



Circuit Simulation Project

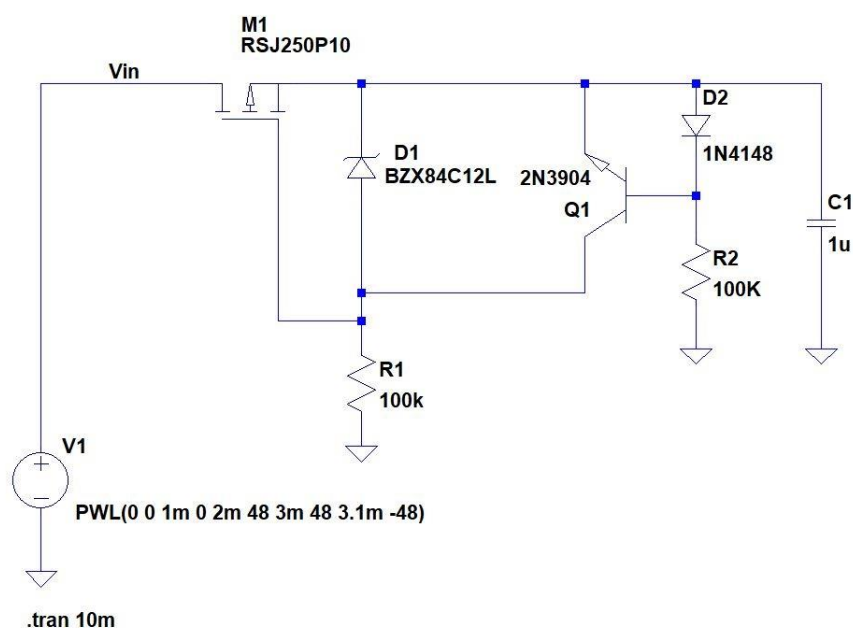
<https://esim.fossee.in/circuit-simulation-project>

Name of the participant : Tharun D

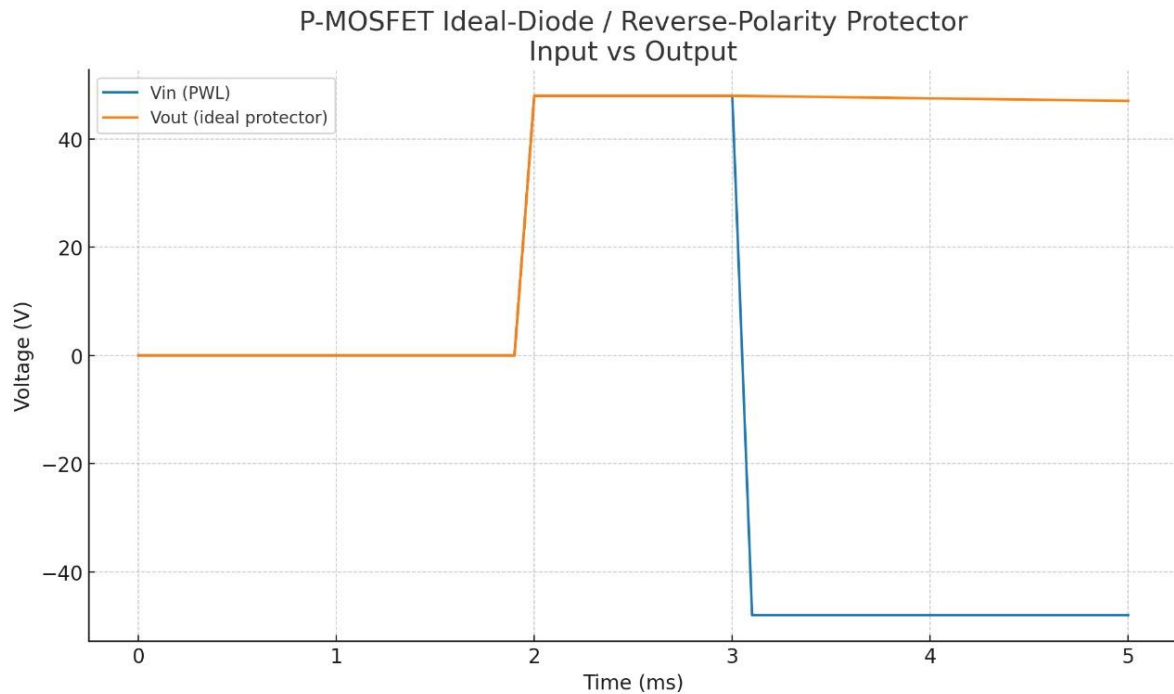
Title of the circuit : P-MOSFET ideal-diode / reverse-polarity protector

Theory/Description : The P-MOSFET ideal-diode / reverse-polarity protector is an electronic circuit designed to safeguard devices from damage caused by incorrect power supply connections. By utilizing the intrinsic body diode and gate-source voltage control of a P-channel MOSFET, the circuit allows current to flow in the forward direction with minimal voltage drop while effectively blocking current in the reverse direction. In normal operation, the MOSFET conducts with low resistance, improving efficiency compared to traditional diode protection. In the event of reverse polarity, the MOSFET remains off, preventing reverse current flow and protecting sensitive components.

Circuit Diagram(s) :



Results (Input, Output waveforms and/or Multimeter readings) :



Source/Reference(s) :

Balogh, L. (1998). Using MOSFETs for reverse polarity protection in power supply designs.
Texas Instruments Application Report SLVA139

<https://picture.iczhiku.com/resource/eetop/ShItWfHZGpAtWNcn.pdf>