

MOTO CHARGER

Ab bijli jaane ka nahi hai darr, hath mein hai motocharger

A charger to charge any daily use electronic device without any
electricity and power bank.

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Product Photo:-



Synopsis

How often do we charge an electronic device in emergency? Being able to charge a phone, device is impressive and can amuse our peers. We can learn a lot about electronics and gain practical knowledge by building this project. I learned quite a lot from it.

Motivation

Our main motive behind hand emergency charger device was to provide an one-stop solution to the problem of charging under emergency or disastrous circumstances, where unavailability of power is a issue.

Product Description:-

- **One STOP charging solution** for all devices(laptops, smartphone, smartwatches, ham radio, bluetooth speakers etc.) just connect a usb cable and start charging by rotating handle .
- **A go-to product** for charging without electricity.
- **Displays the voltage** using led display.
- **Hassle free device** without need of adapter.
- **Compact size**, can easily fit into a small bag.
- **Rough and Tough** body.

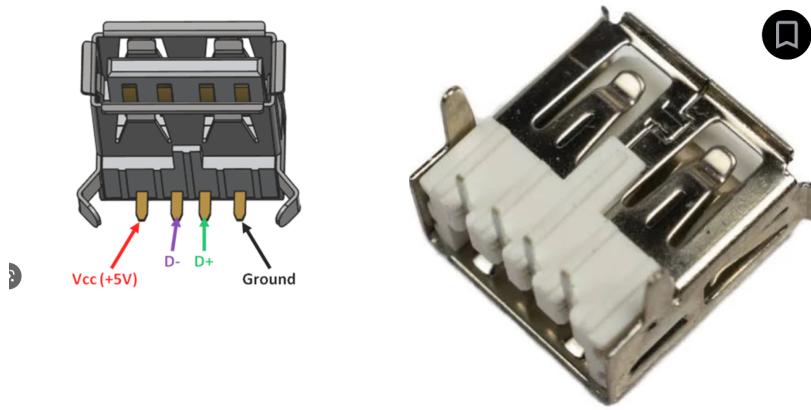
Specification:-

- **Output charging voltage : 4.95V ~ 5.14V**
- **Charging mode : constant voltage**
- **Maximum charging Current : 385mA**
- **Device Supported : any laptops, phone, bluetooth speakers, radios, all kind of electronic devices.**
- **Operating temperature : -20C to 50C.**

Component Used

1) USB Connector Type A - Female - PCB Mount

This is female type A USB connector, which is most commonly found on your PC and Laptop computer. This connector can hold make Type A(R-1306) USB connector found on flash drives. it has 4 Pins which are in right angled to the connector body, so that this connector can mounted directly on PCB.



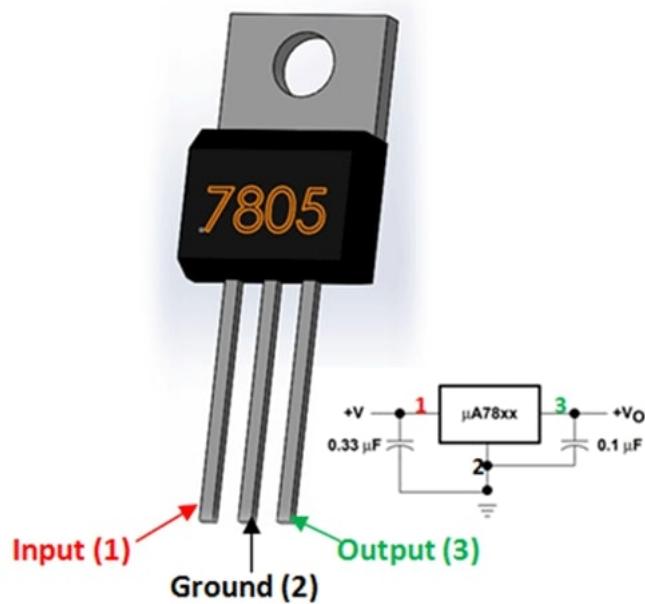
2) Capacitor

A capacitor is a two-terminal electrical device that can store energy in the form of an electric charge. It consists of two electrical conductors that are separated by a distance. Radial capacitor has leads that come out from the same ends. We have one 1000uF capacitor and 100uF Capacitor.



3) 7805 VOLTAGE REGULATOR

voltage sources in a circuit may have fluctuations resulting in not providing fixed voltage outputs. A voltage regulator IC maintains the output voltage at a constant value. 7805 Voltage Regulator, a member of the 78xx series of fixed linear voltage regulators used to maintain such fluctuations, is a popular voltage regulator integrated circuit (IC).



4) DC Motor

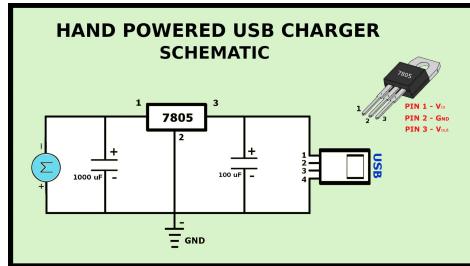
A DC motor is defined as a class of electrical motors that convert direct current electrical energy into mechanical energy.

DC motor working is based on the principle that when a current carrying conductor is placed in a magnetic field it experiences a mechanical force. the direction of the mechanical force is given by left hand fleming's rule.



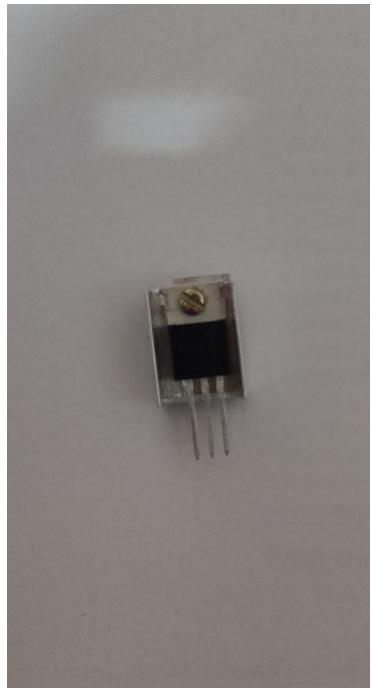
Difficulties faced

1) Circuit diagram : we are trying to make efficient charger diagram therefore we reject many circuit diagrams because need to make a size compact and light weight



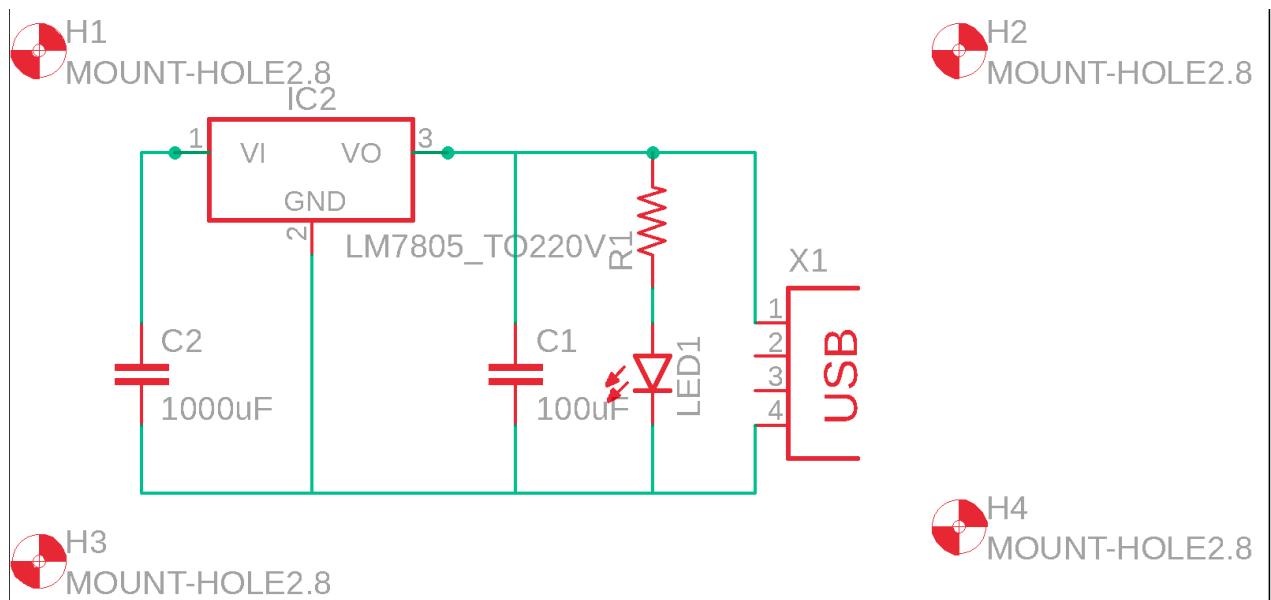
2) DC motor : we have a challenge to high voltage current with applying less amount of mechanical energy, therefore we use 100rpm motor which generate more amount of voltage by applying less amnt of mechanical energy and, this also reduce our force.

3) Force : for reducing our torque for moving a dynamo we increase the length of our handle so torque will be minimum and we also use gear in dc motor which help us to rotate motor easily and gear also increase the rotation of our motor.

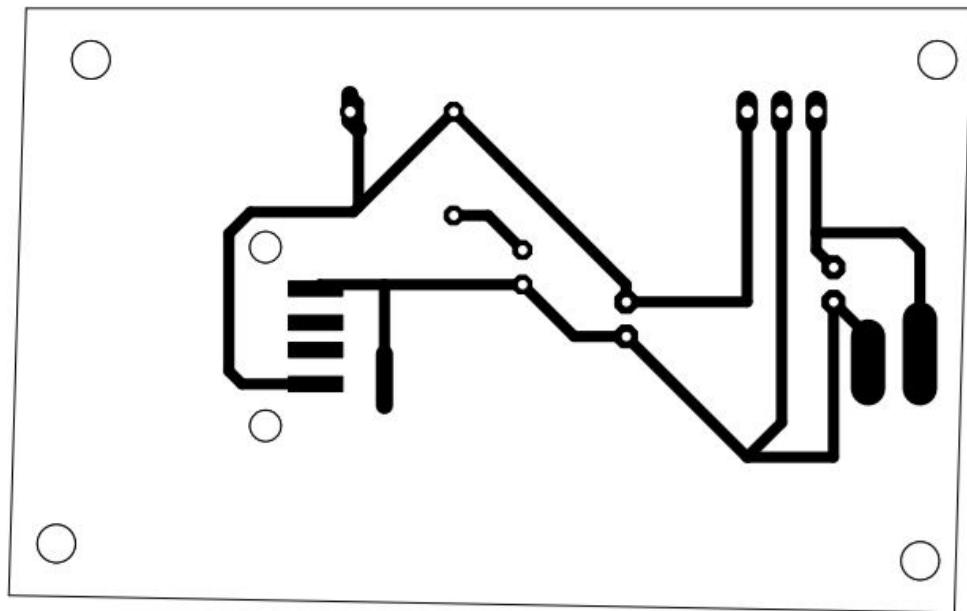


the bread board. We did not check the all components individually cause of that after implementing the circuit on bread board. Our voltage regulator was not working Then, we changed the voltage regulator firstly. After that, our circuit was operating successfully

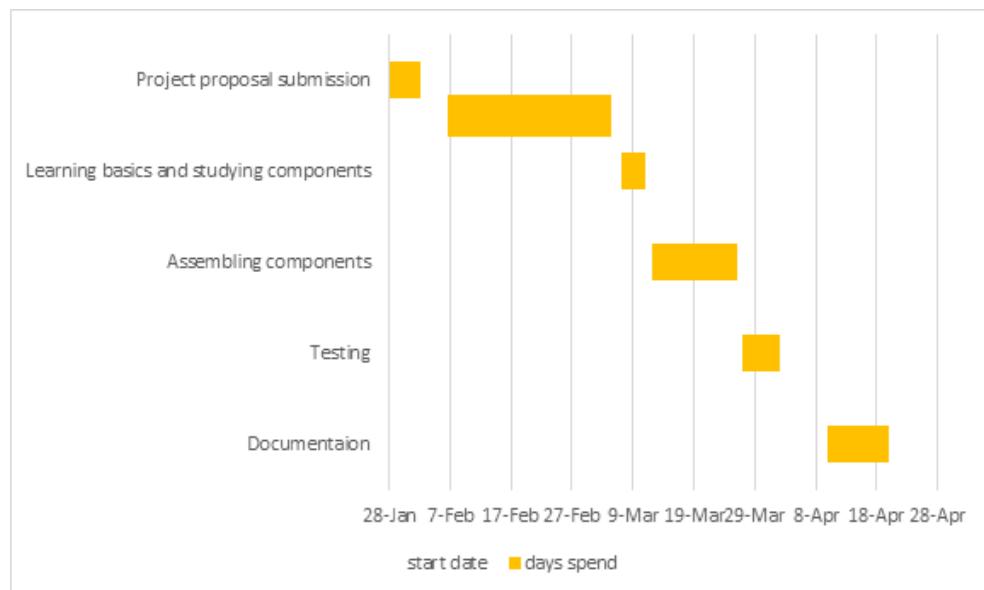
Eagle cad circuit



Eagle Cad Layout



Gantt Chart:



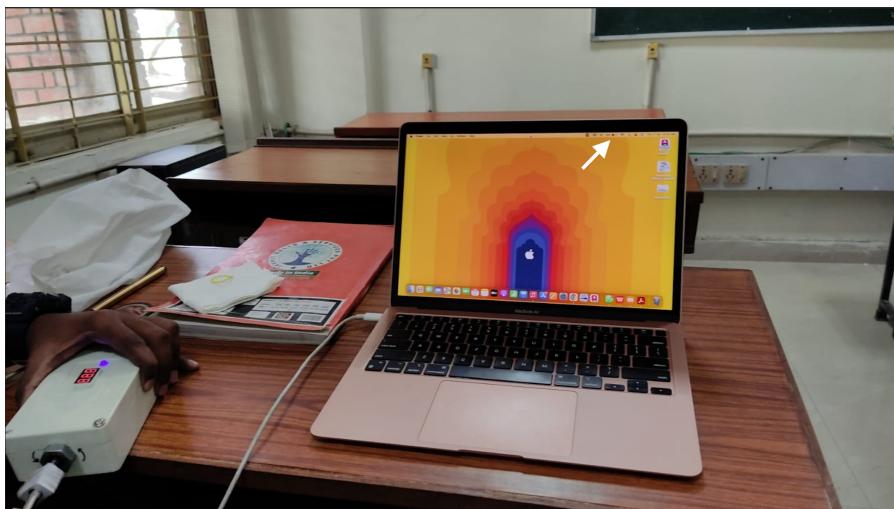
TESTING RESULTS:-



Charging Boat wireless Eardopes SUCESSFULLY



Charging Realme Phone Successfully



*CHARGING MACBOOK M1
with EASE!!!*