

الاسم :

الرقم الجامعي :

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الساعة :

اليوم :

experiment : Ohm's law and the color code system

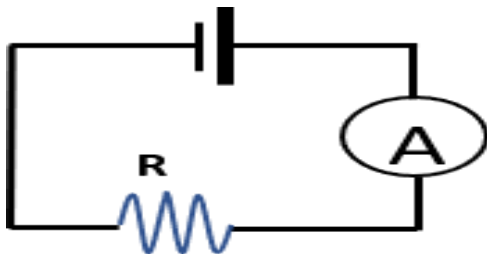
Purpose

- (1) To verify Ohm's Law.
- (2) To find The power dissipated by each resistor.
- (3) To study how to calculate the resistance using the color code.

Apparatus

Power Supply , 3 resistors , an ammeter , Wires

Circuits



Theory

A) Ohm's Law. When current I flows through a resistor (Fig. 1) then the **potential difference** V (often simply called voltage) between its terminals is proportional to I as in equation (1), where R is the resistance.

Equations

$$V = R \cdot I \quad \text{equation(1)}$$

$$p = R \cdot I^2 \quad \text{equation(2)}$$

$$(A \times 10 + B) \times 10^{\frac{C}{10}} \pm D\% \quad \text{equation(3)}$$

The equations symbols meaning

symbol	meaning	unit
V		
I		
R		
p		
A		
B		
C		
D		

Reading and Results

$R_1 =$ ohm $R_2 =$ ohm $R_3 =$ ohm

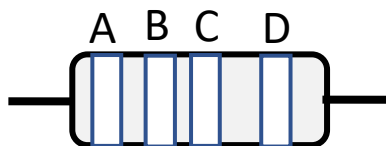
	V	5	10	15	20	25
R_1	I_1					
	P_1					
R_2	I_2					
	P_2					
R_3	I_3					
	P_3					

chose 4 colours for resistor 1 and 2 then use the equation

to find the resistors value

Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White	Gold	Silver
Digit	0	1	2	3	4	5	6	7	8	9	5%	10%

resistor 1

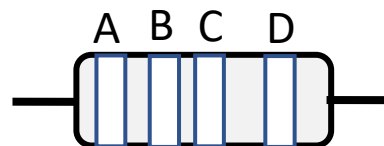


$$(A \times 10 + B) \times 10^C \pm D\%$$

1 st	2 nd	3 ^{ed}	4 th
A	B	C	D

R_1

resistor 2



$$(A \times 10 + B) \times 10^C \pm D\%$$

1 st	2 nd	3 ^{ed}	4 th
A	B	C	D

R_2