

# **GREEN TIGER MOBILITY PVT LTD**

A PROJECT REPORT ON

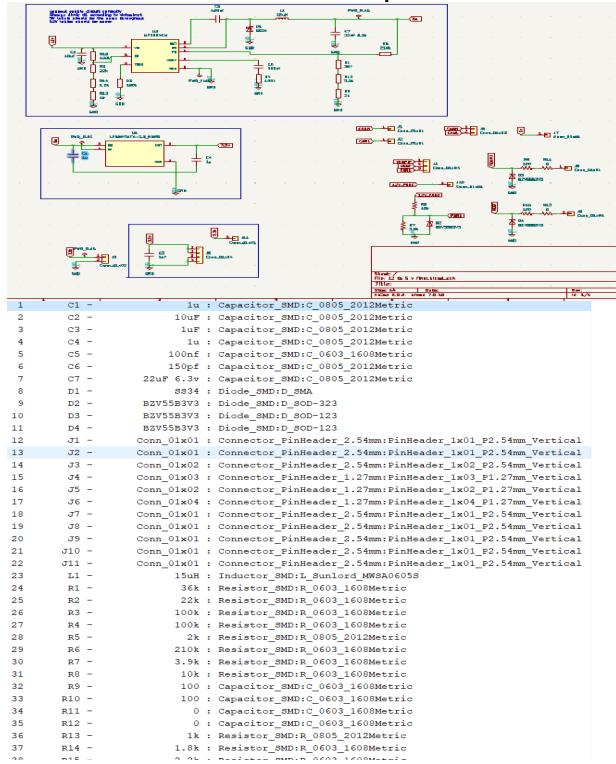
Voltage regulator board using  
MP1584 IC Using Kicad

**Submitted by**

**M MANUHASA**

## 12 to 3.3 Voltage Regulator

## Circuit and List of components used





## About project And In kicad learning process ,I gained proficiency in several key areas

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**Introduction:** This project involves designing a voltage regulator circuit using the MP1584 module. The goal is to convert a 12V input voltage to a 3.3V output voltage. The MP1584 is a high-frequency, synchronous, rectified, step-down, switch-mode converter with built-in power MOSFETs. It offers a very compact solution to achieve a 3A continuous output current over a wide input supply range.

**Design Process:** The design process was carried out using KiCad, a popular open-source electronics design automation suite. The process involved the following steps:

1. **Schematic Design:** The first step was to create a schematic diagram of the circuit. This included the MP1584 module, along with input and output capacitors, an inductor, and other necessary components.
2. **PCB Layout:** After the schematic was complete, the next step was to design the PCB layout. This involved placing the components on the board and routing the electrical connections between them

**Through this project, I likely gained a variety of skills and knowledge:**

3. **Understanding of Voltage Regulation:**
  4. I have learned about the importance of voltage regulation in electronic circuits and how to use a step-down converter to achieve this.
  5. **Circuit Design Skills:** I gained experience in designing a voltage regulator circuit, selecting appropriate components, and understanding their roles within the circuit.
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- 6. **Understanding of Power Electronics:** This project likely deepened my understanding of power electronics, a key area in electrical engineering that deals with the control and conversion of electric power.
  - 7. **Experience with Real-World Components:** Working with the MP1584 module, a real-world component, I gained insights into its characteristics, specifications, and performance.
  - 8. **Software Skills:** Using KiCad, an open-source electronics design automation suite, I honed my software skills, which are increasingly important in modern engineering projects.
  - 9. **Critical Thinking and Problem-Solving:** Throughout the project, I have encountered and overcome various challenges, enhancing your critical thinking and problem-solving skills.
  - 10. **Confidence in Handling Electronics Projects:** Successfully completing this project I have boosted your confidence in handling similar electronics projects in the future.
  - 11. **Proficiency in KiCad:** I learned how to use KiCad for schematic capture and PCB layout, which are valuable skills in electronics design.
  - 12. **Documentation and Reporting:** Writing a report about my project helped me to develop my technical writing skills, which are crucial for effectively communicating your work.
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### **Conclusion:**

The project of designing a 12V to 3.3V voltage regulator using the MP1584 module and KiCad was a success. It provided a practical understanding of voltage regulation principles, the use of step-down converters, and the application of electronic design automation tools.

The project demonstrated the effective use of the MP1584 module to achieve a compact, efficient, and reliable voltage regulation solution. The hands-on experience of designing the schematic, laying out the PCB, and assembling the circuit provided valuable insights into the practical aspects of electronics design.

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