

Diode Troubleshooting

Objectives:

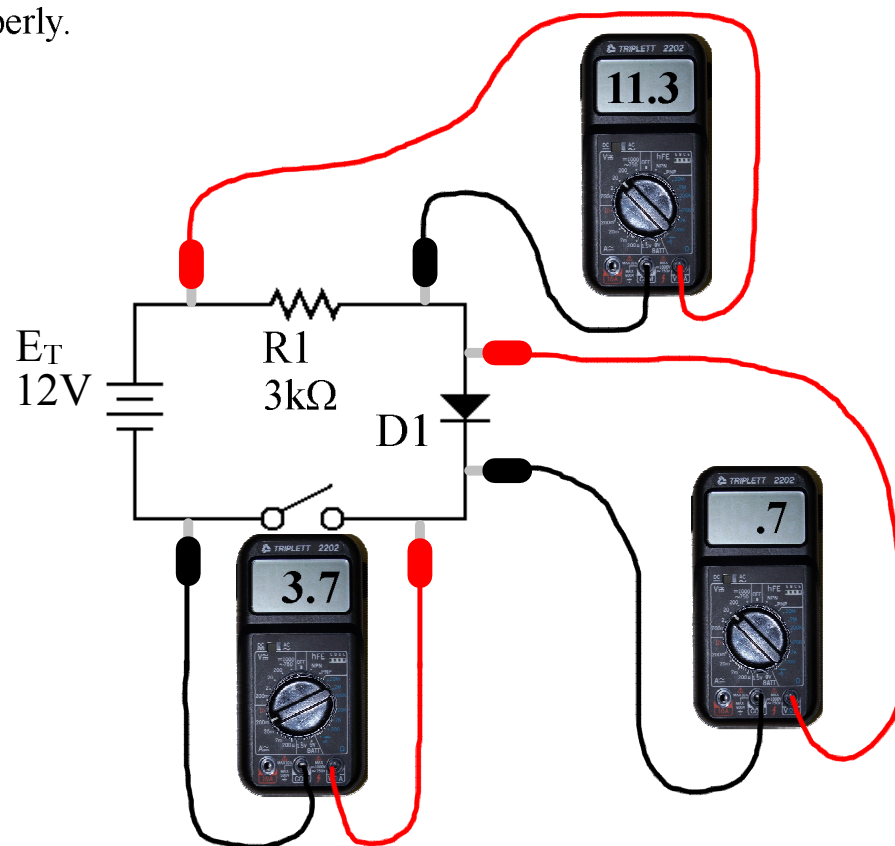
Identify an opened junction diode in a circuit.

Identify a shorted junction diode in a circuit.

Identify a changed value junction diode in a circuit.

Junction Diode Circuit

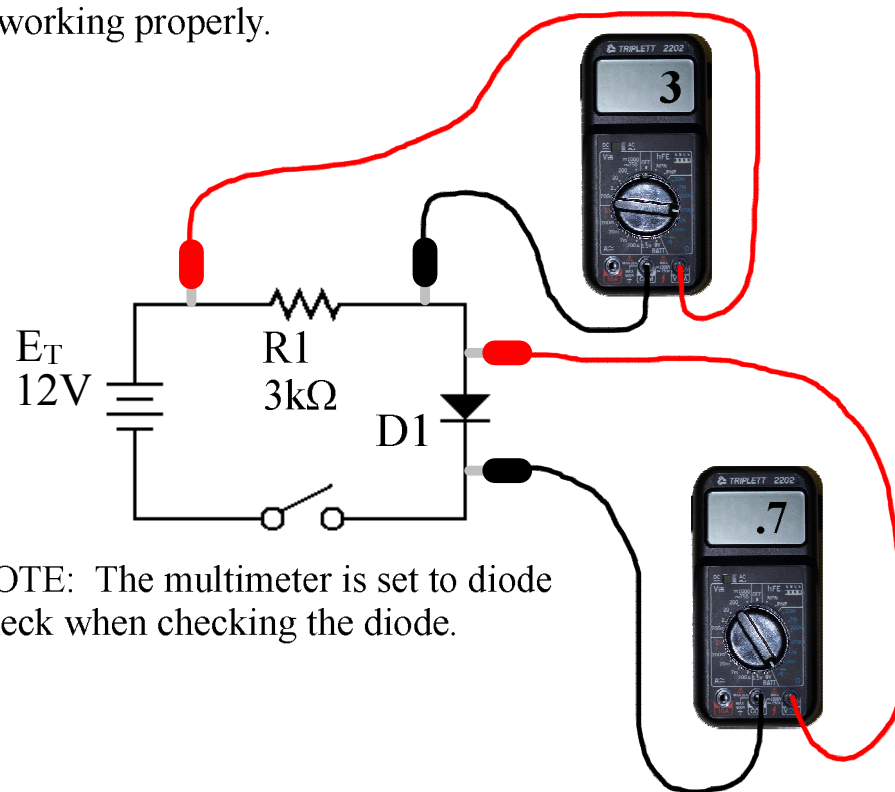
These are the normal voltage measurements when the circuit is working properly.



Calculated
 $E_R = 11.3V$
 $E_{D1} = .7V$
 $I_T = 3.7mA$

Junction Diode Circuit

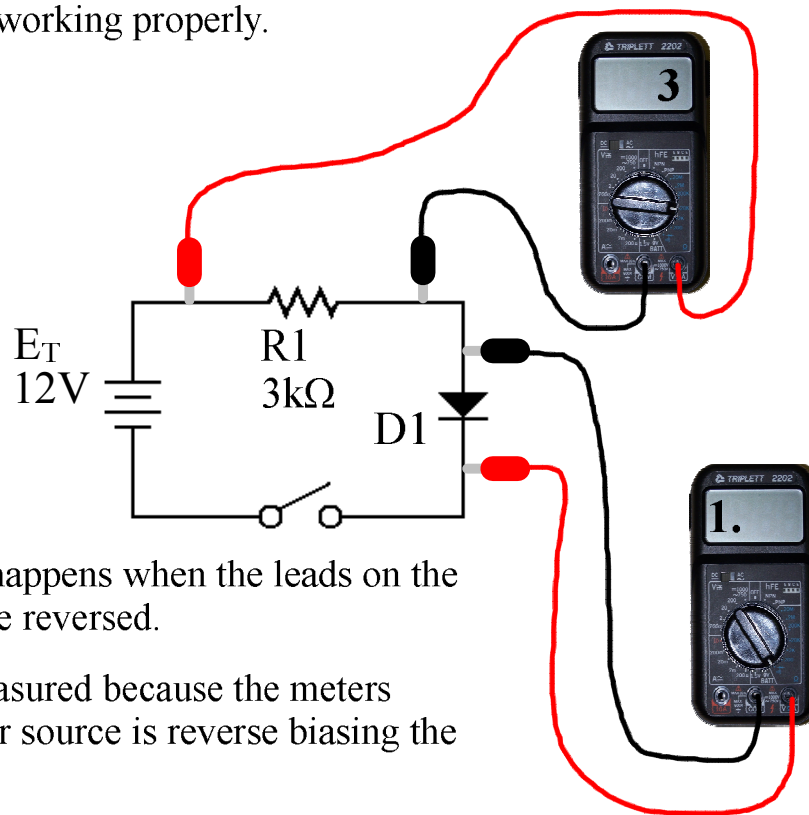
These are the normal resistance and diode check measurements when the circuit is working properly.



NOTE: The multimeter is set to diode check when checking the diode.

Junction Diode Circuit

These are the normal resistance and diode check measurements when the circuit is working properly.

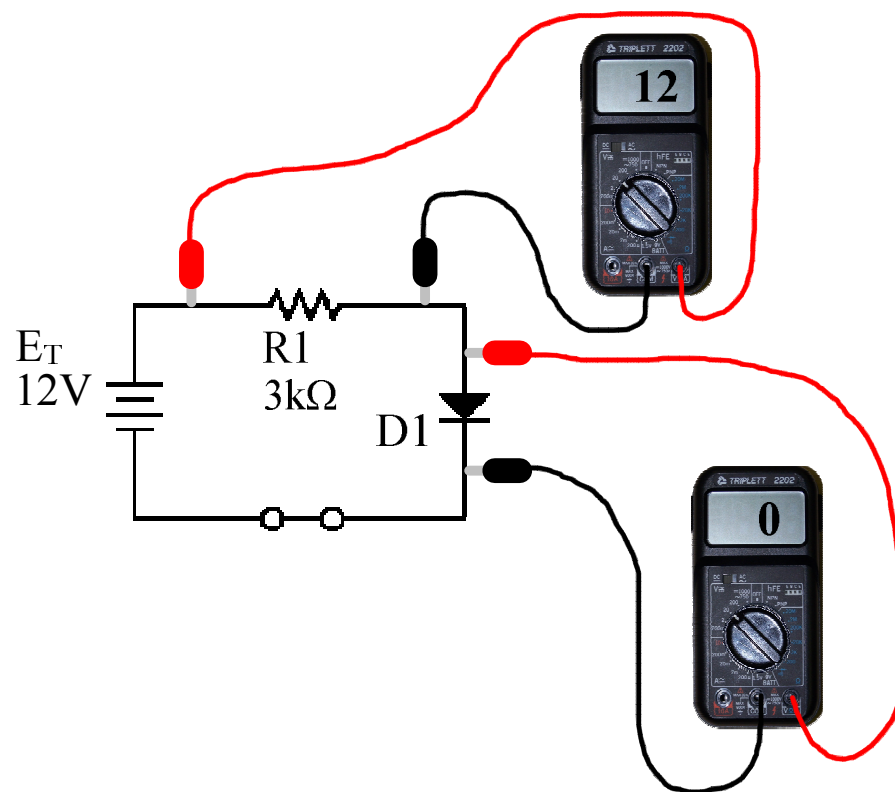


Notice what happens when the leads on the multimeter are reversed.

Infinity is measured because the meters internal power source is reverse biasing the diode.

Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

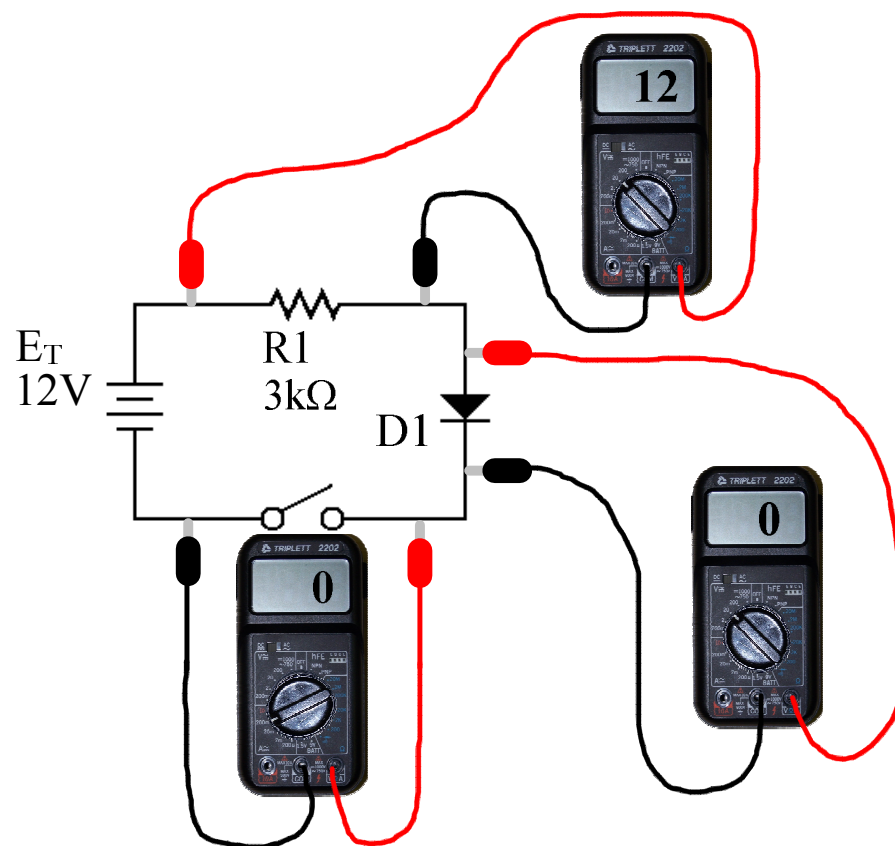
$$E_R = 11.3V$$

$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

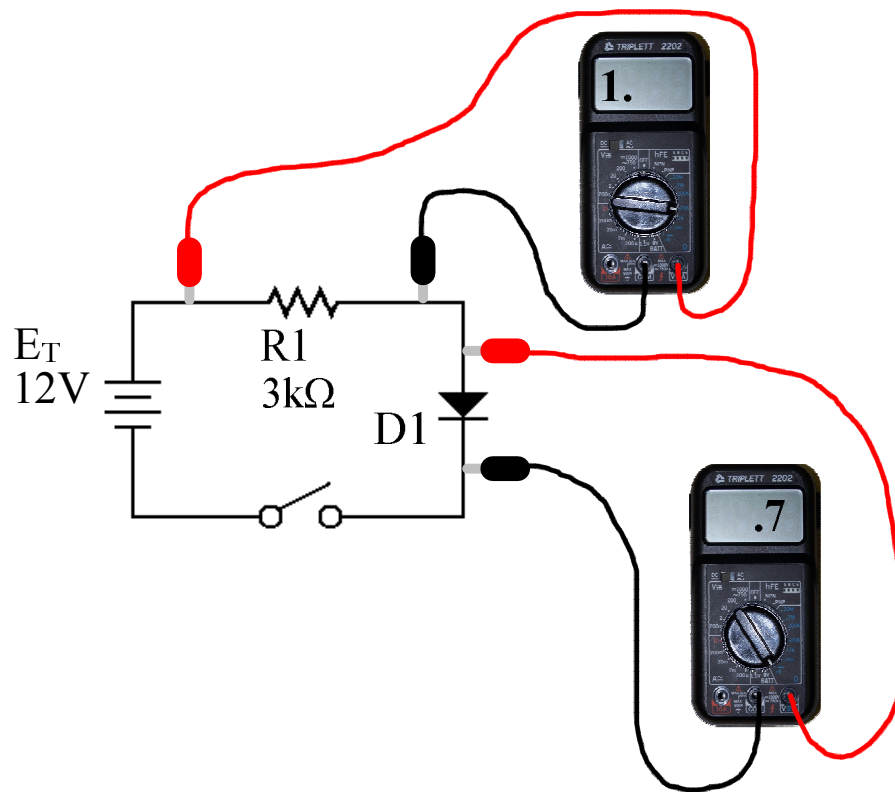
$$E_R = 11.3V$$

$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

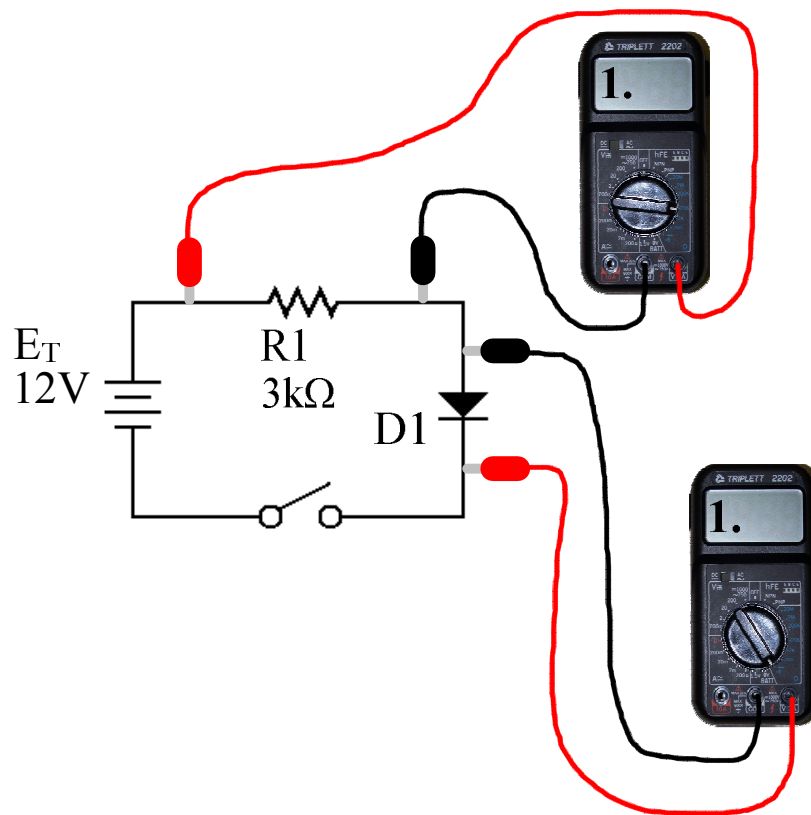
Junction Diode Circuit

Identify the damaged component and its fault.



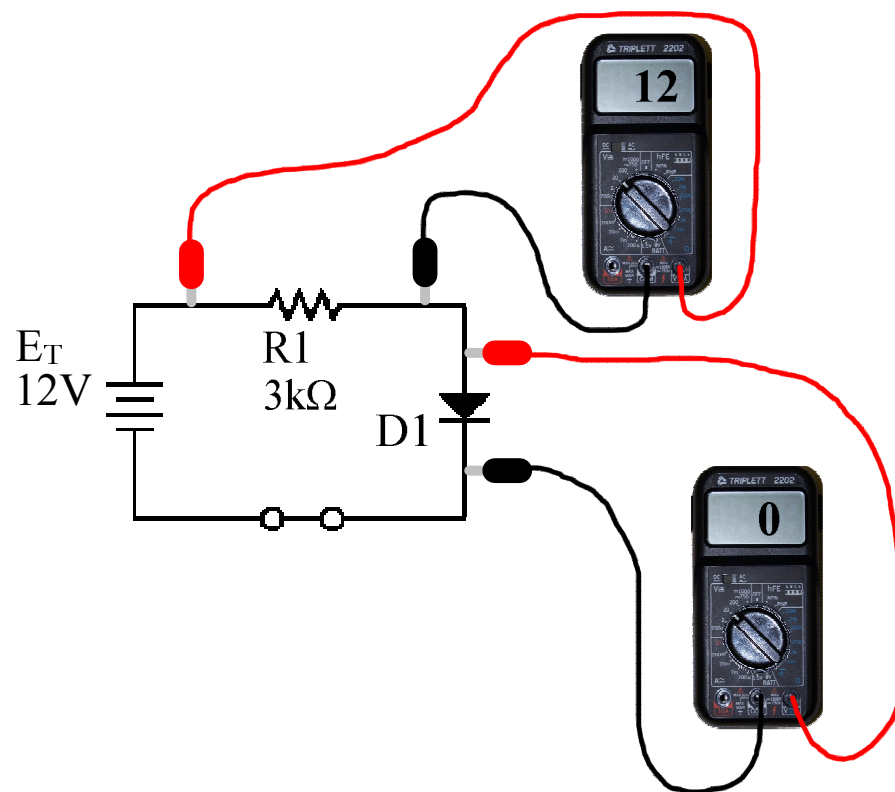
Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

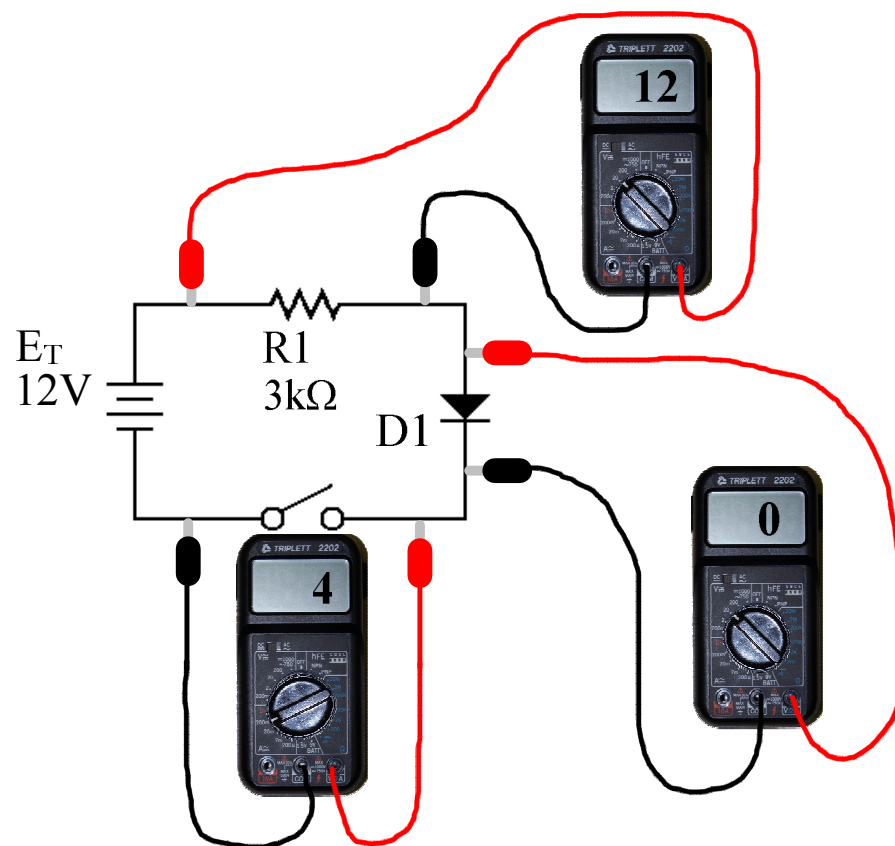
$$E_R = 11.3V$$

$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

Junction Diode Circuit

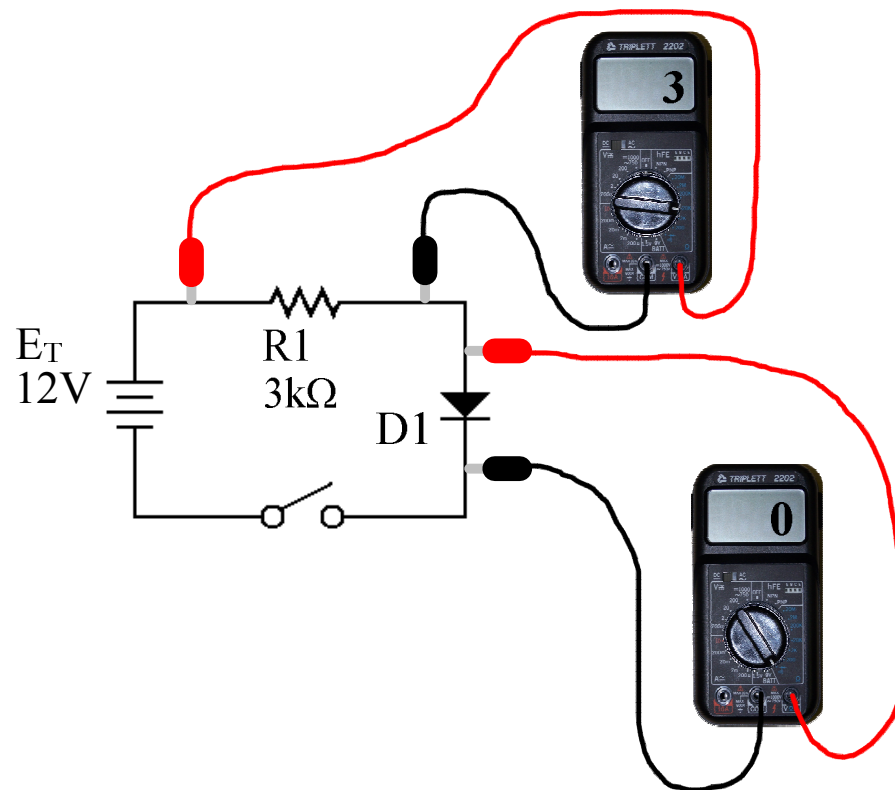
Identify the damaged component and its fault.



Calculated
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 $E_{D1} = .7V$
 $I_T = 3.7mA$

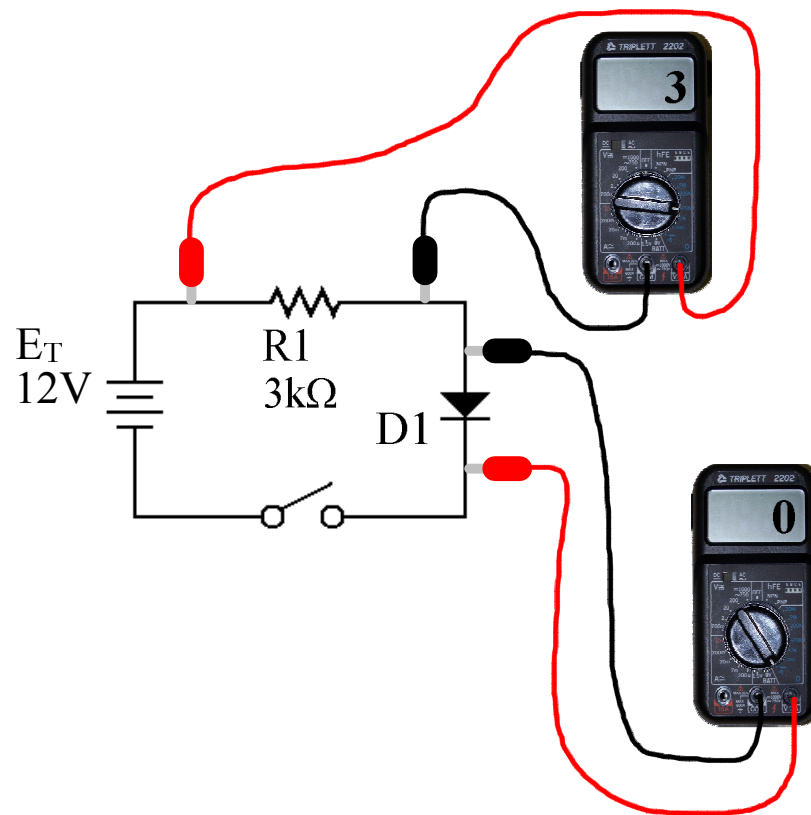
Junction Diode Circuit

Identify the damaged component and its fault.



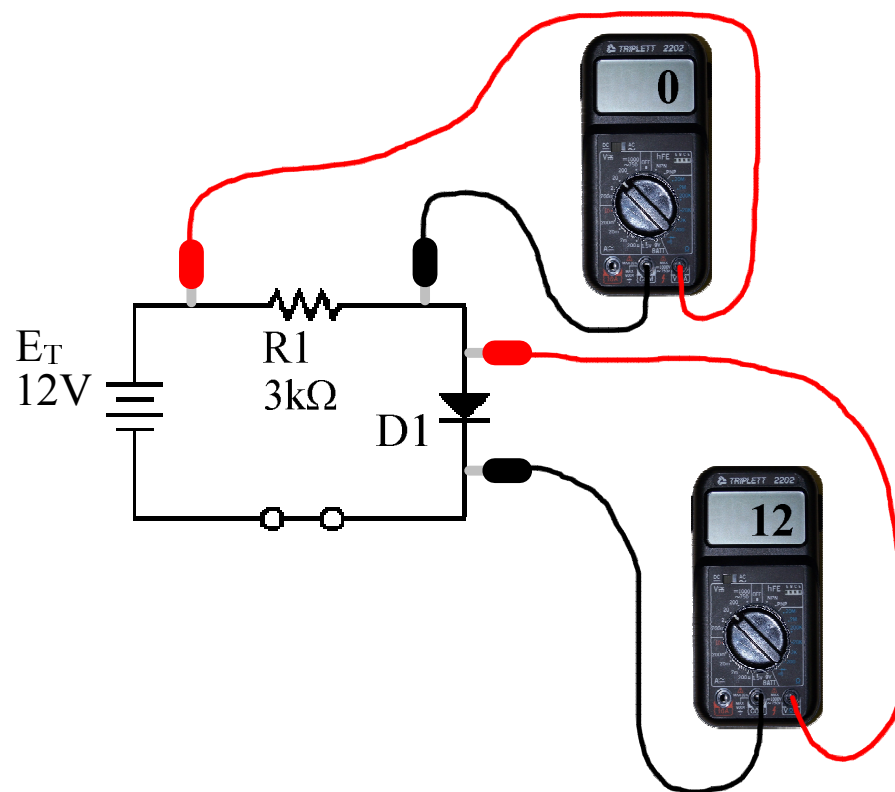
Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

$$E_R = 11.3V$$

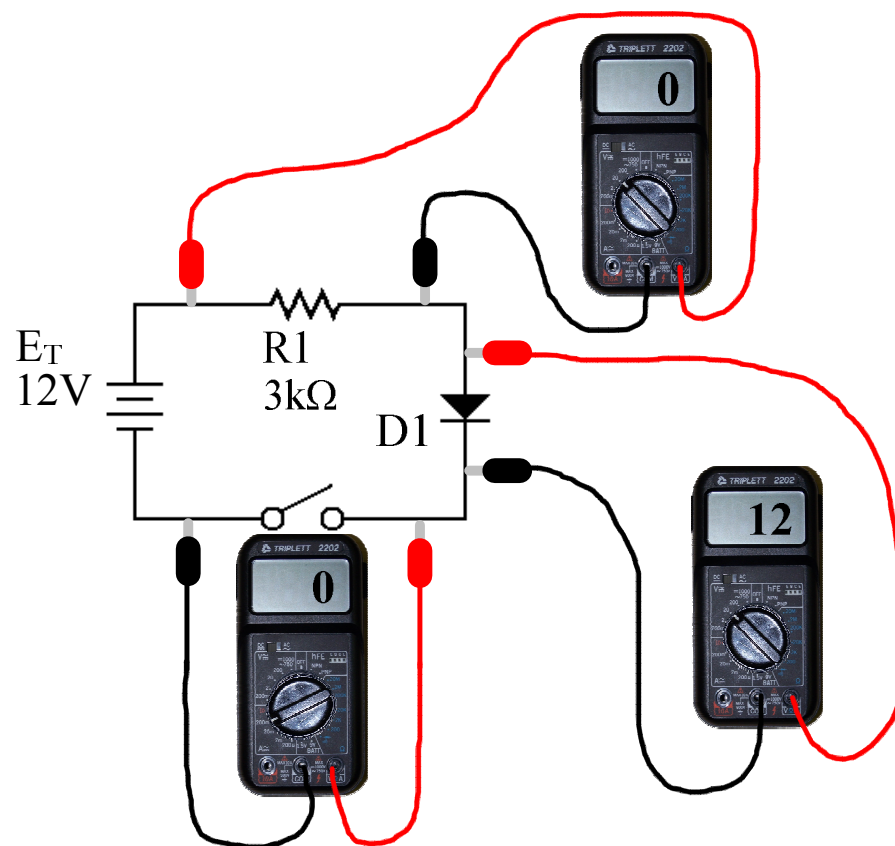
$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

Junction Diode Circuit

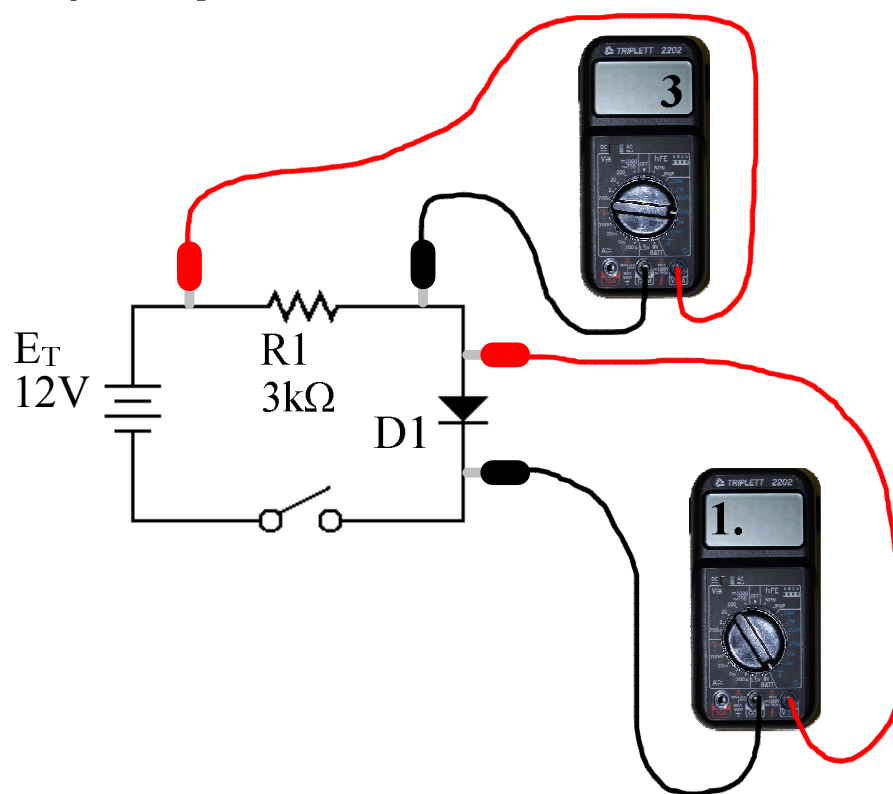
Identify the damaged component and its fault.

Calculated
 $E_R = 11.3V$
 $E_{D1} = .7V$
 $I_T = 3.7mA$



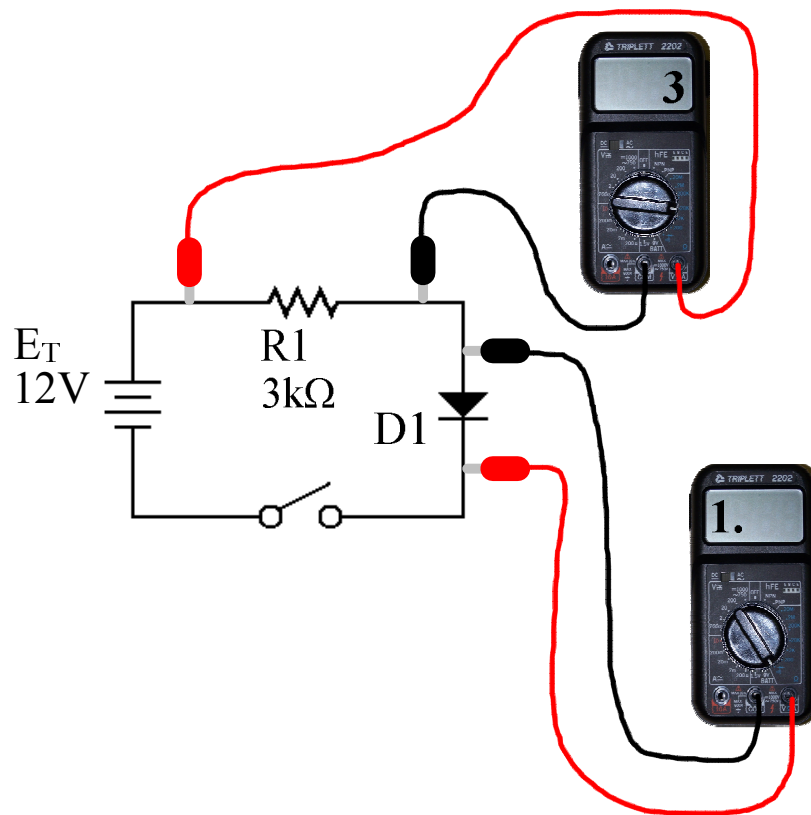
Junction Diode Circuit

Identify the damaged component and its fault.



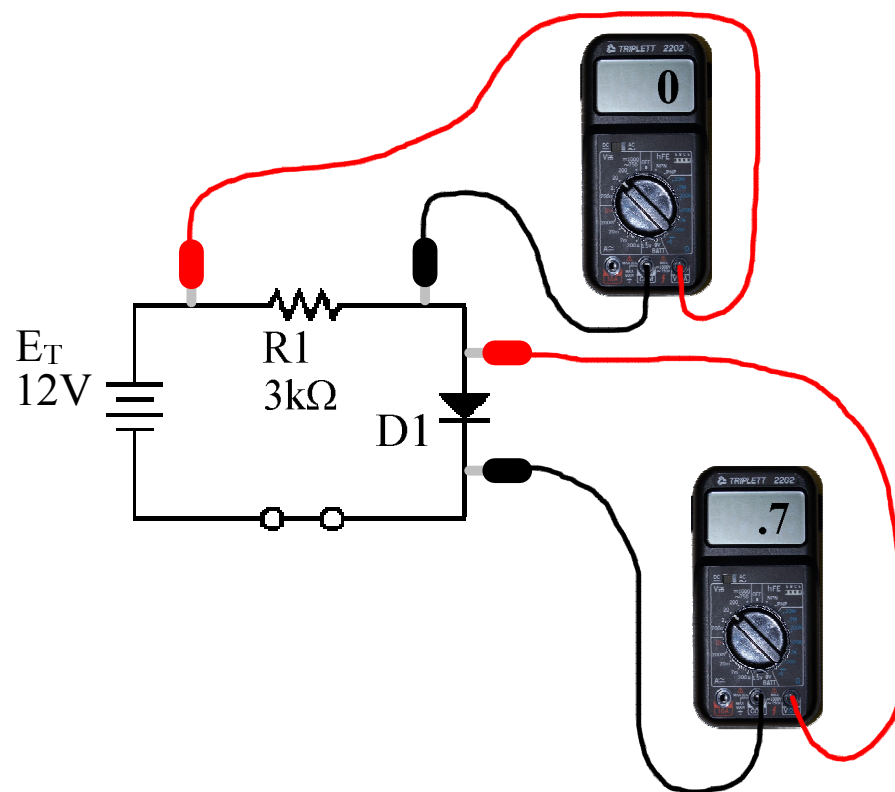
Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

$$E_R = 11.3V$$

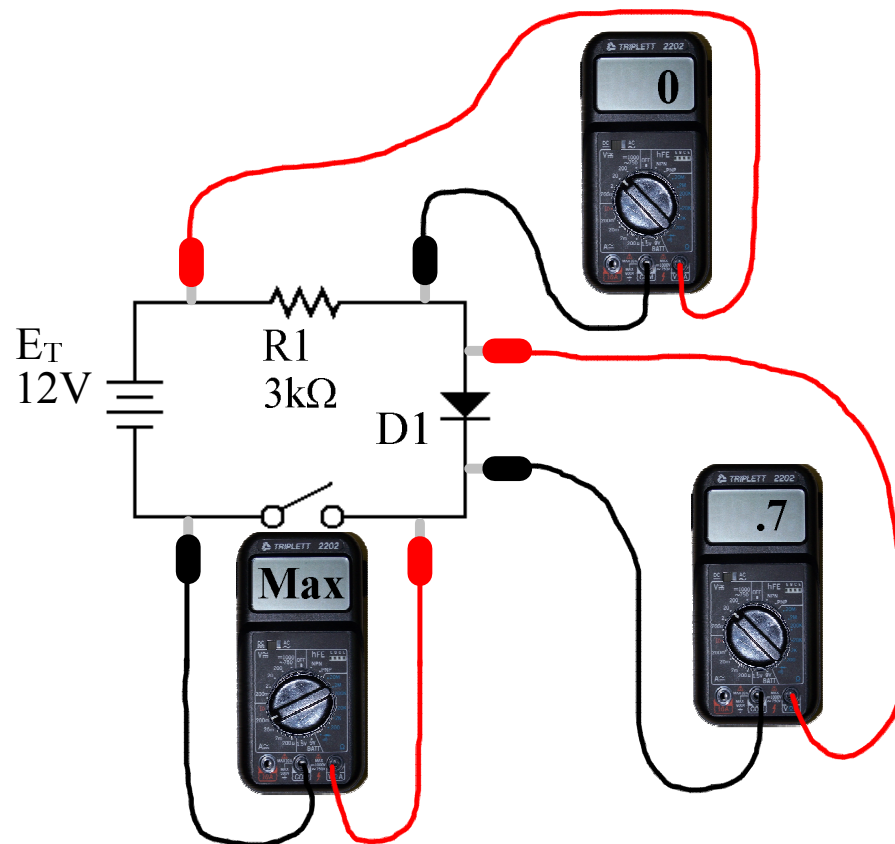
$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

Junction Diode Circuit

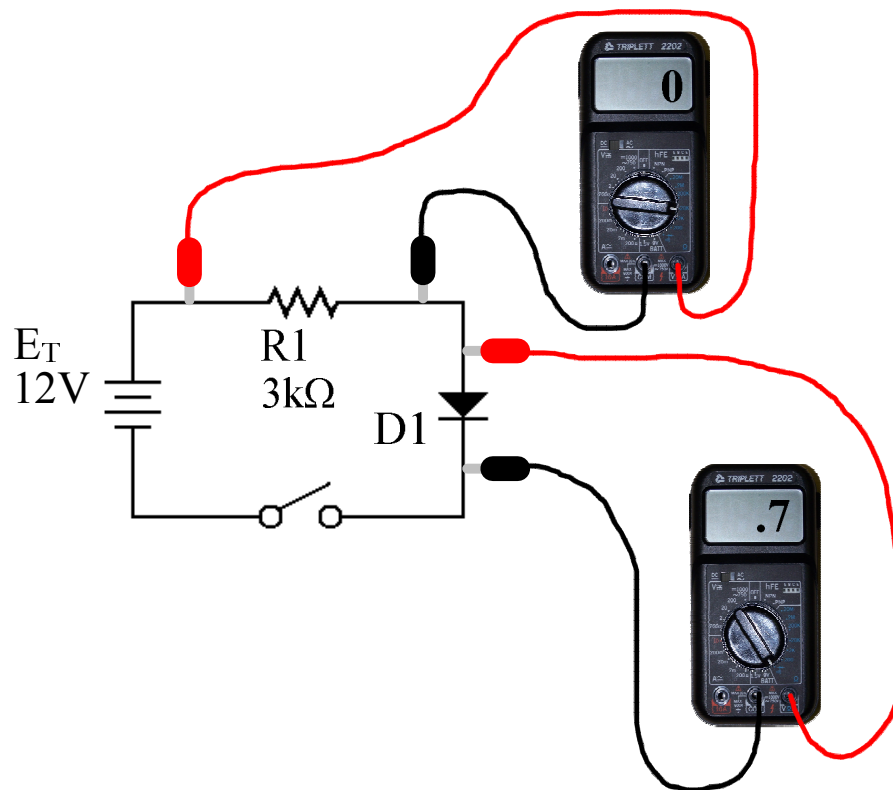
Identify the damaged component and its fault.

Calculated
 $E_R = 11.3V$
 $E_{D1} = .7V$
 $I_T = 3.7mA$



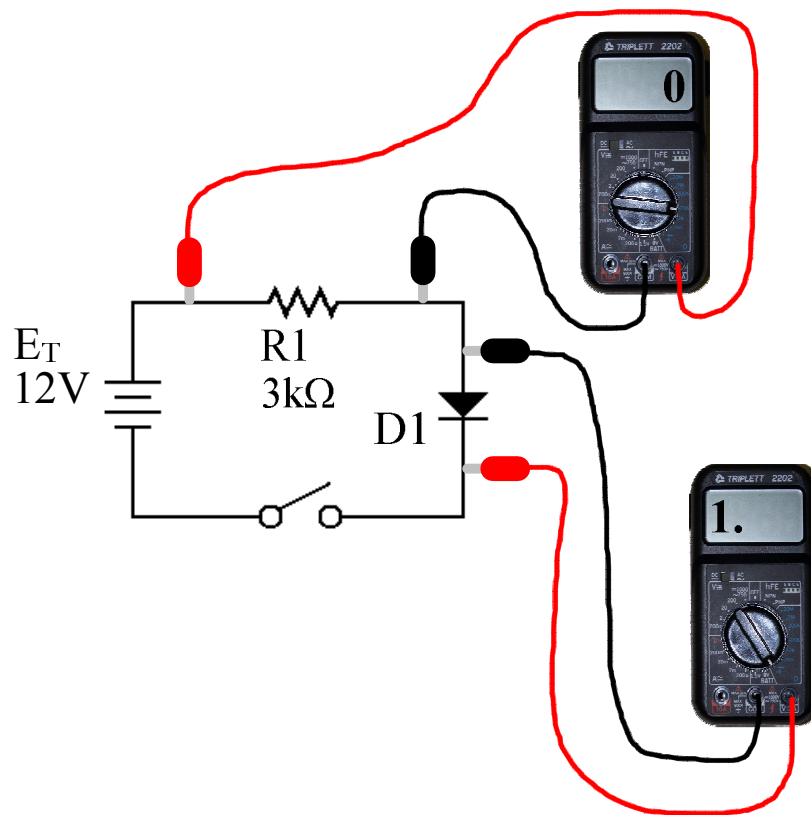
Junction Diode Circuit

Identify the damaged component and its fault.



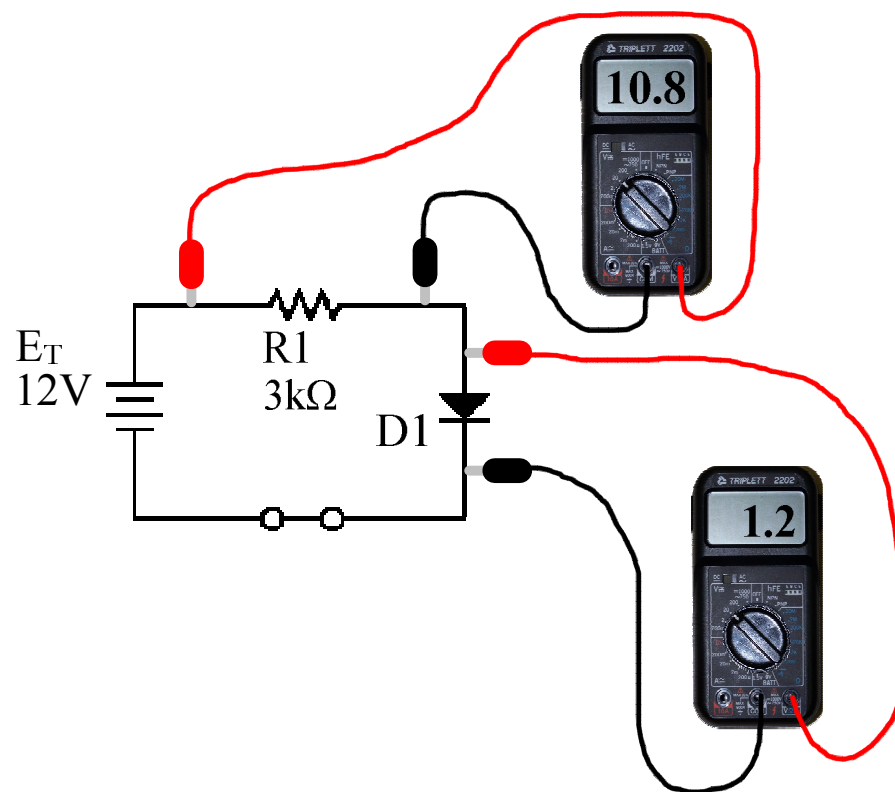
Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

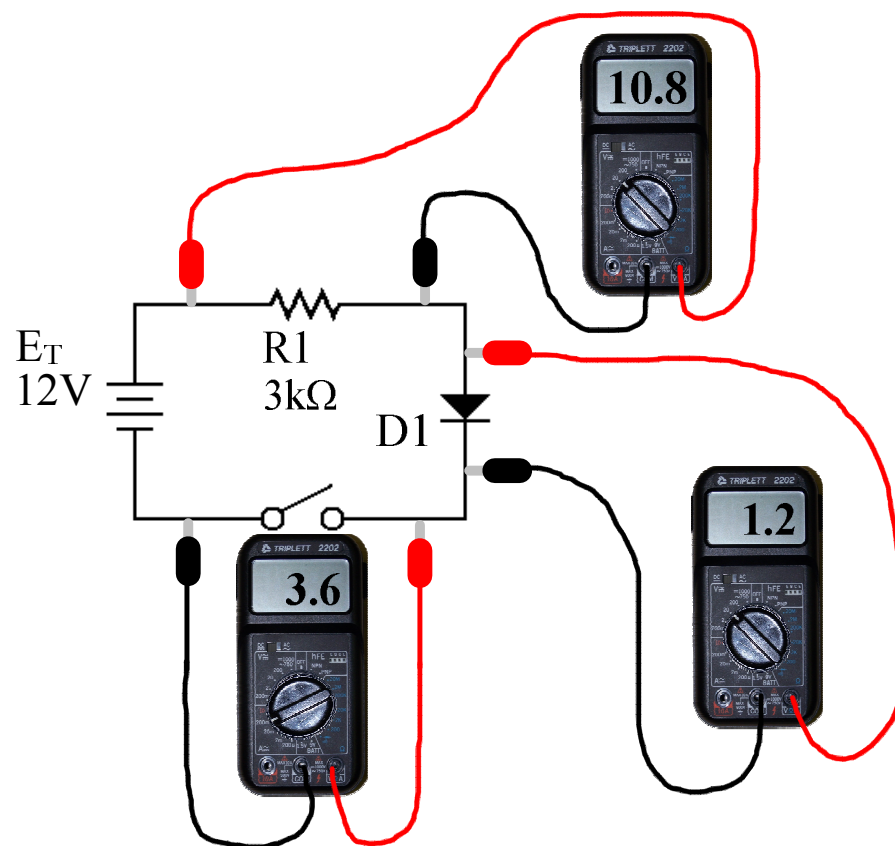
$$E_R = 11.3V$$

$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

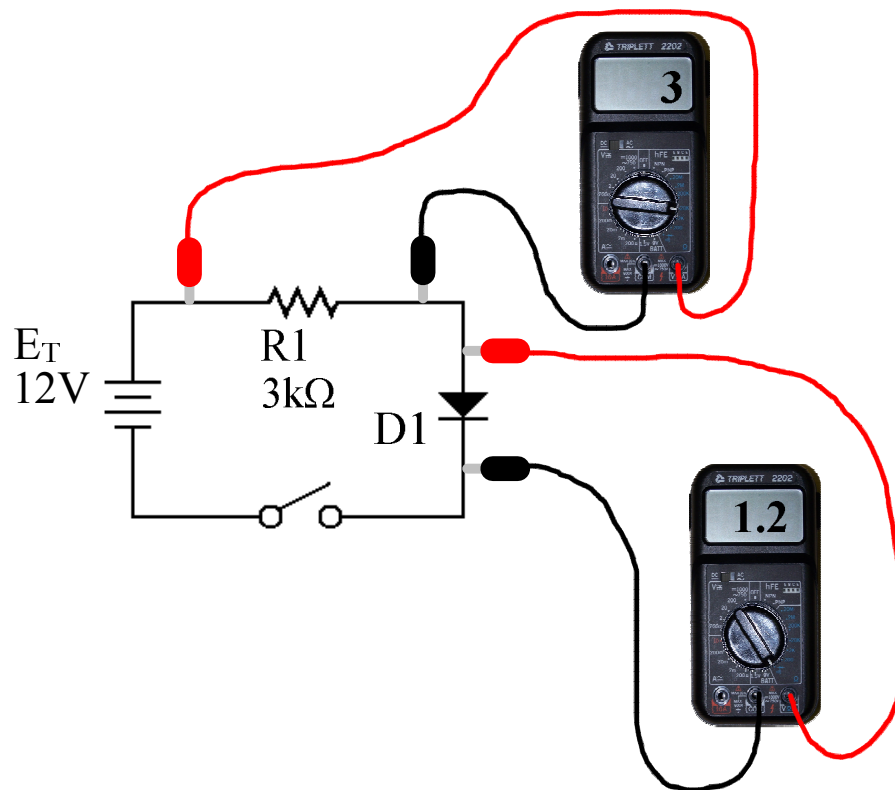
$$E_R = 11.3V$$

$$E_{D1} = .7V$$

$$I_T = 3.7mA$$

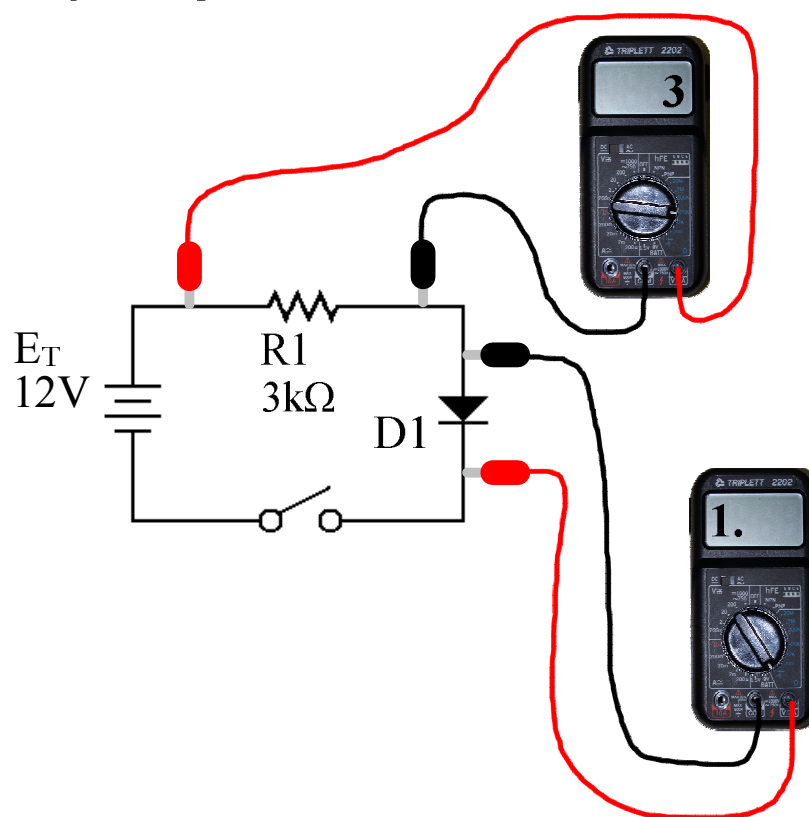
Junction Diode Circuit

Identify the damaged component and its fault.



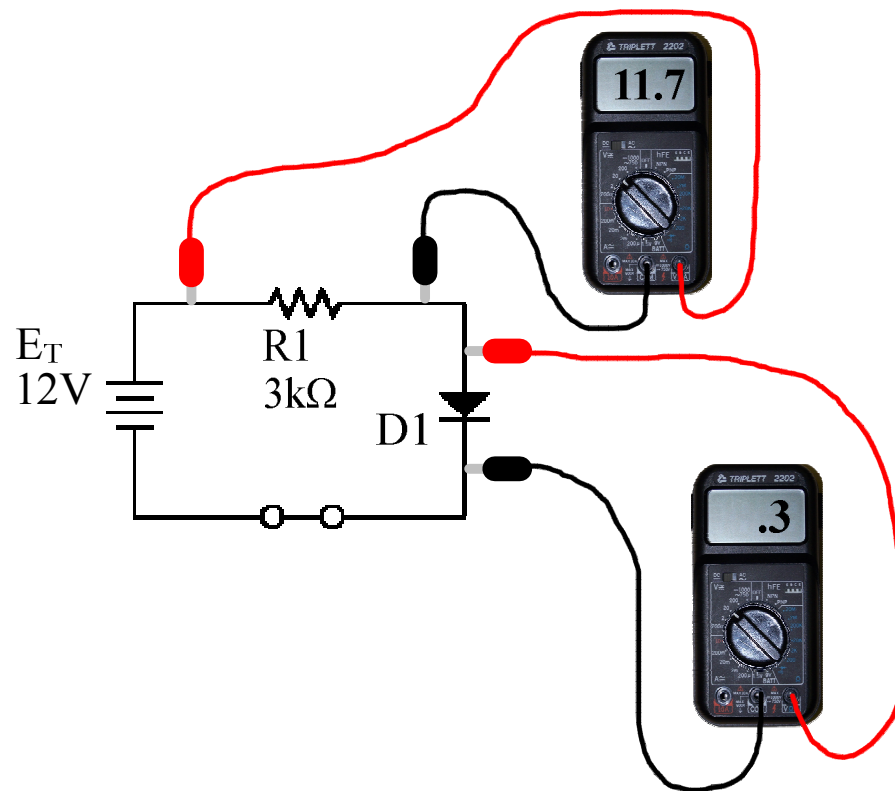
Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.



Calculated

$$E_R = 11.7V$$

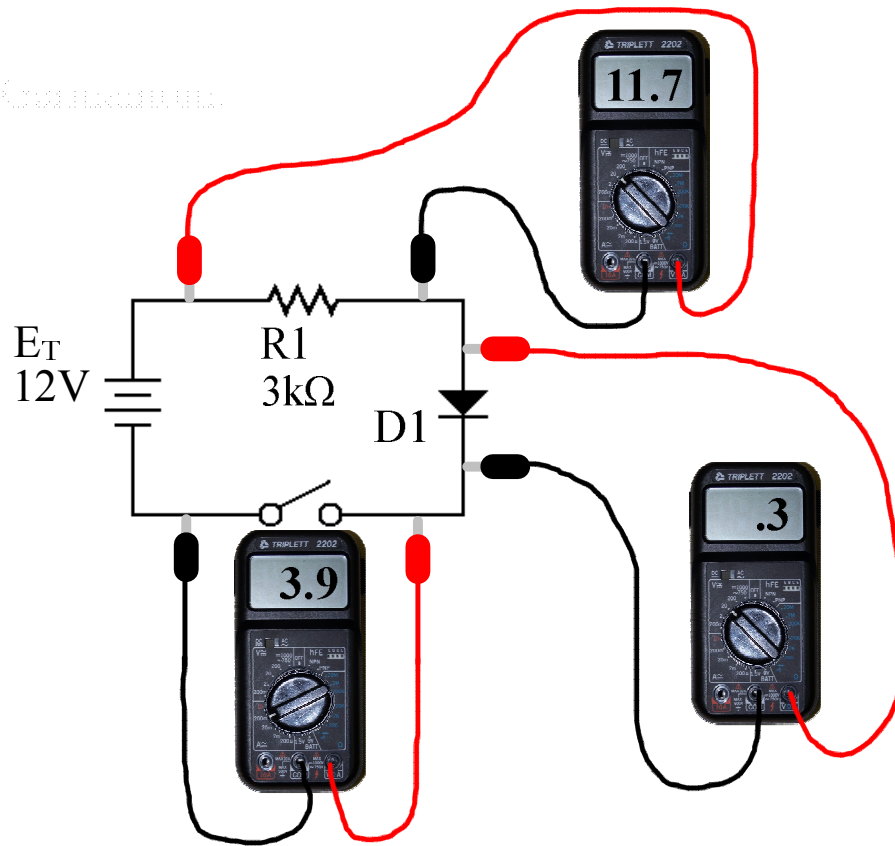
$$E_{D1} = .3V$$

$$I_T = 3.9mA$$

Junction Diode Circuit

Identify the damaged component and its fault.

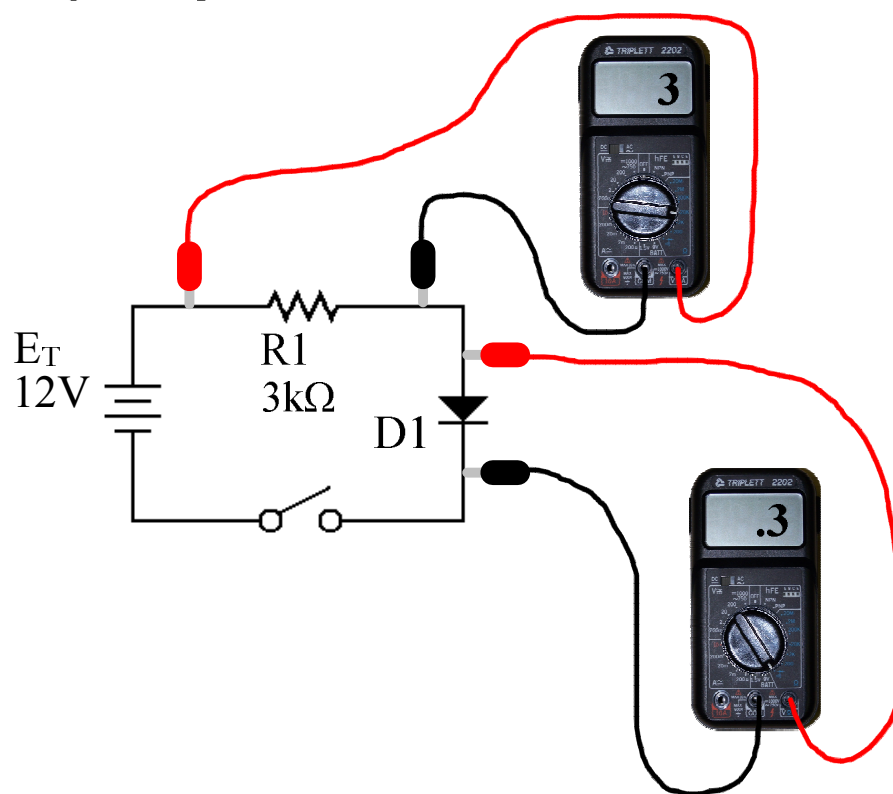
The diode is ~~conducting~~.



Calculated
 $E_R = 11.7V$
 $E_{D1} = .3V$
 $I_T = 3.9mA$

Junction Diode Circuit

Identify the damaged component and its fault.



Junction Diode Circuit

Identify the damaged component and its fault.

