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# A REVIEW ON SELF SWITCHING POWER SUPPLY

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**ABSTRACT :-** Inserted framework requires a controlled power supply. this power supply circuit gives a variable managed supply and switches off in no heap condition. Through a plan of voltage controller 7805 and a potentiometer the result voltage is differed from 3.7 v to 8.7. one more element of this power supply is the point at which no heap is their it naturally turns off. It is accomplished through a course of action of semiconductor and hand-off.

***Keyword*** :- Transistor, relay, regulator, transformer.

## I. INTRODUCTION

- Almost all system requires a regulated power supply
- This power supply circuit gives a variable regulated supply and switches off in no load condition
- Through an arrangement of voltage regulator 7805 and a potentiometer the output voltage is varied from 3.7 V to 8.7 V
- Another feature of this power supply when no load is there automatically switches off.
- It is achieved through an arrangement of transistor and relay

### 1.1 Basic Block Diagram

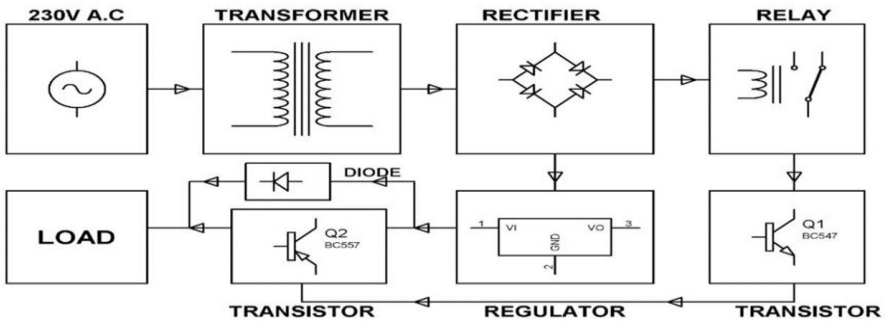


Fig.1- Basic Block Diagram

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### 1.2 Circuit Diagram

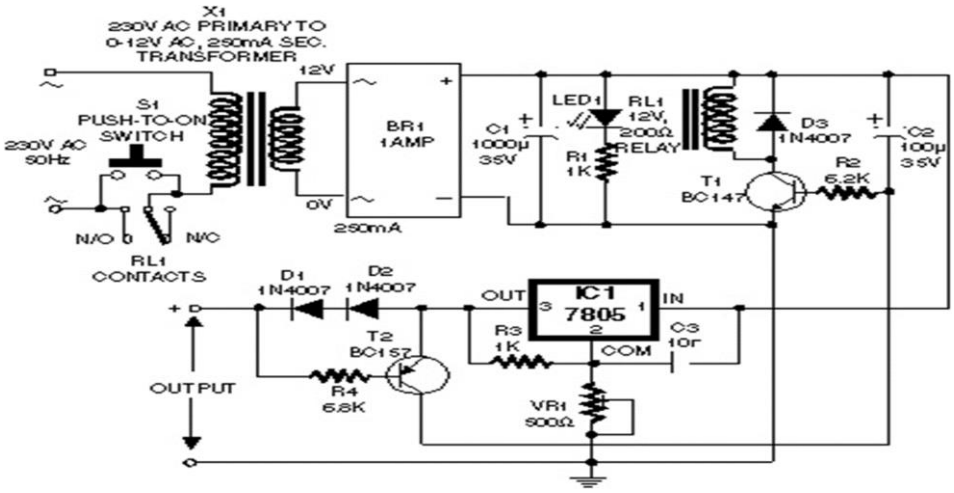


Fig.2 - Circuit Diagram

### 1.3 WORKING PRNICIPAL

A regulated power supply circuit that through a fixed-voltage regulator 7805 not only gives variable yet additionally auto switch off highlights This is accomplished by interfacing a potentiometer between normal terminal of managed IC and ground .For each 100-ohm increase in the in - circuit worth of the obstruction of potentiometer , the result voltage increments by 1 volt. Subsequently, the result differs from 3.7 v to 8.7 v (considering 1.3 - volt drop across diode ).Another important feature of the supply is that it switches itself off when no load in connected across its output terminals.

#### 1.3.1 TRANSFORMER

- There is used stepdown transformer ( 230 V to 12 V AC )
- Its secondary voltage is less than primary voltage
- It is design to reduce the voltage from the primary winding to the secondary winding.
- The transformer converts high-voltage,low-current power into low- voltage,high-current power

#### 1.3.2 RECTIFIRE

- There is use full way bridge rectifier
- A bridge rectifier is an arrangement of four or more in a bridge circuit configuration
- It is provide same output polarity for either input polarity

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- It is used for converting Alternating current (AC) input into a direct current (DC) output

### 1.3.3 FILTER

- A filter is a capacitor which filter out a certain frequency or range of frequencies from a circuit
- Usually capacitors filter out very out very low frequencies signals
- These are signals that are very close to 0Hz in frequency value
- These are also referred to as DC signals

### 1.3.4 REGULATOR

- A voltage regulator is designed to automatically maintain a fixed voltage level
- 7805 is a voltage regulator integrated circuit
- It is a member of 78xx series of fixed linear voltage regulator Ics
- The xx in78xx indicates the fixed output

### 1.3.5 RELAY

- A relay is an electromagnetic switch operated by a relatively small electric current
- The purpose of relay is to control the movement of the gate
- Relay is used to control electrical devices
- A relay is able to control an output circuit of higher power than the input circuit

### 1.3.6 TRANSISTOR

- A transistor is a device that regulates current or voltage flow and acts as a switch or gate for electronic signals.
- Transistors consist of three layers of a semiconductor material, each capable of carrying a current

### 1.3.7 APPLICATION

- This circuit is used in different electronic circuits, electronic equipment's
- This circuit is used for damage less uses
- By this circuit we can produce various voltages
- It can be used as supply voltage for different electronic equipment's

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## II. CONCLUSION

Almost all electronic gear incorporate a circuit that convert AC voltage of fundamental inventory into DC voltage. This piece of the gear is called power supply. Overall at the contribution of force supply, there is a power transformer a diode circuit rectifier follows it. The result of the rectifier goes to a smoothing filter and then to a voltage regulator circuit. The rectifier is the heart of the power supply.

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