POWER EFFICIENT MINI INVERTER

ABSTRACT:

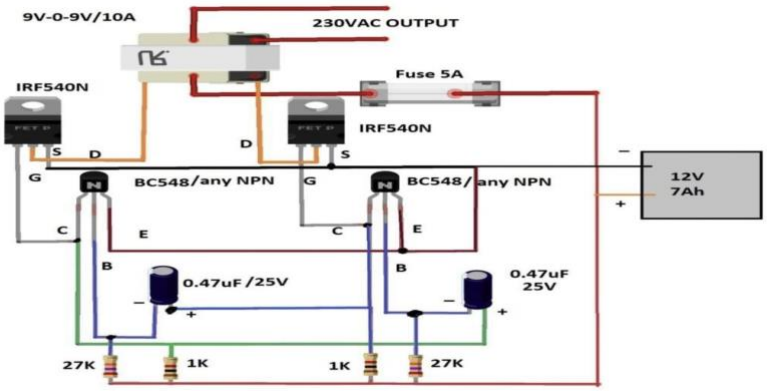
The project aim is to produce a 12v DC power supply into a 240v AC output by using a transformer to setup a power. Also it is capable of producing 1000 watt of output power. An inverter circuit is used to invert the dc energy into AC. The circuit is to produce sine wave output with low noise which applies up to 220 to 240 AC.

In the future we want target to commercialized and go through world market for our project. As we know, every project has their advantages and disadvantages, besides of that we have to reduce the entire disadvantages as much as possible, we might make it useful and easy to use for another people.

INTRODUCTION:

This report focuses on DC to AC power inverter, which aim to efficiently transform a DC power source to a high voltage AC source similar to power that would be available at an electrical wall outlet. Inverters are used for many applications, as in situations where low voltage DC sources such as batteries, solar panels or fuel cells must be converted so that devices can run off of AC power. One example of such a situation would be converting electrical power from a car battery to run a laptop, Tv or cellphone. This method in which low voltage DC power is inverted, is completed in two steps. The first being the conversion of the low voltage DC power to high voltage DC source, and the second step being the conversion of high DC source to an AC wave form using pulse width modulation. Another method to complete the desired outcome would be to first convert the low voltage DC power to AC power, and then use a transformer to boost the voltage to 240 volts. This project focused on the first method described and specifically the transformation of a high voltage DC source into an AC output. These types of inverter are much cheaper than pure sine waves inverters and therefore or attract alternatives .

CIRCUIT DIAGRAM:



WORKING PRINCIPLE:

Here is a 100 watt inverter circuit using minimum number of components. I think it is quite difficult to make a decent one like this with further fewer components. The 220V AC will be available at the secondary of the transformer. Nothing complex just the elementary inverter principle and the circuit works great for small loads like a few bulbs or fans. If you need just a low cost inverter in the region of 100 Watt, then this is the best .

Inverts convert low frequency main AC power to higher frequency for using induction heating. To do this,AC power is first rectified to provide DC power. The inverter then changes the DC power to high frequency AC power.

CONCLUSION:

The first to create this project, we search all about already existing inverter system in world. For example an inverter is an electrical device that convert direct current (DC) to alternating current (AC) the converted AC can be at any required voltage and frequency with the use of Appropriate transformer, switching, and control circuits.

Solid -state inverters have no moving parts and are used in a wide range of applications, from small switching power supplies in n computers, to large electric utility high- voltage direct current applications that transport bulk power. Inverters are commonly used to supply AC power from DC sources such as solar panels or batteries.