電工概論與實習

第2章直流電源

2-2汽車電瓶

2-4串並聯電路

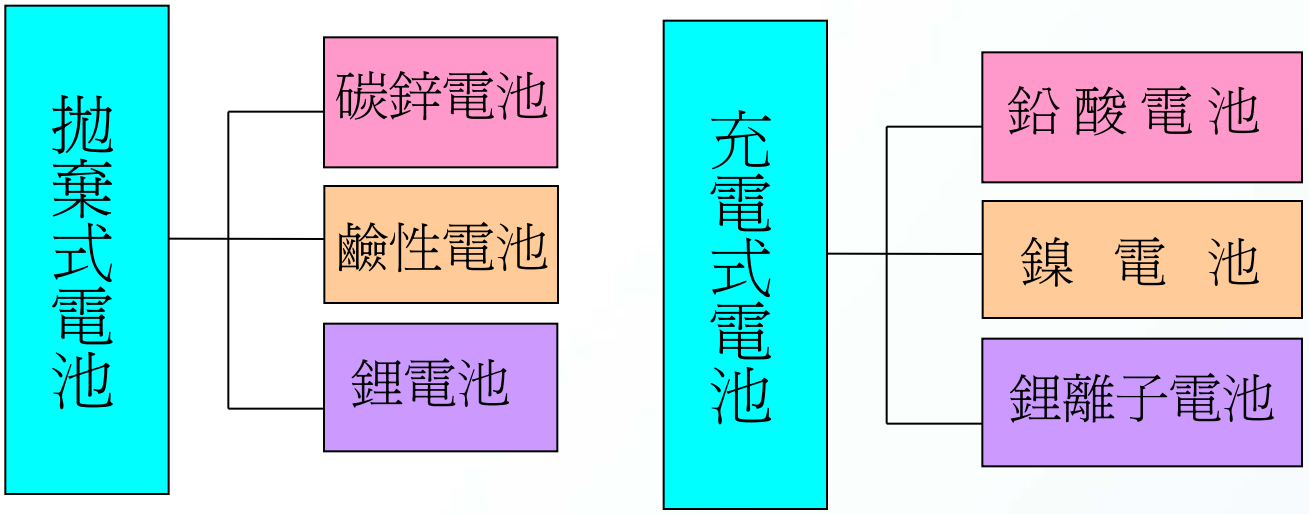
2-5克希荷夫定律

2-7電源供應器及麵包板說明

2-2

汽車電瓶

電池的型式



2-2 汽車電瓶

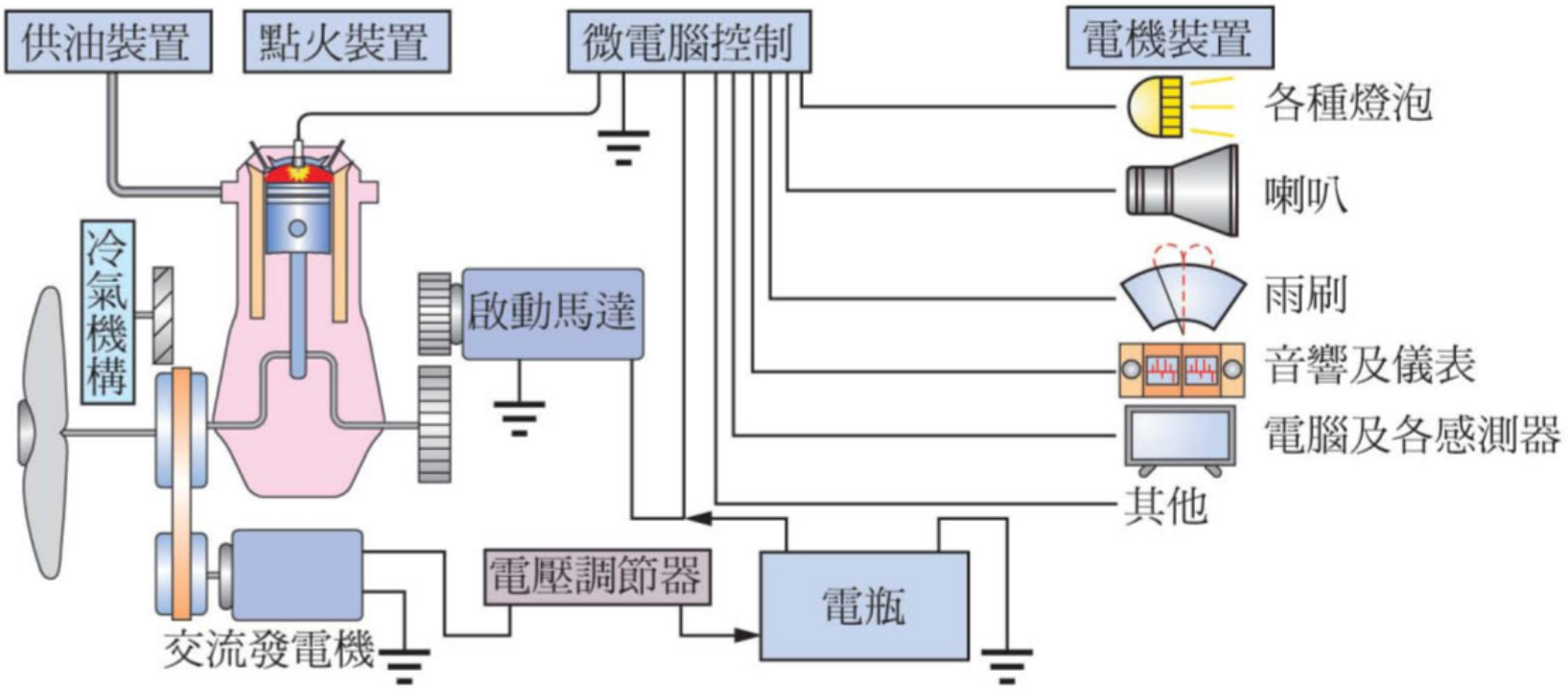
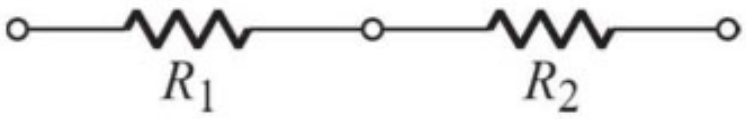


圖 2-3 汽車電瓶的電力輸出情形

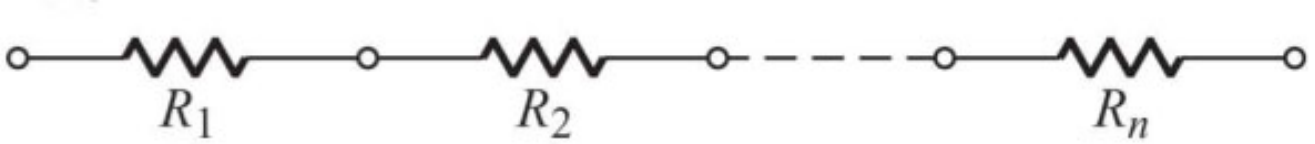
2-4 串並聯電路

電阻器

元件串聯之比較



$$R_T : R_T + R_2$$

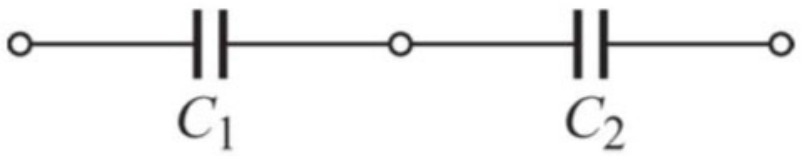


$$R_T = R_1 + R_2 + \cdots + R_n$$

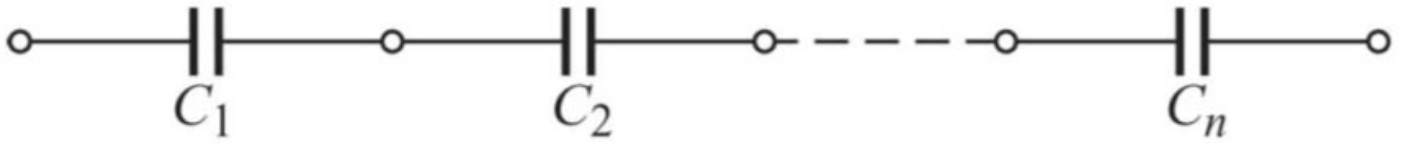
2-4 串並聯電路

電容器

元件串聯之比較



$$C_T = \frac{1}{C_1} + \frac{1}{C_2}$$

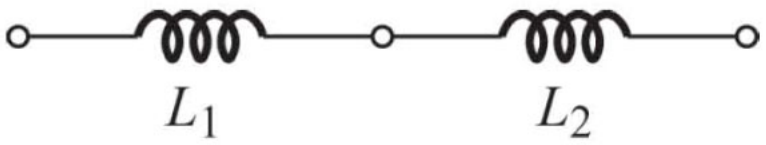


$$\frac{1}{C_T} = \frac{1}{C_1} + \frac{1}{C_2} + \cdots + \frac{1}{C_n}$$

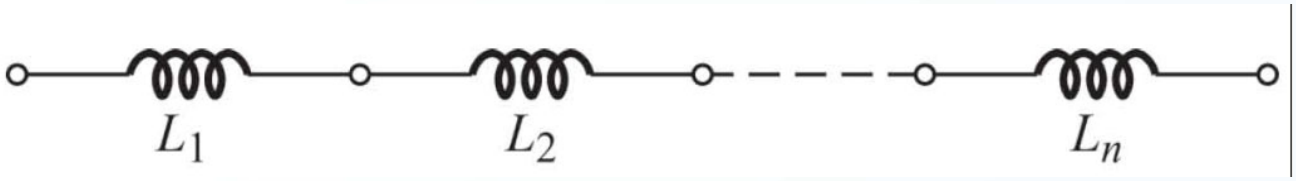
2-4 串並聯電路

電感器

元件串聯之比較



$$L_T = L_1 + L_2$$



$$L_T = L_1 + L_2 + \cdots + L_n$$

2-4 串並聯電路

電阻器

元件並聯之比較

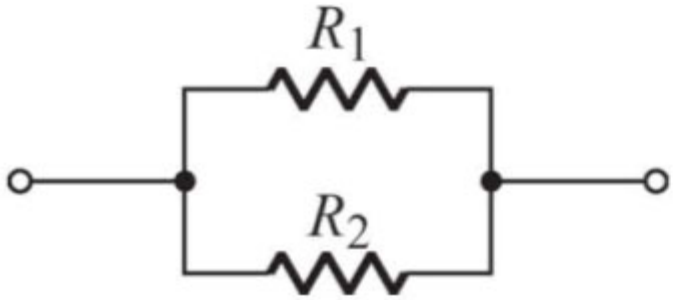


圖 2-8(a)

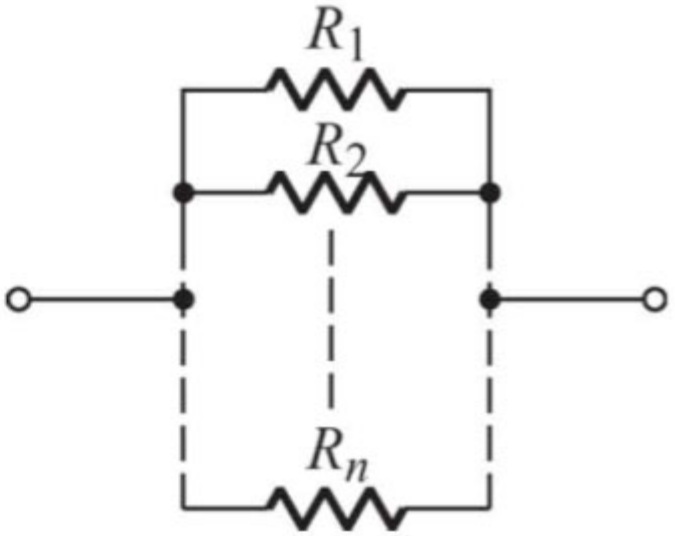


圖 2-8(b)

$$\frac{1}{R_T}=\frac{1}{R_1}+\frac{1}{R_2}$$

$$\frac{1}{R_T}=\frac{1}{R_1}+\frac{1}{R_2}+\cdots+\frac{1}{R_n}$$

2-4 串並聯電路

電容器

元件並聯之比較

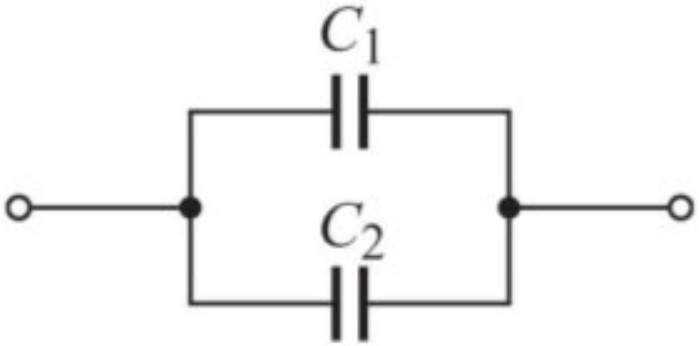


圖 2-9(a)

$$C_T = C_1 + C_2$$

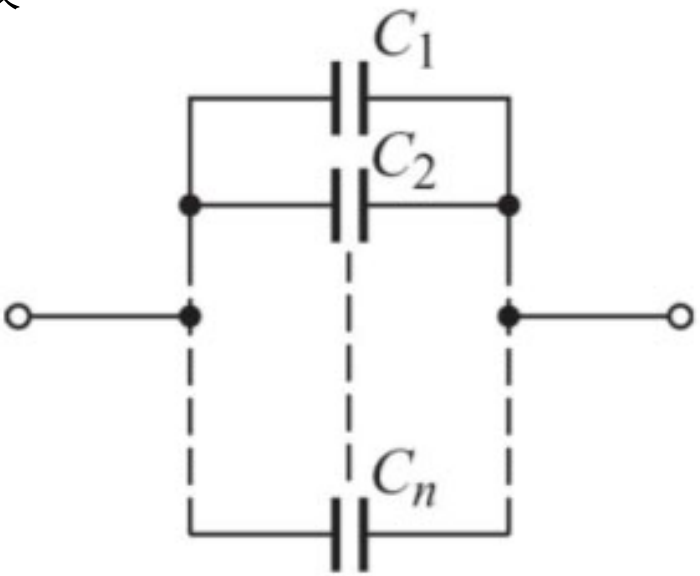


圖 2-9(b)

$$C_T = C_1 + C_2 + \cdots + C_n$$

2-4 串並聯電路

電容器

元件並聯之比較

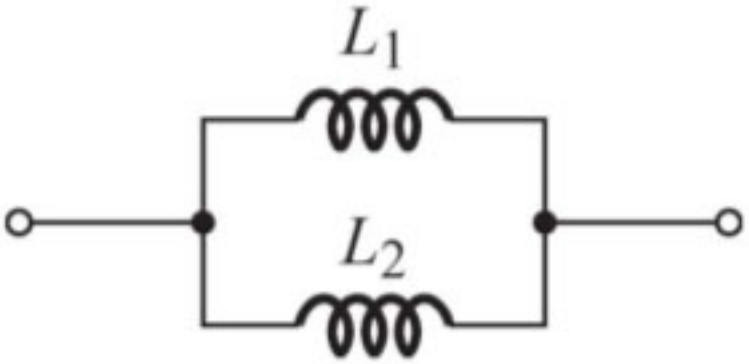


圖 2-10(a)

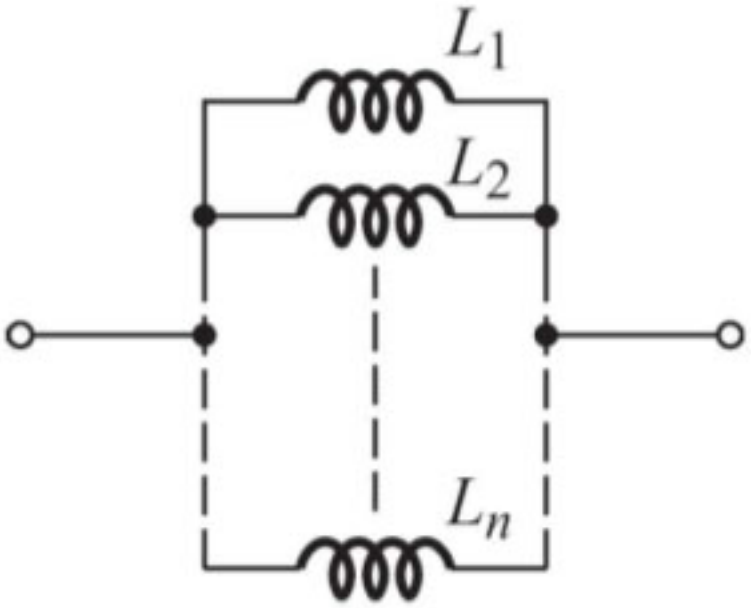


圖 2-10(b)

$$\frac{1}{L_T} = \frac{1}{L_1} + \frac{1}{L_2}$$

$$\frac{1}{L_T} = \frac{1}{L_1} + \frac{1}{L_2} + \cdots + \frac{1}{L_n}$$

2-5 克希荷夫定律

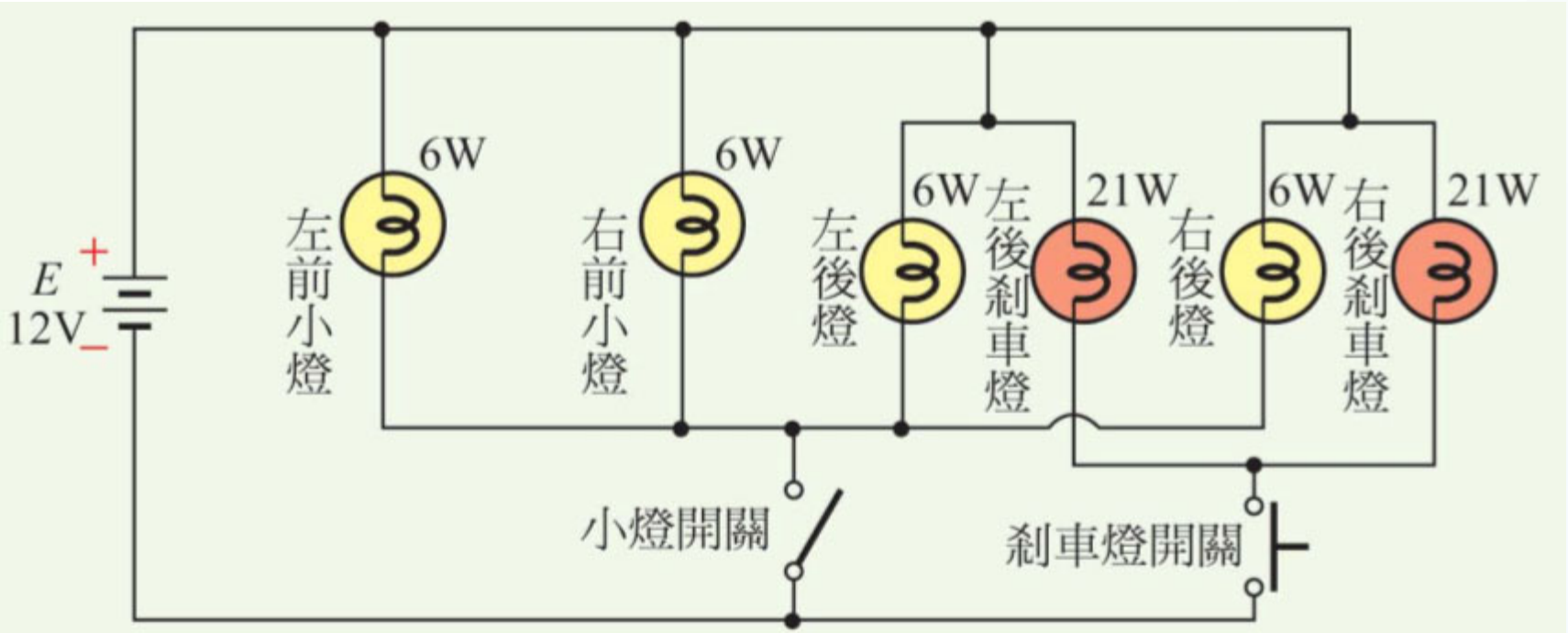


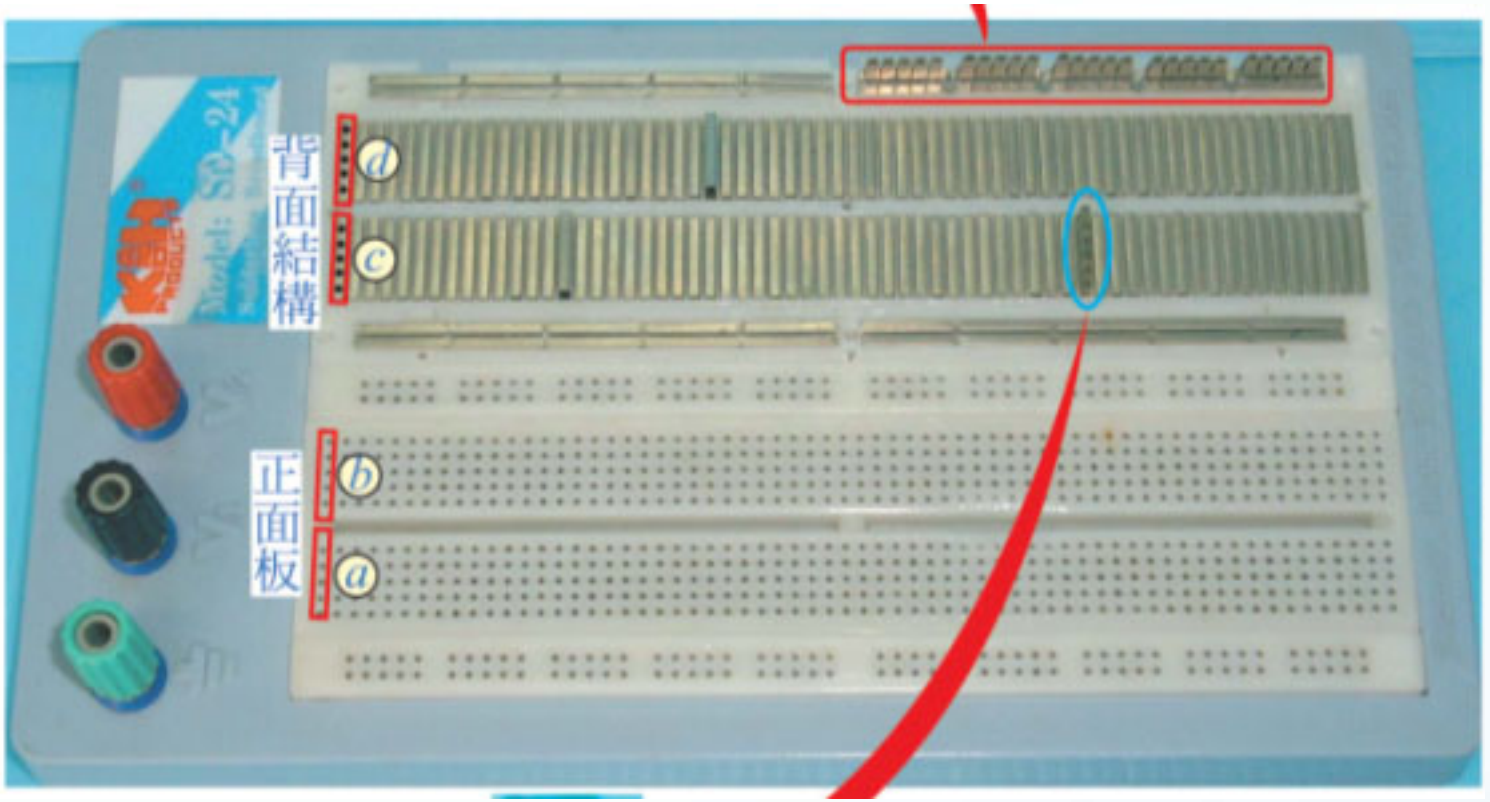
圖 2-14　汽車的小燈及剎車燈電路

2-7 電源供應器及麵包板說明

(A) 單電源操作時之面板：

電源供應器可提供單電源

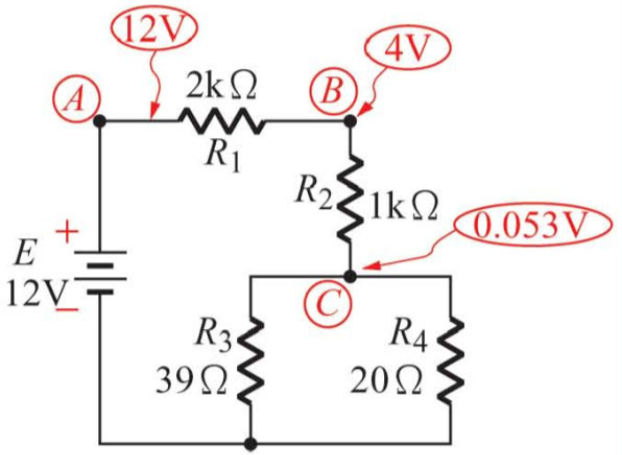
2-7 電源供應器及麵包板說明



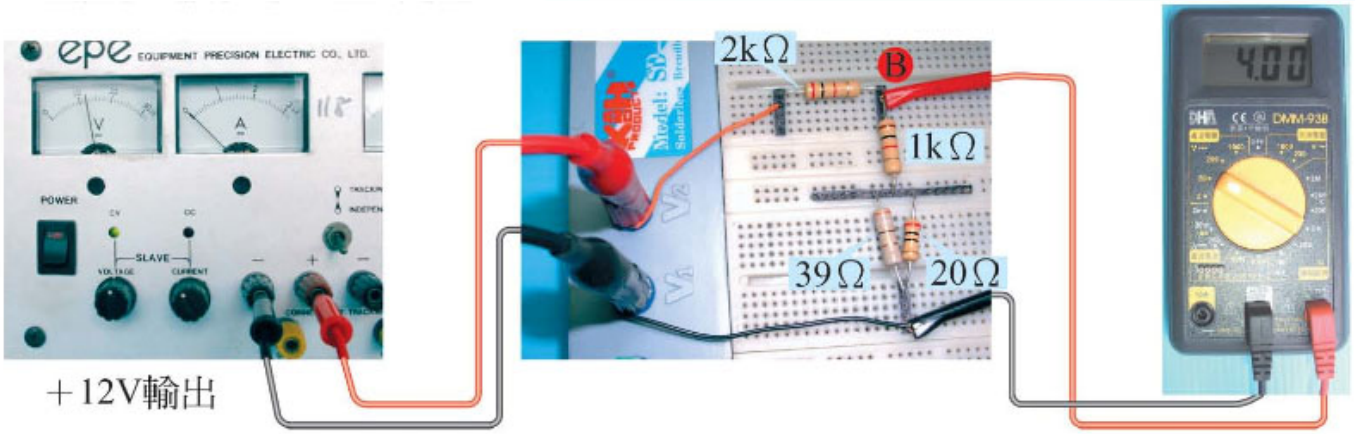
麵包板的構造

2-7

電源供應器及麵包板說明



(a) 電路上各點電壓值



(c) 量測Ⓑ點電壓的接線