

National Institute of Technology Agartala

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Network Theory Project

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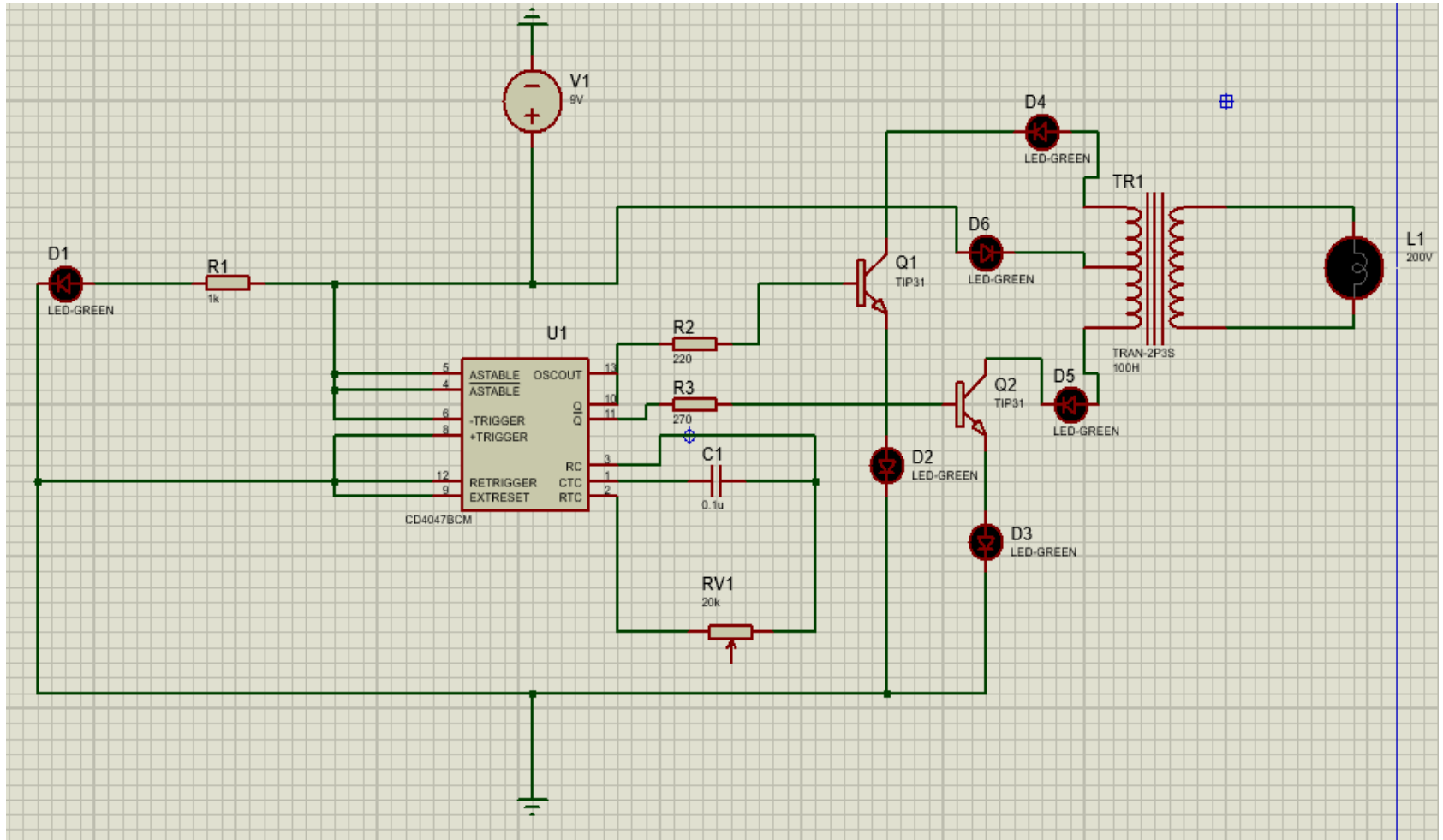
Power efficient mini inverter project

Objective : To convert a 12V DC supply to a 220V AC
supply

Mini Inverter

[Inverter Circuit](#) converts Direct Current (DC) supply into Alternating Current (AC) supply. It uses switching device like Transistors, MOSFETs or IGBTs along with Transformer and rapidly switch the DC supply ON and OFF so that transformer coil will produce varying magnetic flux and this will cut the other side windings in transformer and makes High Voltage AC through electromagnetic induction. Here 12V DC to 220V AC [Inverter](#) Circuit using [CD4047](#) CMOS low power multivibrator IC designed with few easily available external components. It can be used as Power Backup, Emergency power supply with rechargeable [battery](#), or [Solar power](#) systems, etc.,

Circuit Diagram :



Components Required :

- IC CD4047 = 1
- 12-0-12V AC Step Down Transformer 1 Amps
- Power Transistor TIP31C NPN = 2
- Resistor 220Ω = 2
- Variable Resistor $20K\Omega$ = 1
- Resistor $1K\Omega$ = 1
- [LED](#) 5mm Green = 1
- Capacitor $0.1\mu F$ = 1
- Overall Budget : Rs.1663
- Order status (Ordered)
- Delivery expected till 20th October (as of 24/09/2024)

Thank You !!