





# DIY Solar Charger

The solar charger

 Difficulty **Medium**

 Duration **2 hour(s)**

 Categories **Electronics, Energy**

 Cost **20 USD (\$)**

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## Materials

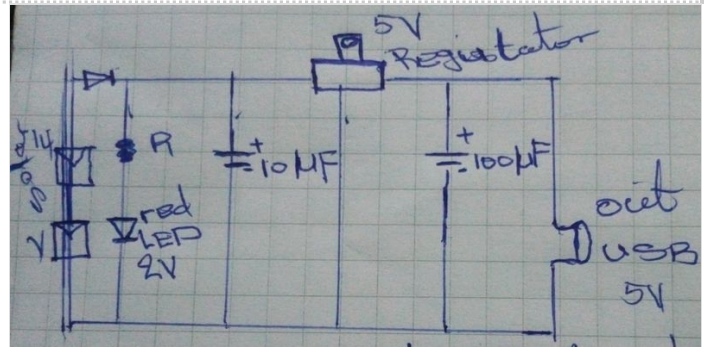
- Solar panel of (10v) optional
- Diode
- Resistors
- Regulator(5MA-20AM)
- Capacitors of (10-100)
- LED light of(2v or 3v)
- Jumper wire
- Circuit board
- Bread board

## Tools

- Wires(red and black)
- Soldering iron
- Soldering wire
- Soldering grease
- Helping hand
- Sucker
- Scissor
- Multimeter
- LED tester

## Step 1 - Drawing

Draw the diagram of the charger



## Step 2 - Asknet Box

Open the ASKotec kit and get the tools and materials to use



## Step 3 - Tools and materials

- Identify the tools and materials
- Arranged the materials and the tools



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## Step 4 - Test the following materials

- The total voltage of the solar panel
- The LED light using the LED tester

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## Step 5 - Calculations

Calculate the Resistance

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## Step 6 - Bread board

Get the bread board and place it at the helping hand

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## Step 7 - Fix the following materials

- Fix a positive (+wire red in color) and negative (-wire black in color) for input source (power)
- Fix the diode
- Fix a positive wire from the input source (+wire) to the diode
- Fix the resistors in positive side of the diode and have to be in series for easy calculation

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## Step 8 - Resistor

Fix the resistors in positive side of the diode and have to be in series for easy calculation

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## Step 9 - LED light

Fix the LED light to positive side of the resistors

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## Step 10 - Regulator

Fix the regulator where the black side need to face your side

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## Step 11 - Small Capacitor

Fix the small capacitor

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## Step 12 - Big capacitor

Fix the big capacitor

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## Step 13 - Regulator and diode

Connect the left pin of the regulator to the diode and resistors

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## Step 14 - capacitor, diode, resistor and regulator

Connect the positive pin of the first capacitor to the join the diode, resistors and the left pin of the regulator

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## Step 15 - Regulator and big capacitor

Connect the right pin of the regulator to the positive pin of the big capacitor

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## Step 16 - Regulator and LED

Connect the middle pin of the regulator to the negative pin of the LED light

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## Step 17 - Small capacitor to the LED

Connect the negative pin of the small capacitor to negative pin of the LED light

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## Step 18 - Big capacitor and LED

Connect the negative pin of the big capacitor to negative pin of the LED light

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## Step 19 - All negative sides

In all connect the negative sides together

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## Step 20 - Positive wire

Fix +wire to the positive pin of the big capacitor

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## Step 21 - Negative

Fix -wire to the negative pin of the big capacitor

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## Step 22 - Female USB

Connect the female USB to the +wire and -wire on the capacitor

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## Step 23 - Test

Test the solar charger in the sun and test the output and charge the phone

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