

Formula

<sup>TM</sup>  
**Seismo-Quake**

**LET IT SHAKE !**

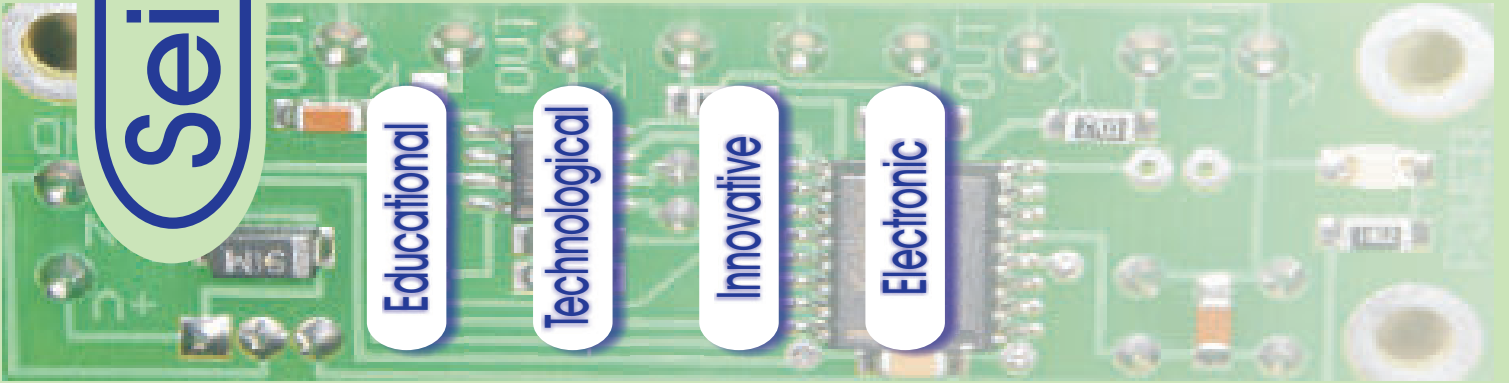
**Educational**

**Technological**

**Innovative**

**Electronic**

# FORMULA




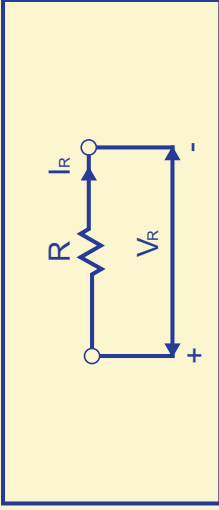

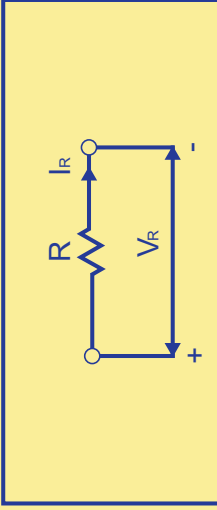

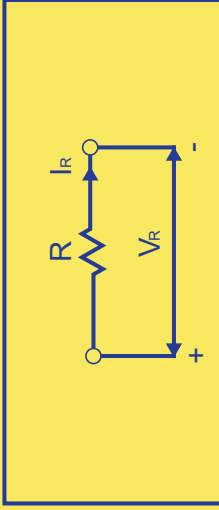
Formula

Seismo-Quake™

LET IT SHAKE!


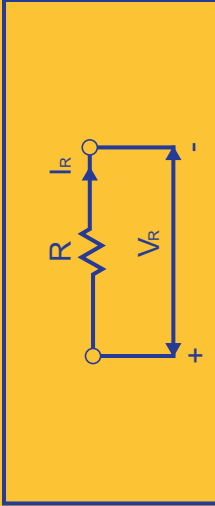
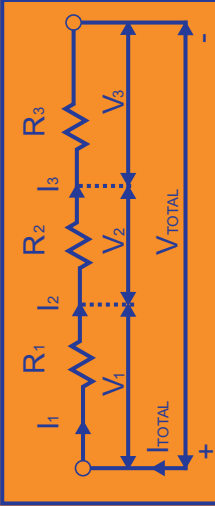
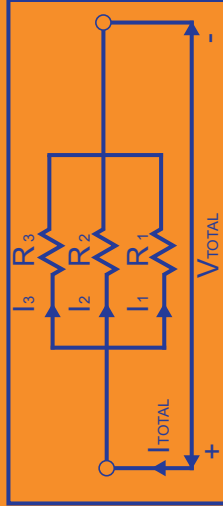
## FORMULA

Ohm
Volt
Ampere
Watt
Resistor
Capacitor





Description	Formula	Diagram
<p><b>Ohm's Law</b></p> <p>Ohm may be defined as the resistance of a conductor to a 1 volt voltage difference across the terminals to allow a current of 1 ampere to flow. The current that flows is proportional to the supply voltage and inversely proportional to the resistance.</p>	$R = \frac{V}{I}$ <p>R = Resistance measured in ohm</p> 	
<p><b>Volt</b></p> <p>Volt may be defined as the difference in electrical potential between two points on a conductor producing a power of 1 watt when a constant current of 1 ampere is flowing.</p>	$V = I \times R$ <p>V = Voltage measured in volt</p> 	
<p><b>Ampere</b></p> <p>Ampere may be defined as the current exercising a force of 2 x 10 Newton per meter on each of two conductors of endless length that is placed in a vacuum one meter apart.</p>	$I = \frac{V}{R}$ <p>I = Current measured in ampere</p> 	

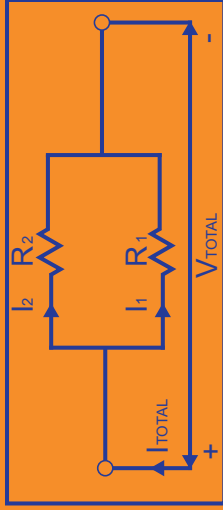
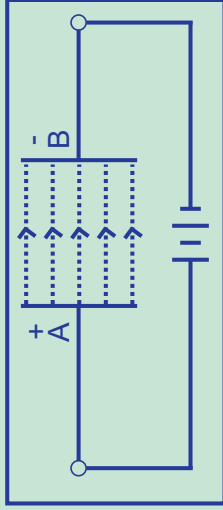
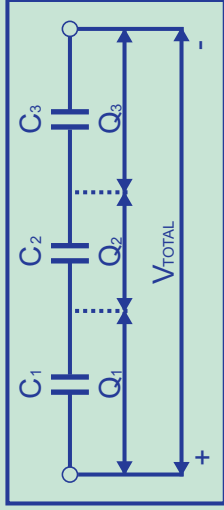
# FORMULA

Ohm
Volt
Ampere
Watt
Resistor
Capacitor

Description	Formula	Diagram
<b>Watt</b> Watt may be defined as the power that constitutes the production of energy at a rate of 1 Joule per second.	$P = \frac{V^2}{R}$ $P = I^2 \times R$ $P = V \times I$ 	
<b>Resistors in series</b> Kirchoff have proved the following: * The current value is the same through all the resistors. * A voltage drop exist across each resistor depending on the value of the resistor.	$R_{TOTAL} = R_1 + R_2 + R_3$ $I_{TOTAL} = I_1 = I_2 = I_3$ $V_{TOTAL} = V_1 + V_2 + V_3$	
<b>Resistors in parallel</b> * The voltage drop across each resistor is the same value. * The total current divides through each resistor depending on the value of the resistor.	$\frac{1}{R_{TOTAL}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ $I_{TOTAL} = I_1 + I_2 + I_3$ $V_{TOTAL} = V_1 = V_2 = V_3$	

# FORMULA

	Ohm
	Volt
	Ampere
	Watt
	Resistor
	Capacitor





Description	Formula	Diagram
<p><b>Resistors in parallel</b></p> <ul style="list-style-type: none"> <li>* When there are only two resistors connected in parallel, use the following formula.</li> <li>* The total resistance value of a parallel circuit is always less than the smallest resistance value in the circuit.</li> </ul>	$R_{TOTAL} = \frac{R_1 \times R_2}{R_1 + R_2}$	
<p><b>Factors influencing capacitance</b></p> <ul style="list-style-type: none"> <li>* The plate surface.</li> <li>* The distance between the plates.</li> <li>* The material used for the dielectric.</li> </ul> <p>An electric field exist between the charged plates A and B. The field direction is from plate A to plate B.</p>	<p>Intentionally Left Blank</p>	
<p><b>Capacitors in series</b></p> <ul style="list-style-type: none"> <li>* The charge across each capacitor is the same.</li> <li>* The total voltage divides across each capacitor depending on the value of the capacitor.</li> <li>* The total capacitance value decreases.</li> </ul>	$\frac{1}{C_{TOTAL}} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}$ $V_{TOTAL} = V_1 + V_2 + V_3$ $Q_{TOTAL} = Q_1 = Q_2 = Q_3$	

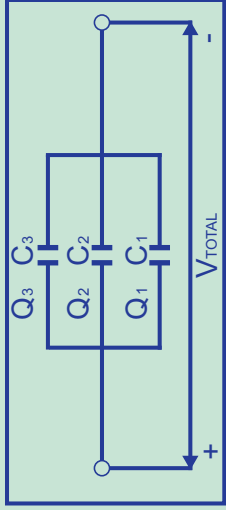
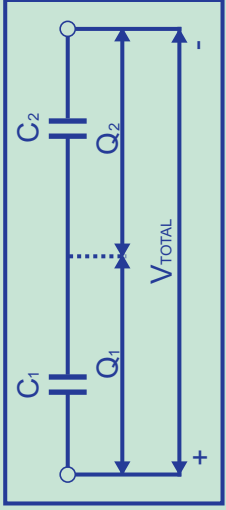
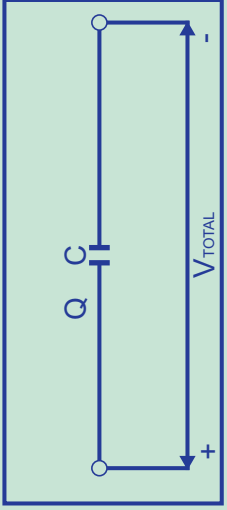
Formula

Seismo-Quake™

LET IT SHAKE!

## FORMULA

	Ohm
	Volt
	Ampere
	Watt
	Resistor
	Capacitor

Description	Formula	Diagram
<b>Capacitors in parallel</b> * The voltage drop across each capacitor is the same. * A charge exist across each capacitor depending on the value of the capacitor. * The total capacitance value increases.	$Q_{TOTAL} = Q_1 + Q_2 + Q_3$ $C_{TOTAL} = C_1 + C_2 + C_3$ $V_{TOTAL} = V_1 = V_2 = V_3$	
<b>Capacitors in series</b> * When there is only two capacitors connected in series, use the following formula.	$C_{TOTAL} = \frac{C_1 \times C_2}{C_1 + C_2}$	
<b>Charge in a capacitor</b> * Coulomb is the electrical quantity for energy and is the quantity of electrons flowing through a specific point when a current of 1 ampere flows for 1 second.	$Q = V \times C$ $C = \frac{Q}{V}$	

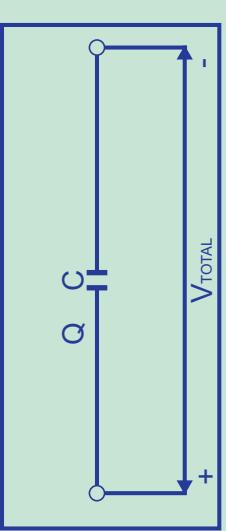
Formula

LET IT SHAKE!

Seismo-Quake™

## FORMULA

	Ohm
	Volt
	Ampere
	Watt
	Resistor
	Capacitor

Description	Formula	Diagram
<p><b>Charge in a capacitor</b></p> <p>* Farad is capacitance that need a voltage difference of 1 volt between the plates to allow a charge of 1 coulomb.</p>	$W = \frac{1}{2} C \times V^2$ $W = \frac{1}{2} Q \times V$ <p>W = Energy measured in joules</p>	

**Formula**

# Seismo-Quake™

# LET IT SHAKE!

**Educational**

**Technological**

**Innovative**

**Electronic**

## Contact Details for Seismo-Quake™

### Information

Website

[www.seismoquake.com](http://www.seismoquake.com)

Postal

P.O. Box 773  
Silverton  
0127  
South Africa

Seismo-Quake™ is registered in the SA Department of Trade and Industry.  
All other product or service names are the property of their respective owners.  
Copyright © Seismo-Quake™ 2008. All Rights Reserved.  
SQ\_FO\_DCELECFORMULA/D  
Rev. 1 Page 7 of 7 pages