

How does a resistor affect a battery?

Basically, a resistor limits the flow of charge in a circuit and is an ohmic device where $V = IR$. Most circuits have more than one resistor. If several resistors are connected together and connected to a battery, the current supplied by the battery depends on the equivalent resistance of the circuit.

Will external resistor be ignored if a battery has a higher resistance?

A short answer anyway is that if external resistor is much higher than the internal resistance of batteries (i.e 0.1Ω), then ignored. @NickAlexeev no, it won't. Read carefully: the question is about parallel batteries, not series batteries: "positive to positive and negative to negative".

Can a circuit have more than one resistor?

Most circuits have more than one resistor. If several resistors are connected together and connected to a battery, the current supplied by the battery depends on the equivalent resistance of the circuit. The equivalent resistance of a combination of resistors depends on both their individual values and how they are connected.

What is a resistor in current and resistance?

In Current and Resistance, we described the term 'resistance' and explained the basic design of a resistor. Basically, a resistor limits the flow of charge in a circuit and is an ohmic device where $V = IR$. Most circuits have more than one resistor.

How many resistors does a 9 volt battery have?

A battery with a terminal voltage of 9 V is connected to a circuit consisting of four 20Ω and one 10Ω resistors all in series (Figure 10.3.3). Assume the battery has negligible internal resistance. Calculate the equivalent resistance of the circuit. Calculate the current through each resistor. Calculate the potential drop across each resistor.

What happens if you put a resistor across a power supply?

If the resistor was placed across the power supply alone, with a very low value, the high current draw could melt a fuse or create a short circuit, damaging the electric supply. It is possible to combine multiple cells together in a circuit to produce a battery. The properties of the battery depend on how the cells are connected together.

The power dissipated by resistors is in the form of heat, and this can be usefully harnessed in heaters, such as kettles and other heating elements, such as those in car windscreens, or ...

A circuit is constructed using two batteries and three resistors as shown in the figure. The batteries have voltages $V_{(a)} = 4.5\text{V}$. and $V_{(b)} = 1.5\text{V}$. The resistors have resistances $R_{(1)} = 8.0\Omega$, $R_{(2)} = 10\Omega$, and ...

Question: Two ideal batteries are connected in series with two resistors, as shown in the figure above. Assume $R_1=2\Omega$, $R_2=10\Omega$, $\mathcal{E}_1=19\text{V}$ and $\mathcal{E}_2=4\text{V}$. Find: a) the current in the circuit: b) the power dissipated by each resistor: $R_1 : R_2$: c) the power delivered by each battery (positive if the battery supplies power; negative if ...

Resistors connected in a series circuit: Three resistors connected in series to a battery (left) and the equivalent single or series resistance (right). Using Ohm's Law to Calculate Voltage ...

2 ???· In a given network of resistors and batteries the value of $V_A - V_B$ is Picture of a circuit diagram with resistors and batteries There are two loops The left loop has a 2 resistor at the top a 3. StudyX 4. The value of the unknown node voltage V_1 in the following circuit is Circuit diagram showing a network of resistors and current sources (1 ...

A circuit is constructed using two batteries and three resistors as shown in the figure. The batteries have voltages $V_a=6.0\text{V}$ and $V_b=1.5\text{V}$. The resistors have resistances $R_1=8.0\Omega$, $R_2=10\Omega$, and $R_3=12\Omega$. Define the positive ...

Cell or battery capacity is determined by a cell that is fully charged to the maximum voltage and taper current and then discharged to the cut-off voltage at a specific rate, typically $C/2$ or $C/5$. A $C/2$ discharge rate for a 1 Ah battery would be 0.5 A for two hours until the cut-off voltage.

Figure (PageIndex{12}): This circuit consists of three resistors and two batteries connected in series. Note that the batteries are connected with opposite polarities. Strategy. This circuit can ...

Along a closed loop of an electrical circuit, the sum of voltage drops on the circuit elements resistors, diodes, capacitors, etc equals to the sum of the electromotive forces of batteries ...

Most circuits have more than one resistor. If several resistors are connected together and connected to a battery, the current supplied by the battery depends on the equivalent ...

18 36 Three batteries and three identical resistors are connected in a circuit PQR, as shown. The batteries have negligible internal resistance. What is the potential difference between points P and Q? A 1.5 V B 2.1 V C ...

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