

# Circuits

## SAMPLE T-1

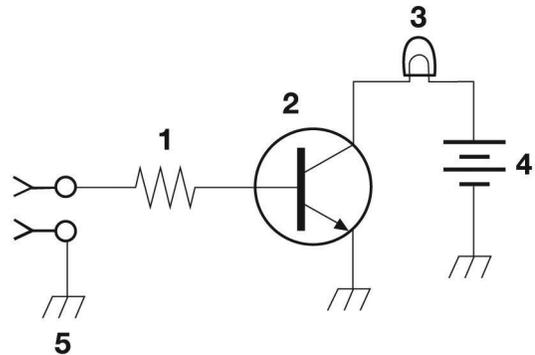
**Schematic symbols** is the name for standardized representations of components in an electrical wiring diagram. (T6C01) Figure T1 is a schematic diagram of a simple circuit that turns on a lamp when a positive voltage is applied to the input.

Component 1 in Figure T1 is a **resistor**. (T6C02) Its function is to limit the input current.

Component 2 in Figure T1 is a **transistor**. (T6C03) Its function is to switch the current through the lamp on and off. The function of component 2 in Figure T1 is to **control the flow of current**. (T6D10)

Component 3 in Figure T1 is the **lamp**. (T6C04)

Component 4 in Figure T1 is a **battery**. (T6C05) This battery supplies the current that lights the lamp.



**Figure T-1**

### **REVIEW QUESTIONS: (6)**

T6C01	T6C02	T6C03	T6D10	T6C04	T6C05
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## SAMPLE T-2

The circuit shown in Figure T2 is a simple power supply.

Component 2 is a fuse. Component 3 in Figure T2 represents a single-pole single-throw switch. (T6D03) It turns the power supply on and off.

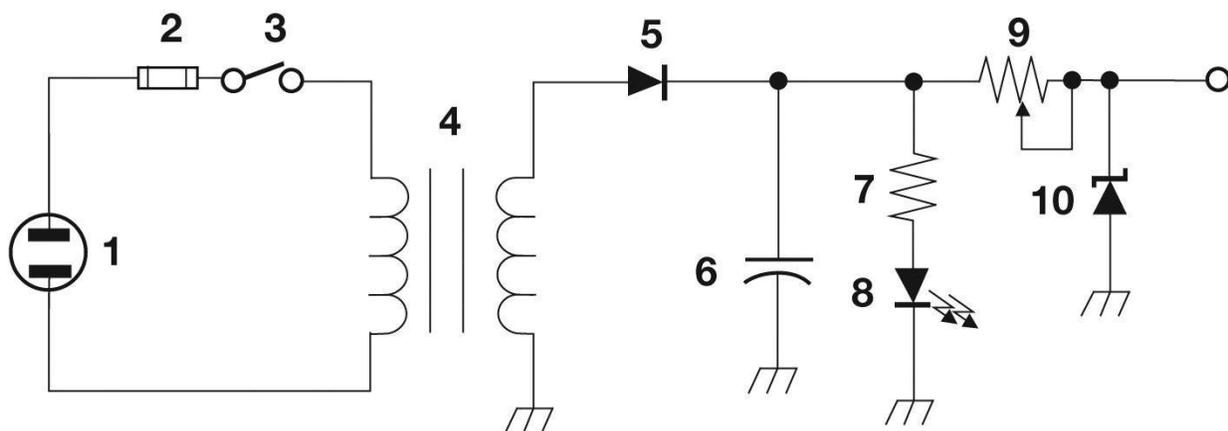
Component 4 in Figure T2 is a transformer. (T6C09) A transformer is commonly used to change 120V AC house current to a lower AC voltage for other uses. (T6D06)

A rectifier changes an alternating current into a varying direct current signal. (T6D01)

Component 5 in Figure T2 is a rectifier diode. Component 6 in Figure T2 is a capacitor. (T6C06)

It is a filter capacitor, whose function is to help filter out the 60 Hz component of the rectified AC. Component 8 in Figure T2 is a light emitting diode. (T6C07). It is a pilot light, serving to alert a user when the power supply is on.

Component 9 in Figure T2 is a variable resistor, or potentiometer. (T6C08) Its purpose is to limit the output current of the supply.



**Figure T-2**

### **REVIEW QUESTIONS: (7)**

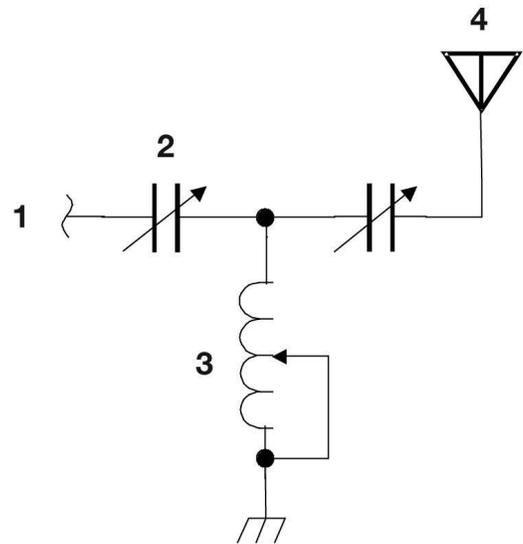
T6D03	T6C09	T6D06	T6D01	T6C06	T6C07	T6C08
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### SAMPLE T-3

The circuit shown in Figure T3 is the output circuit of a transmitter. Component 3 in Figure T3 is a variable inductor. (T6C10)

There are two variable capacitors in this circuit — component 2 and the unlabeled component. A capacitor is used together with an inductor to make a tuned circuit. (T6D08)

Component 4 in Figure T3 is an antenna. (T6C11)  
An inductor and a capacitor connected in series or parallel to form a filter is a simple resonant or tuned circuit. (T6D11) When the capacitor and inductor are connected in series, the circuit has very low impedance at the resonant frequency. When the capacitor and inductor are connected in parallel, the circuit has very high impedance at the resonant frequency.



**Figure T-3**

#### **REVIEW QUESTIONS: (4)**

T6C10	T6D08	T6C11	T6D11
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