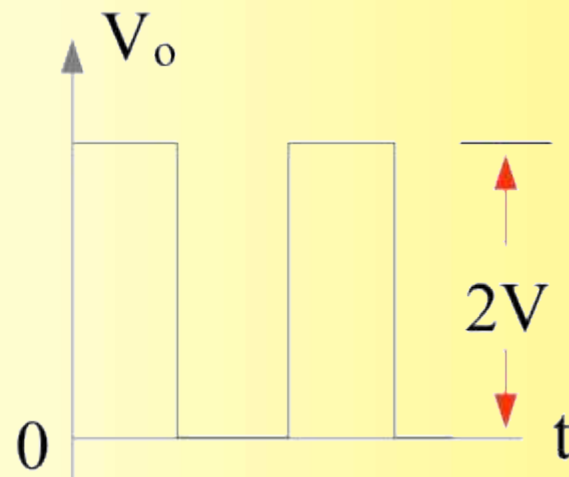
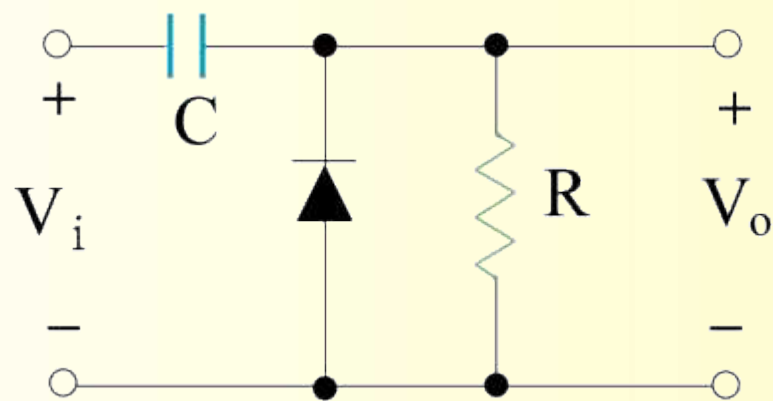
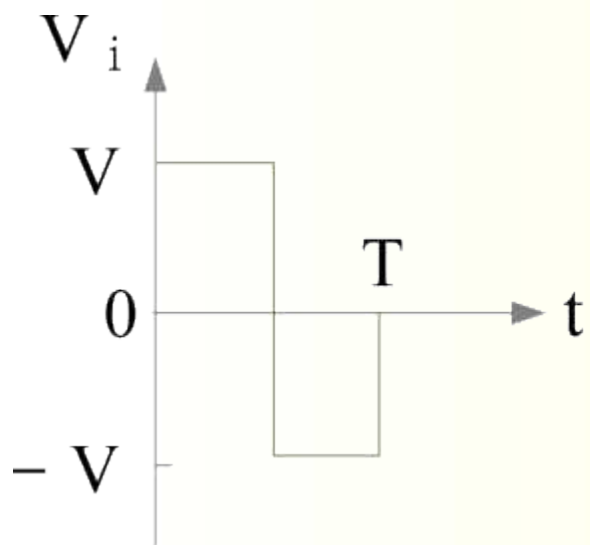


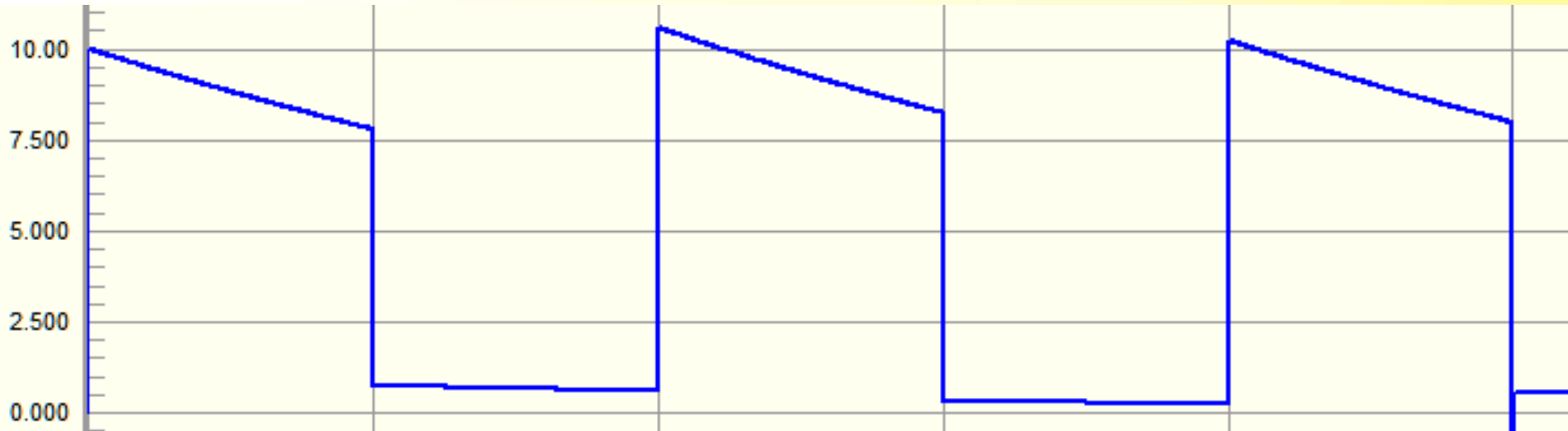
箝位器

- 又稱為定位器
- 將輸入訊號的位準予以上移或下移，不改輸入訊號的波形。
- 至少需要三樣元件：
 - ❖ 二極體、電容器、電阻器
- RC 的時間常數通常需遠大於輸入訊號的週期
- 有時稱為直流重置器
 - ❖ 可分為正箝位器及負箝位器

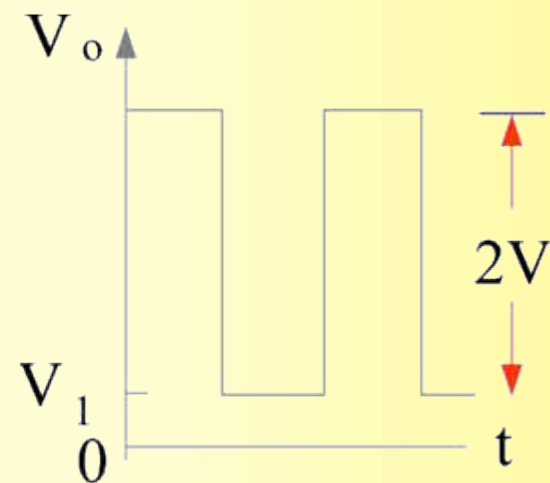
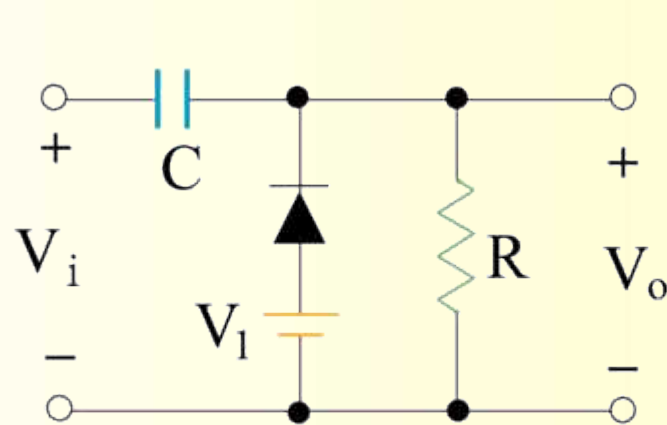
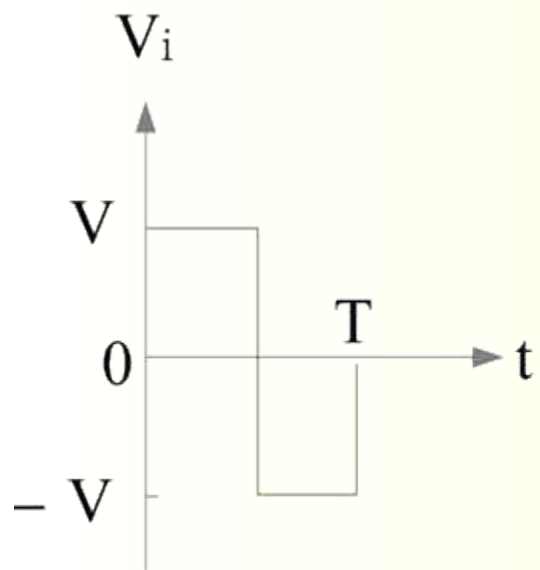
簡單型正箝位器



RC 時間常數短，造成電容放電明顯

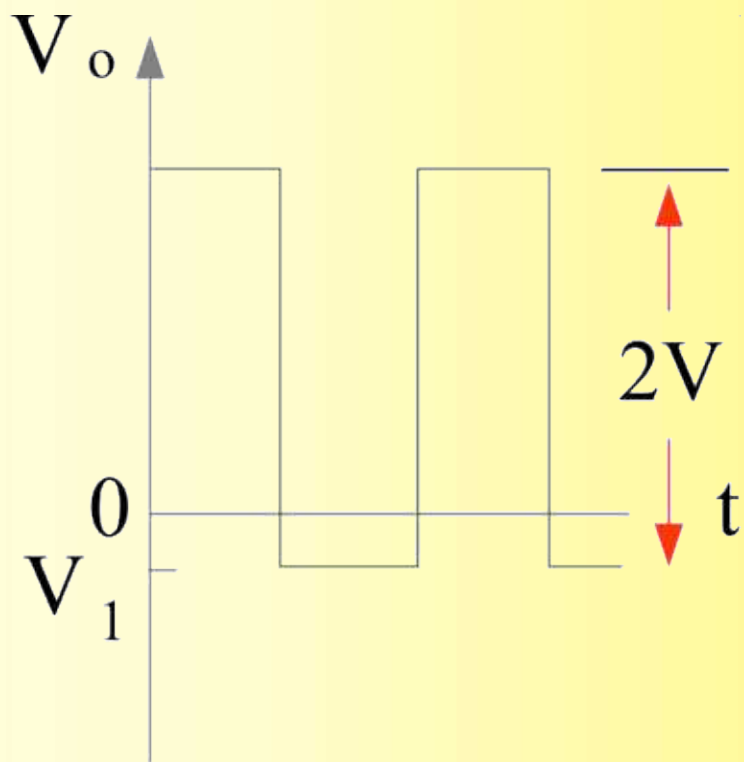
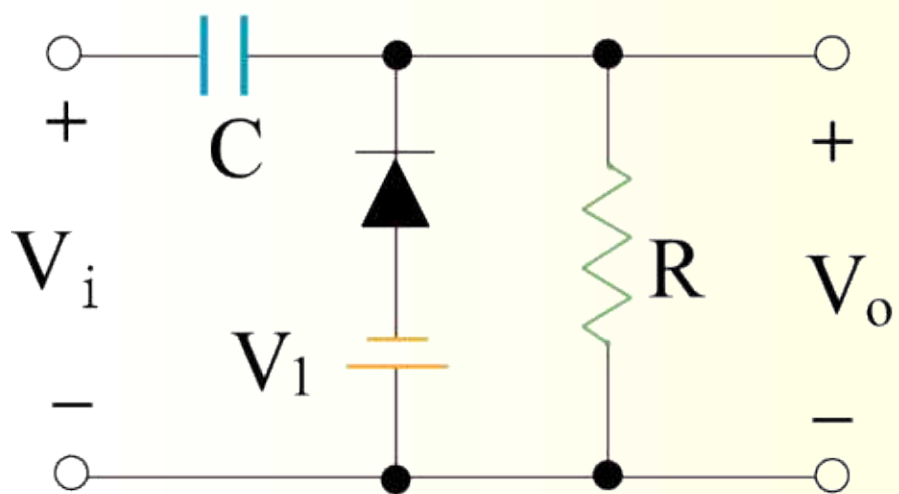


正箝位器



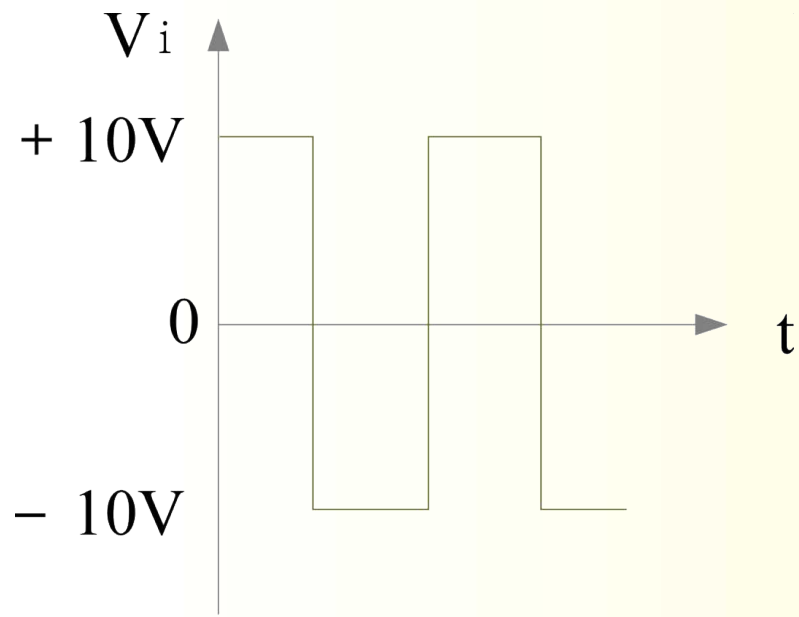
(a) 順向偏壓型

正箝位器

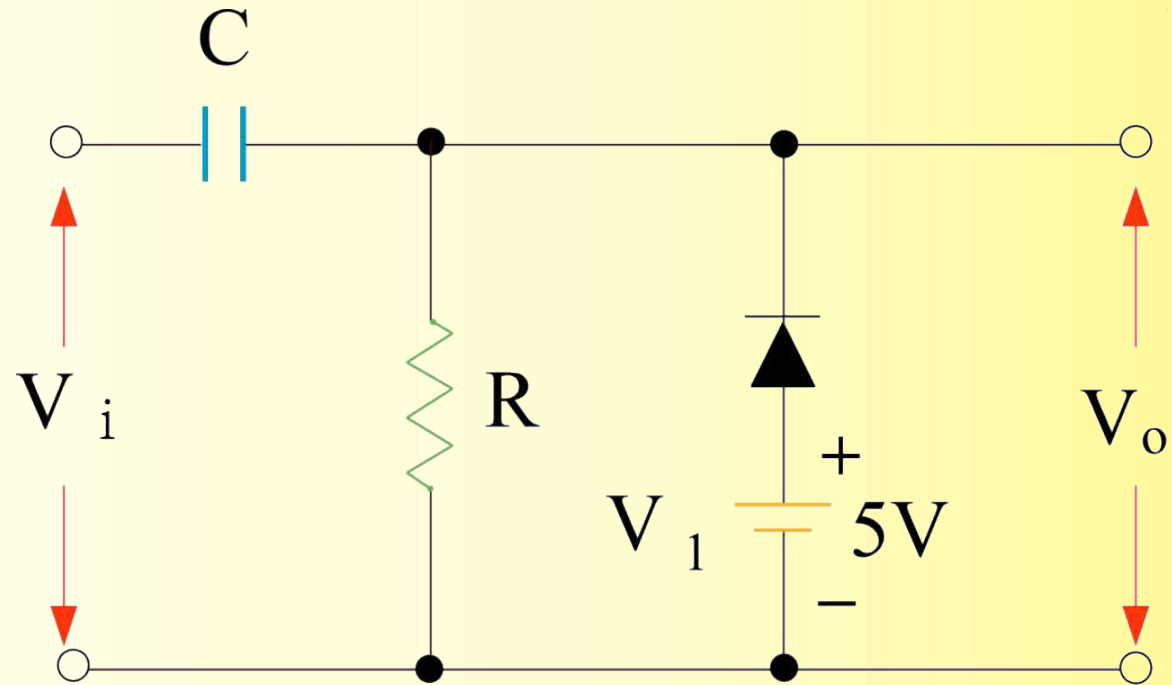


(b) 逆向偏壓型

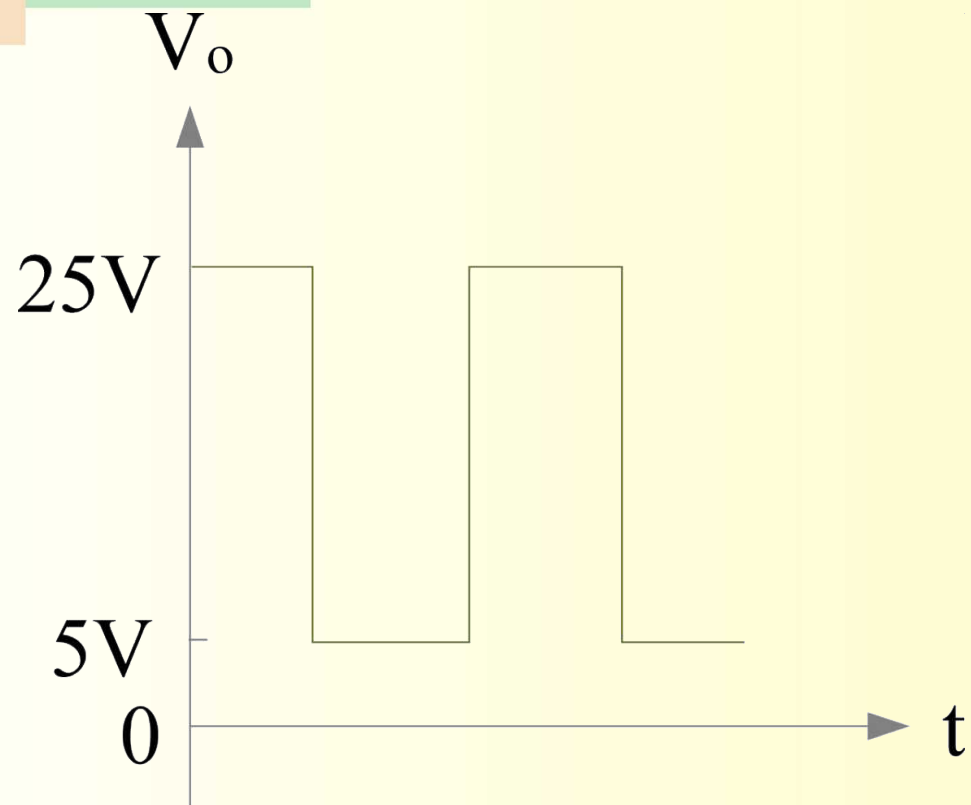
如圖所示箝位器，求其輸出波形



(a) 輸入波形

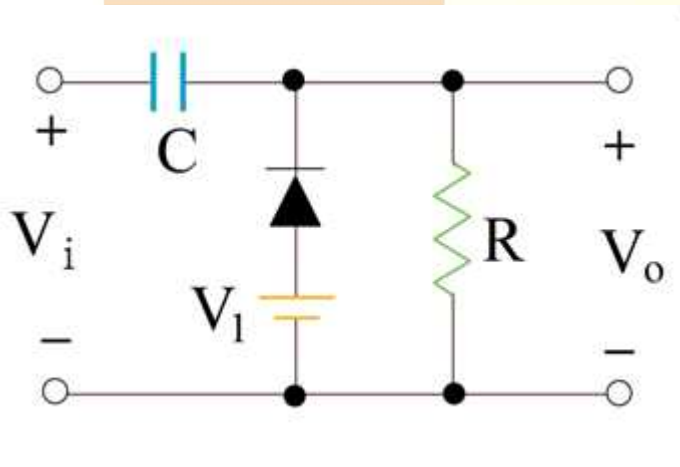


(b) 電路



(c) 輸出波形

如圖， $V_1=2V$ ， V_i 為方波，峰值為 $4V$ ，則輸出波形為何？(二極體為理想)

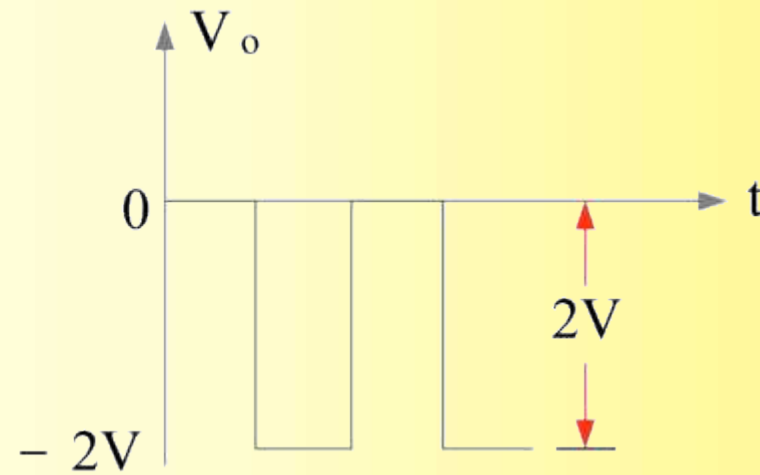
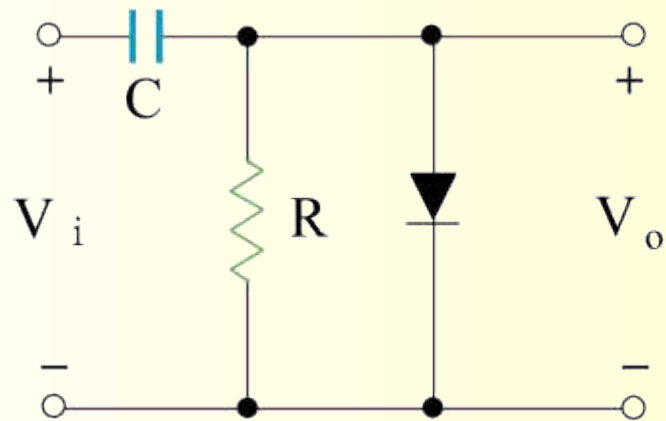
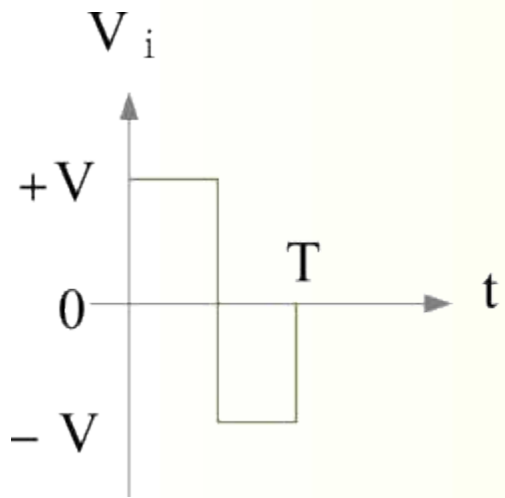


$$V_m = 4V, V_1 = 2V$$

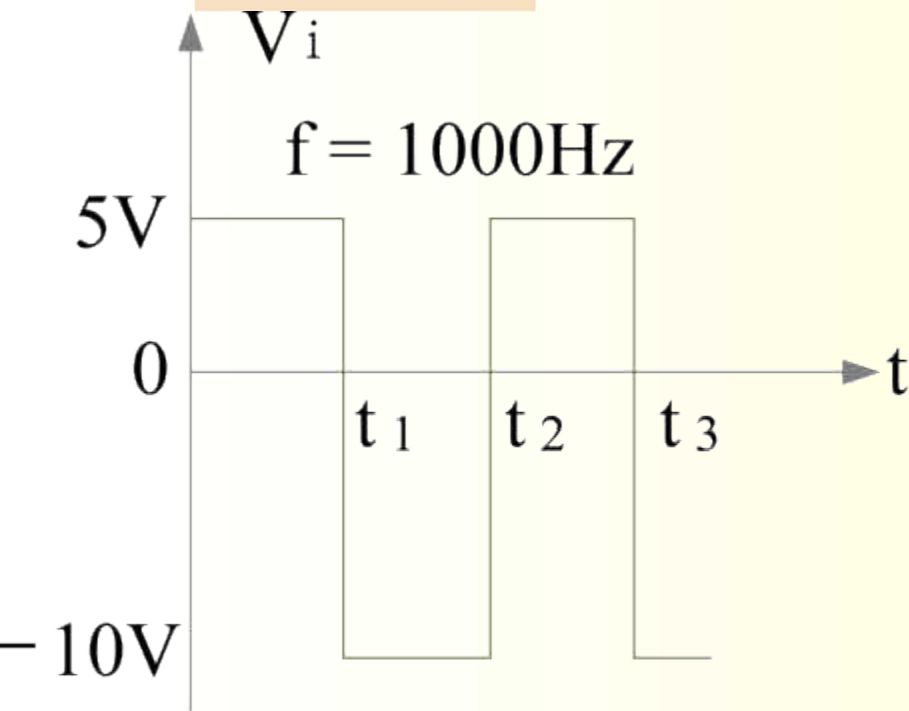
$$2V_m + V_1 = 10V$$

$$\text{輸出電壓為 } 2V \leq V_o \leq 10V$$

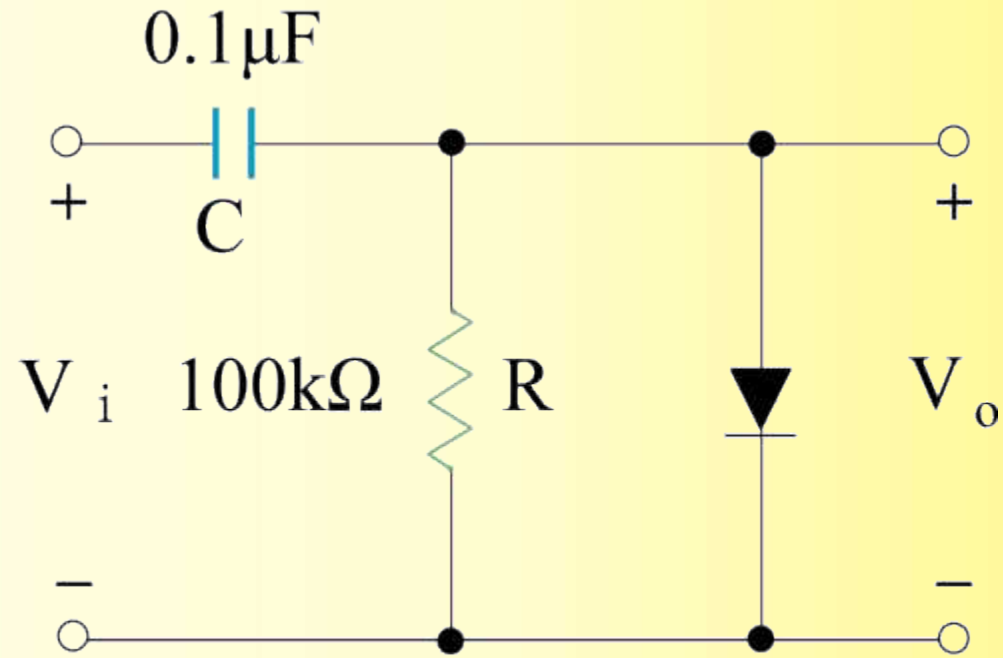
簡單型負箝位器



如圖所示之箝位器，(a) 為輸入波形，試繪出其輸出波形，並討論其 RC 時間常數是否足夠

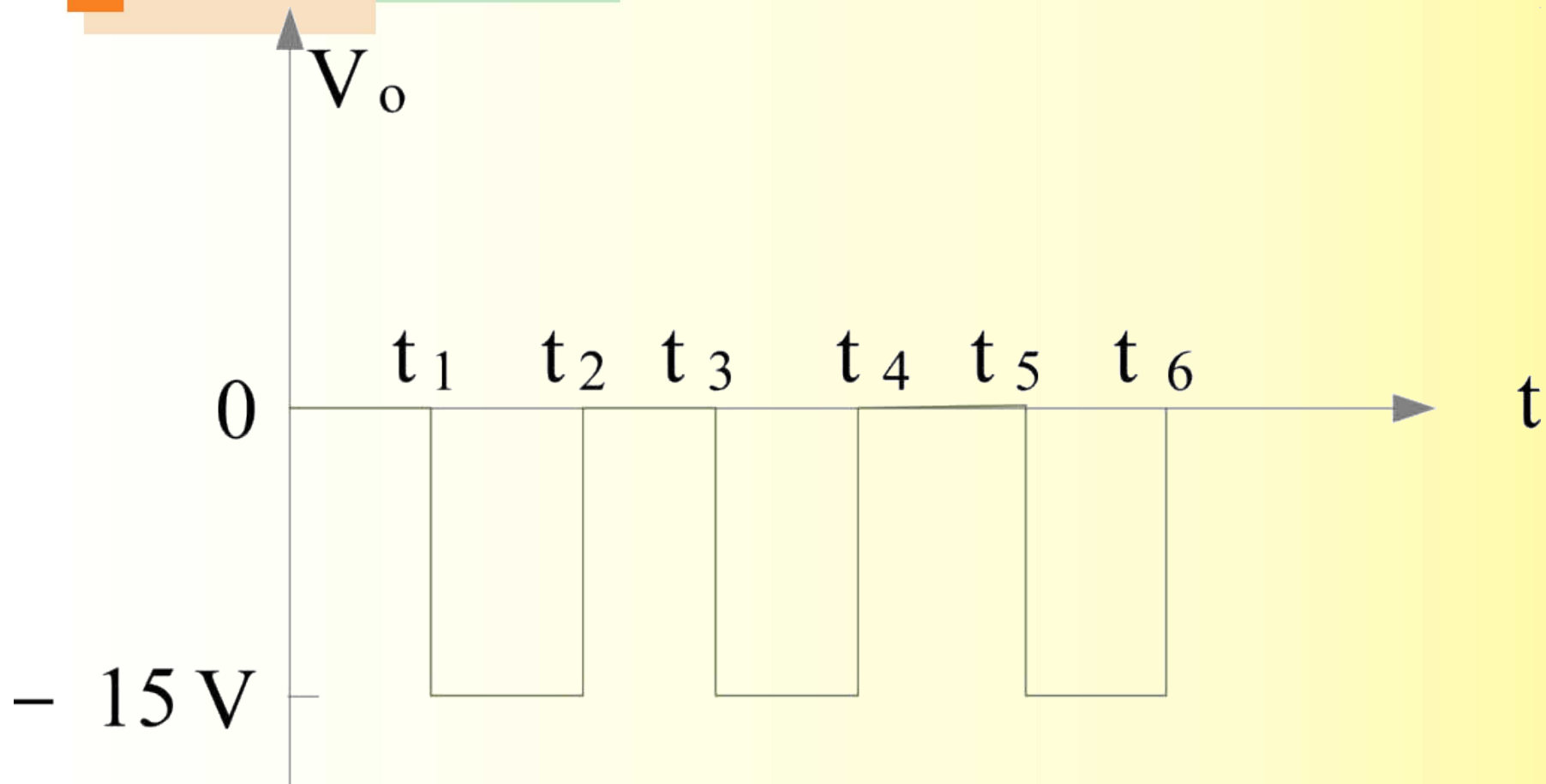


(a) 輸入波形



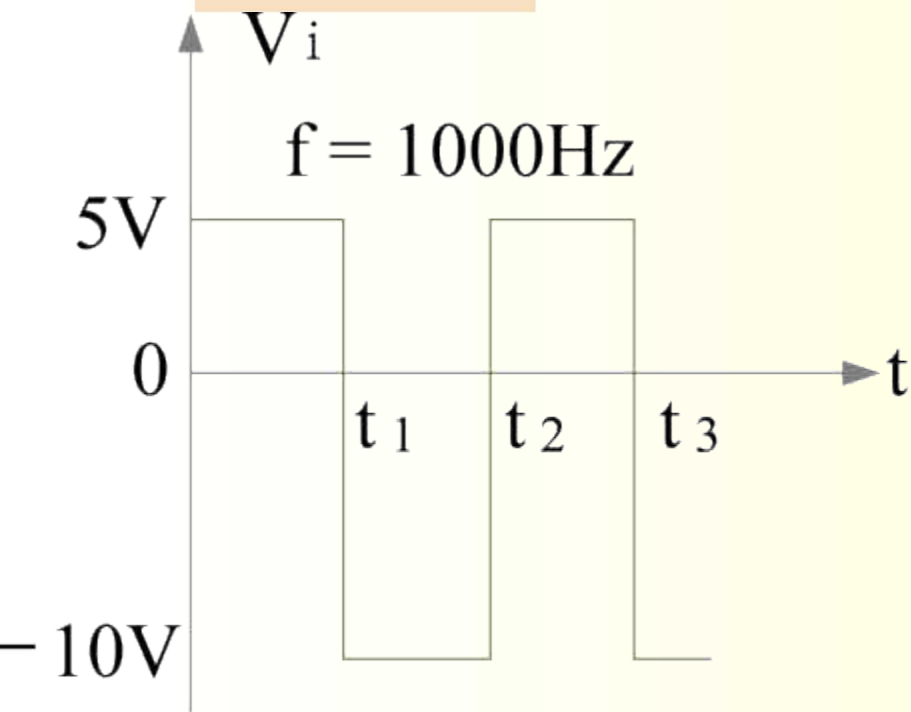
(b) 電路

輸出波形

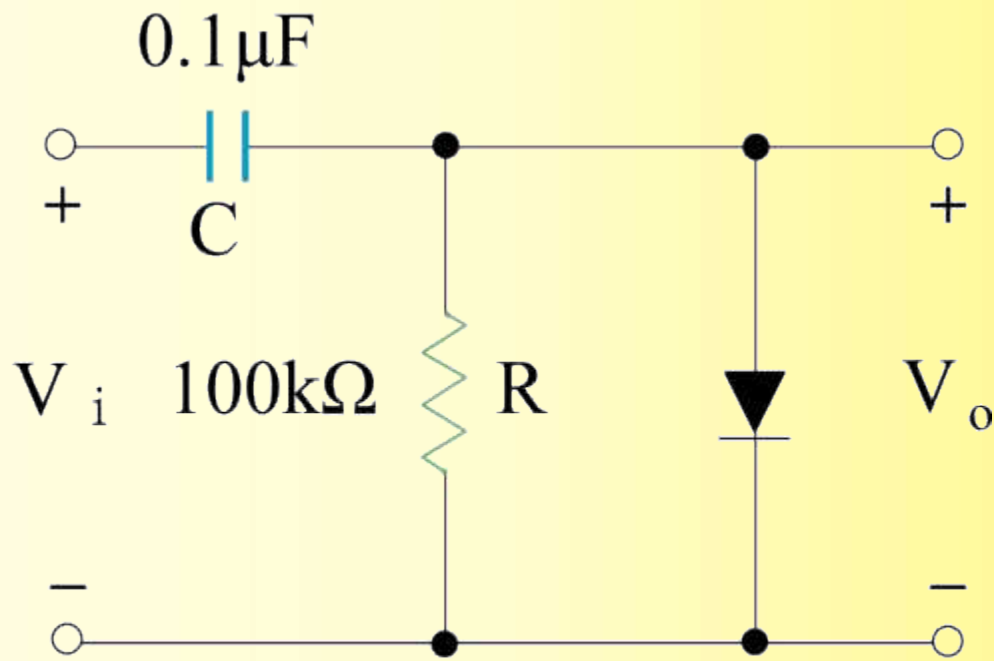


輸入波形與輸出波形的電壓振幅是相同的

如圖所示之箝位器，若電阻改為 $1\text{K}\Omega$ 時間常數是否足夠，其輸出波形將變為如何？

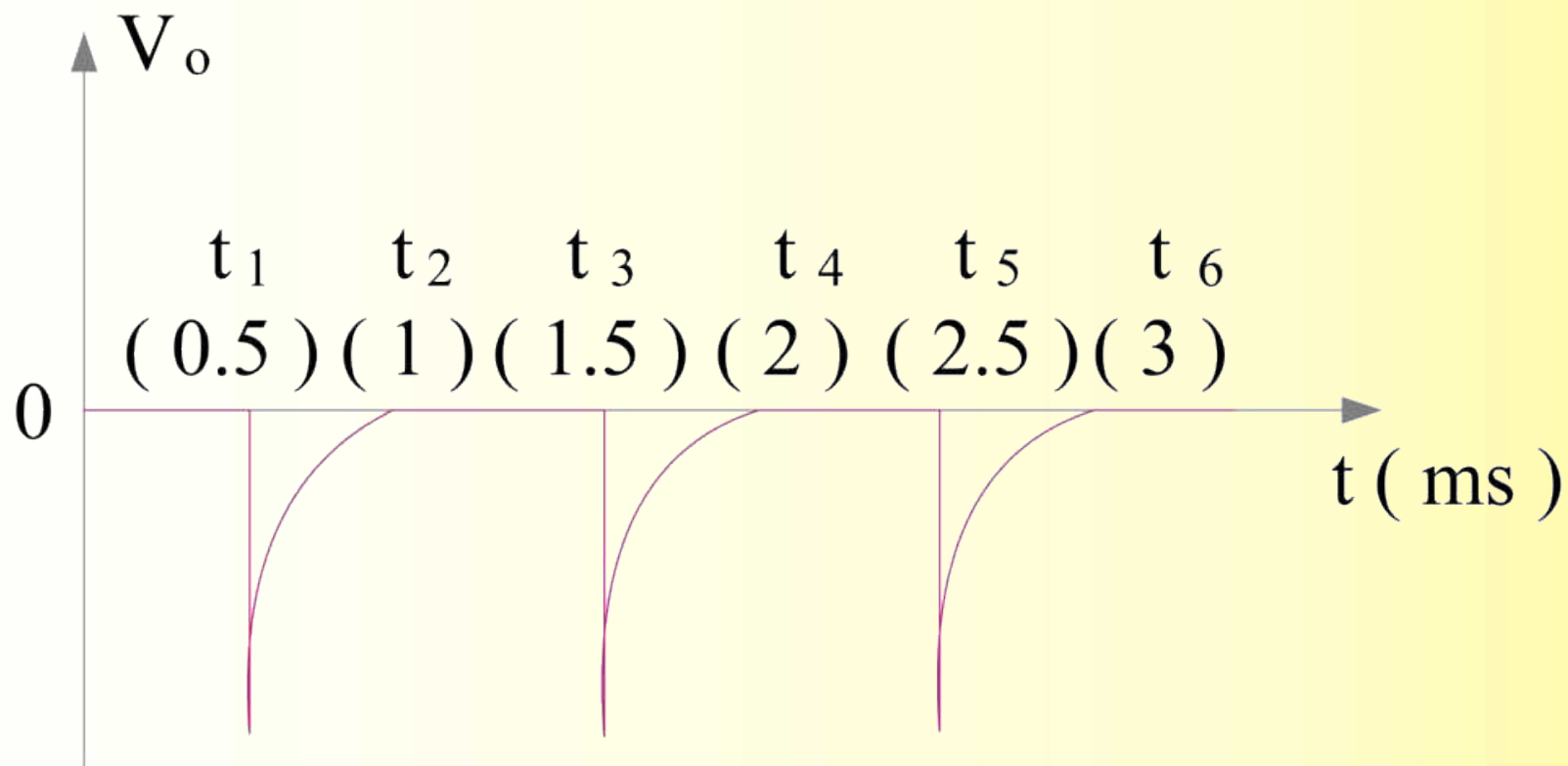


(a) 輸入波形

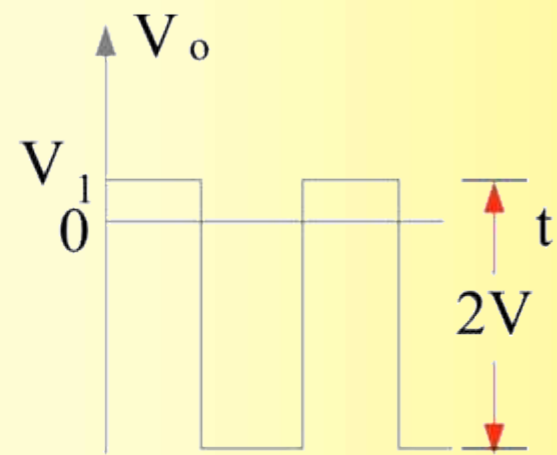
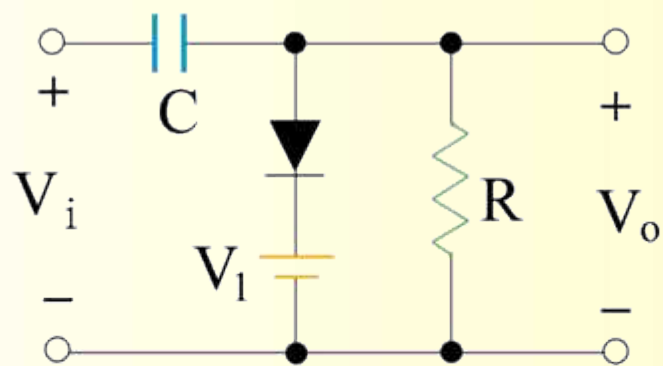
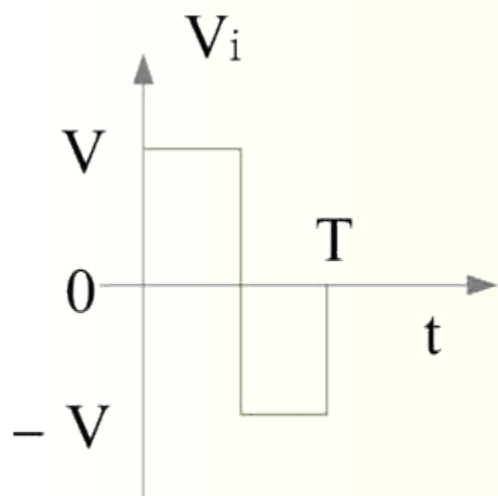


(b) 電路

輸出波形

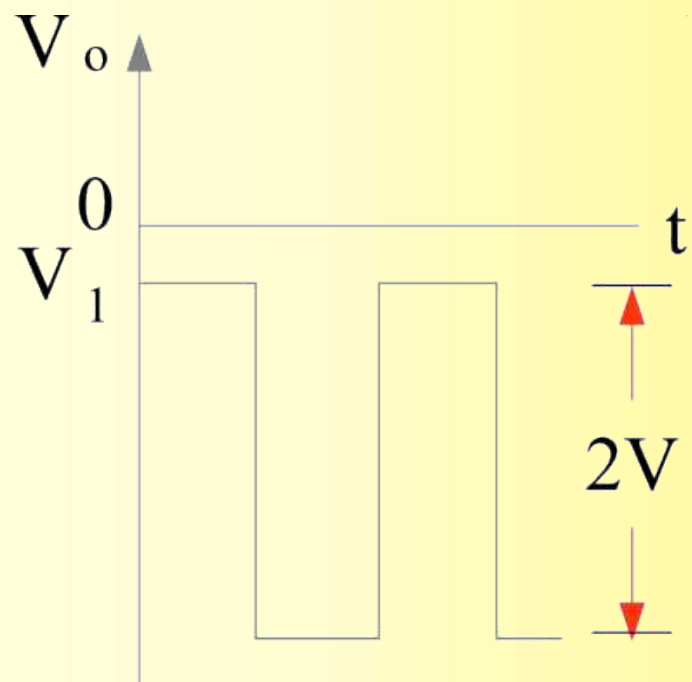
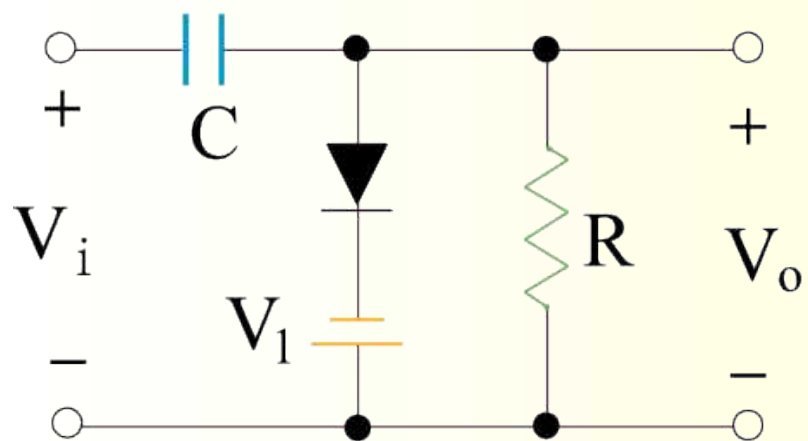


負箝位器



(a) 逆向偏壓型

負箝位器

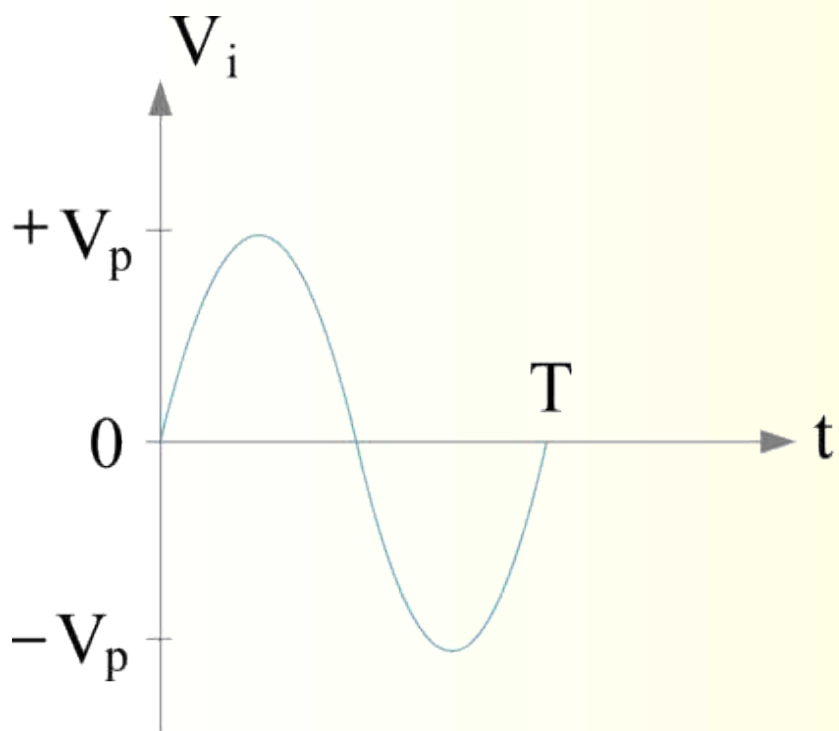


(b) 順向偏壓型

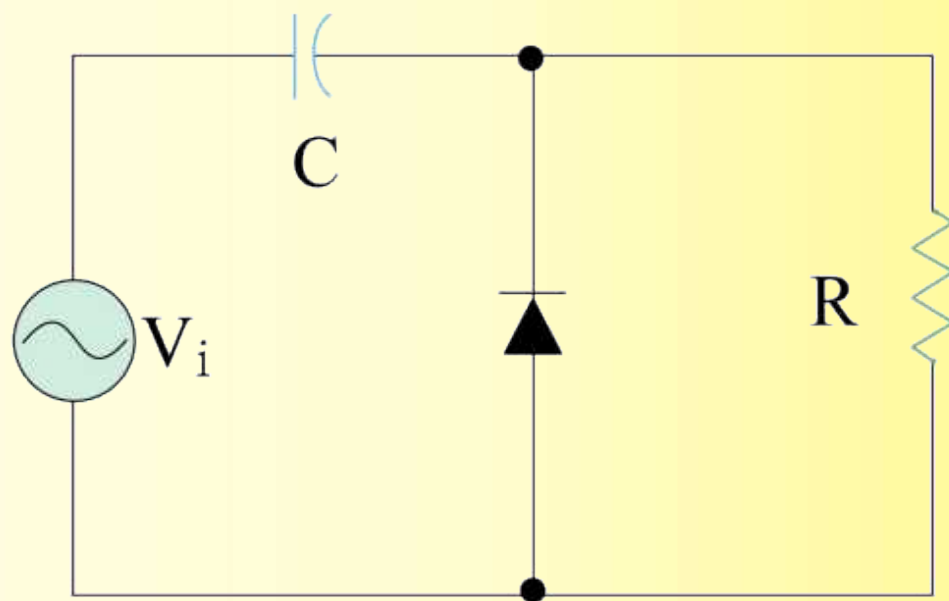
判斷輸出波形的簡易方法

- 參考電壓決定輸出波形的參考點
- 二極的方向決定波形的移動方向

正箝位器的操作

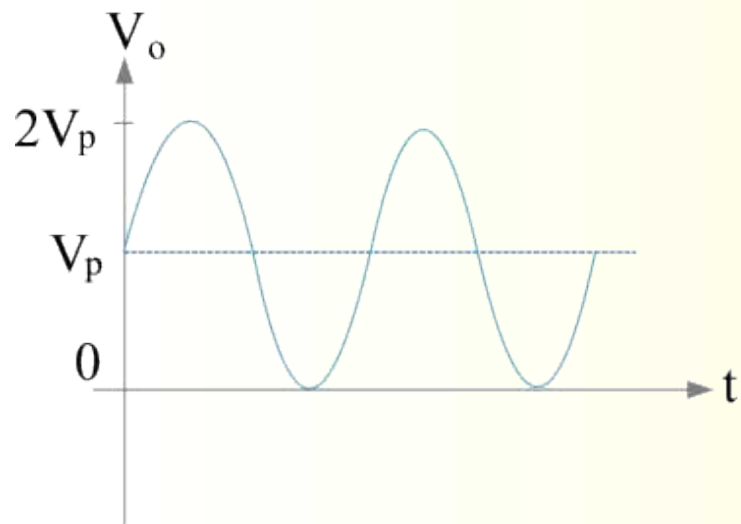


(a) 輸入波形

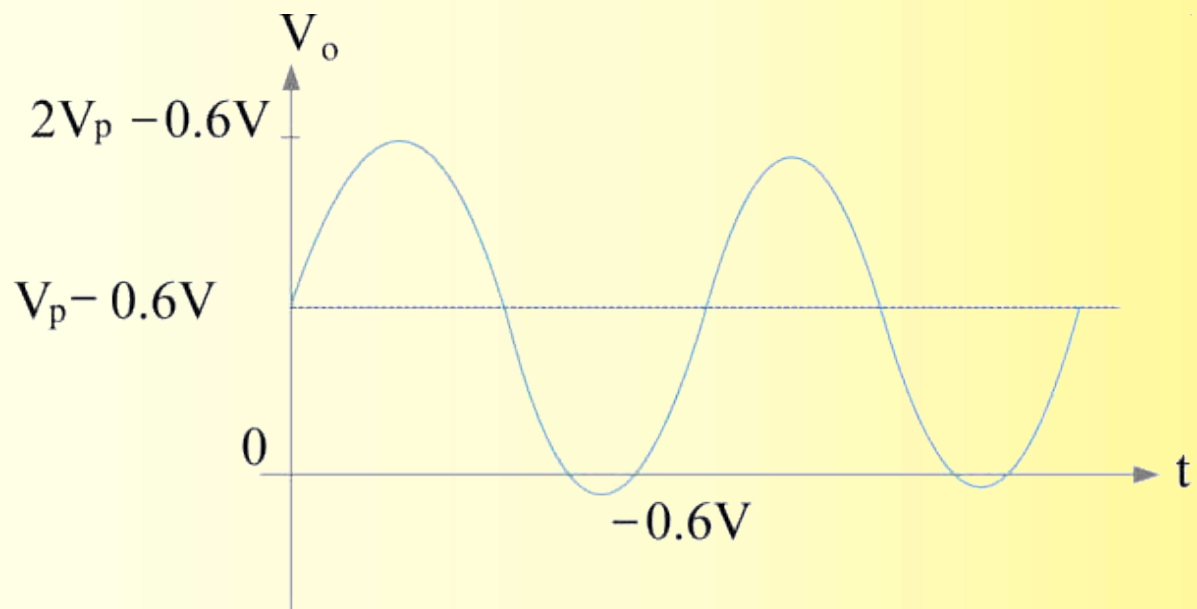


(b) 電路

正箝位器的操作 (續)

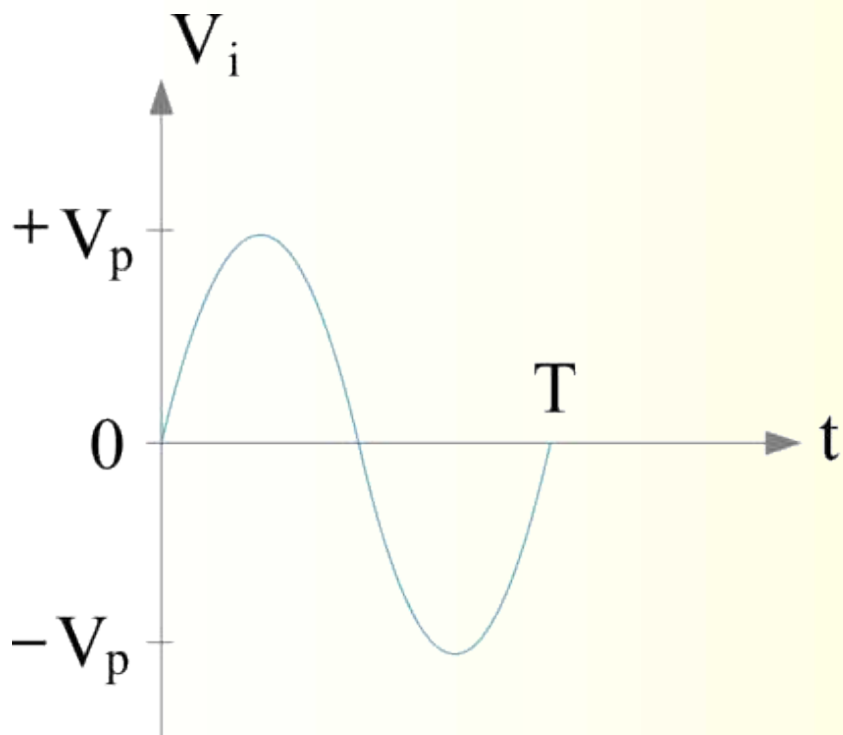


(c) 理想輸出波形

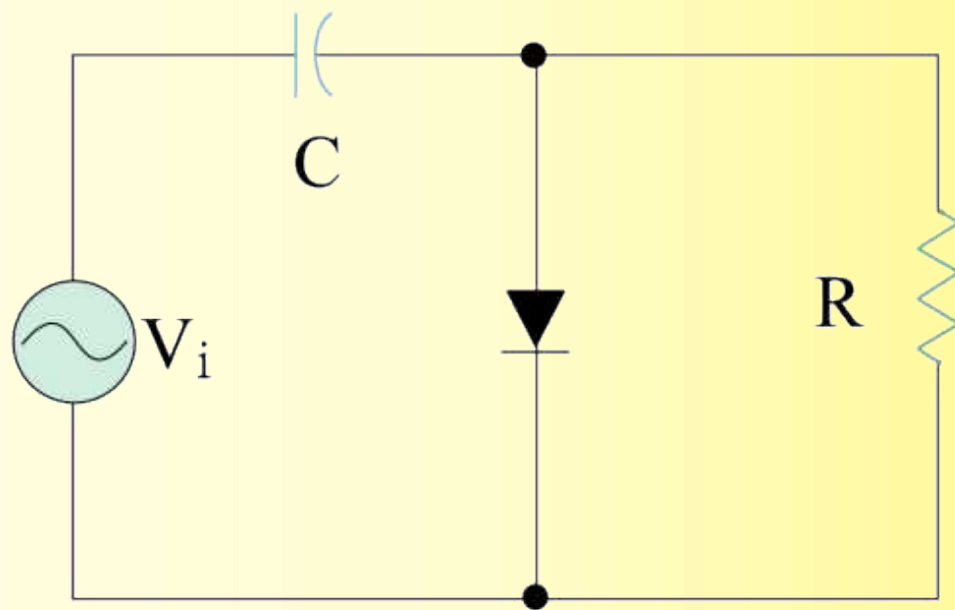


(d) 輸出波形(考慮切入電壓)

負箝位器的操作

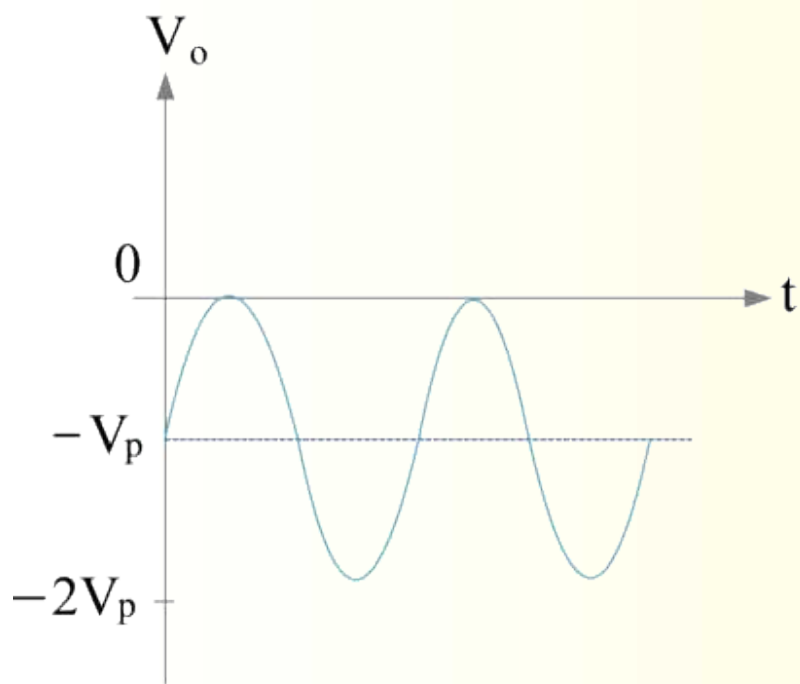


(a) 輸入波形

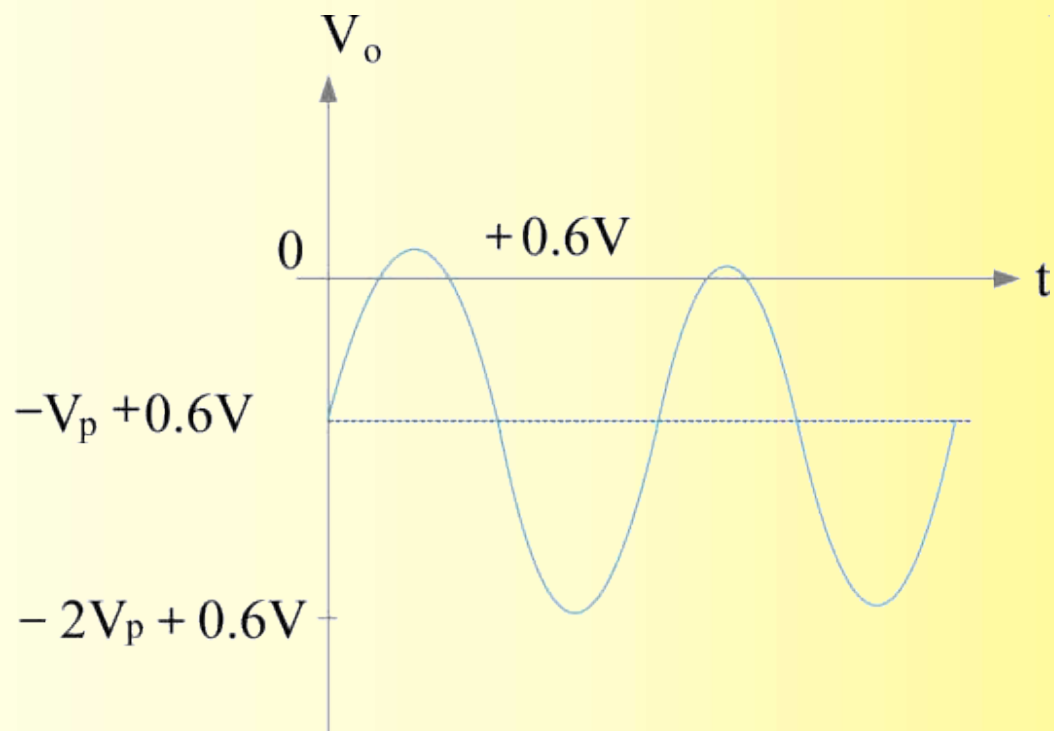


(b) 電路

負箝位器的操作

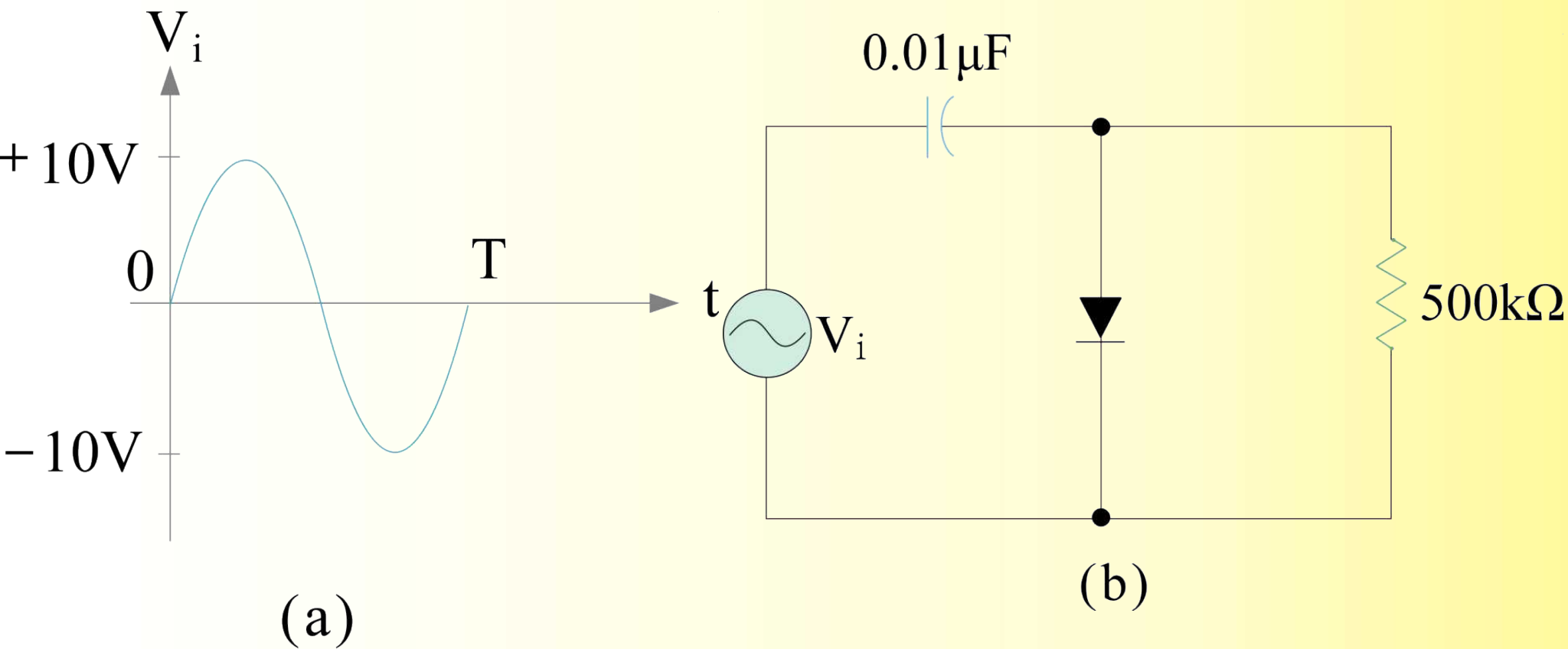


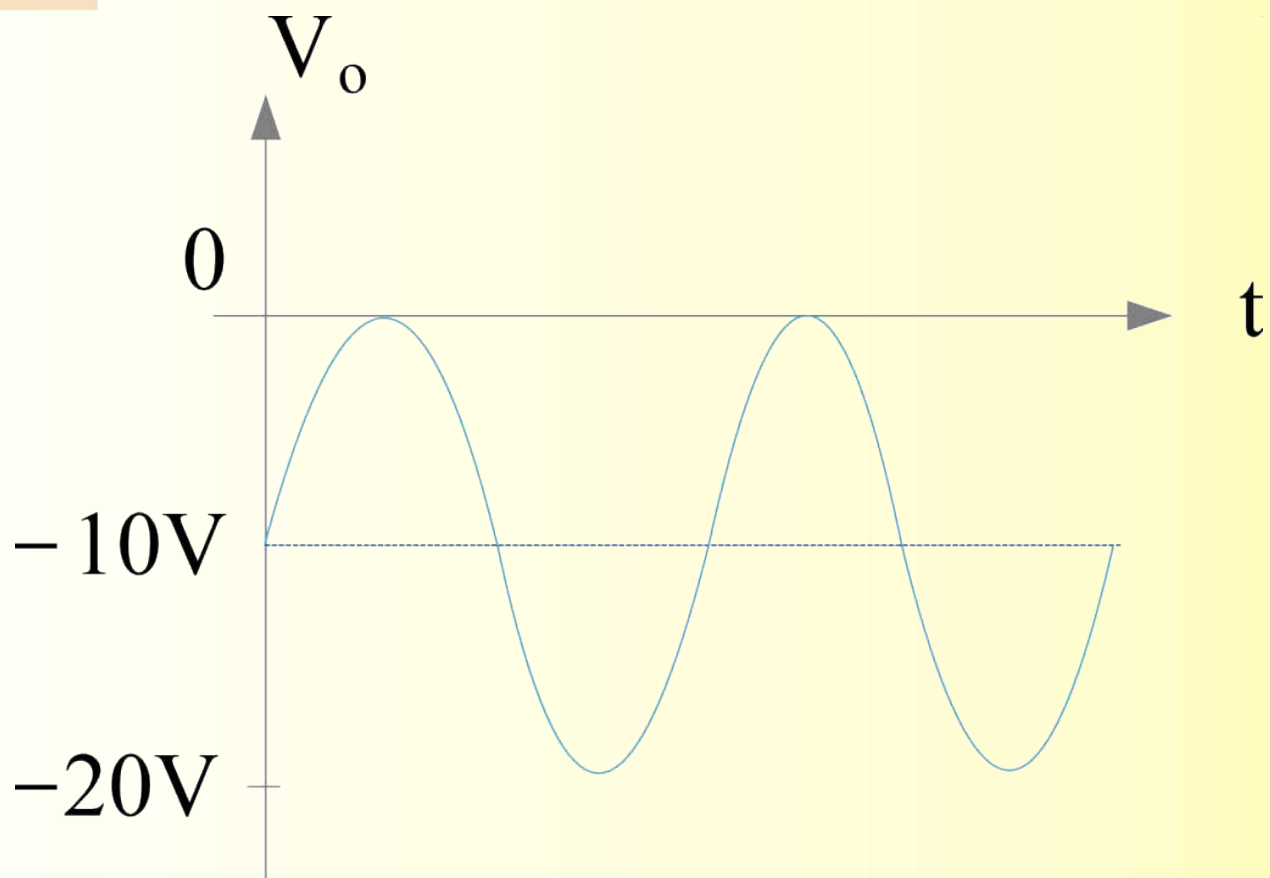
(c)理想二極體



(d)實際二極體(考慮切入電壓)

如圖所示電路，假設 RC 大到足以阻止電容放電，試分析其輸出波形





(c)

電視機內的箝位器 (直流重置器)

