Circuit Simulation Project

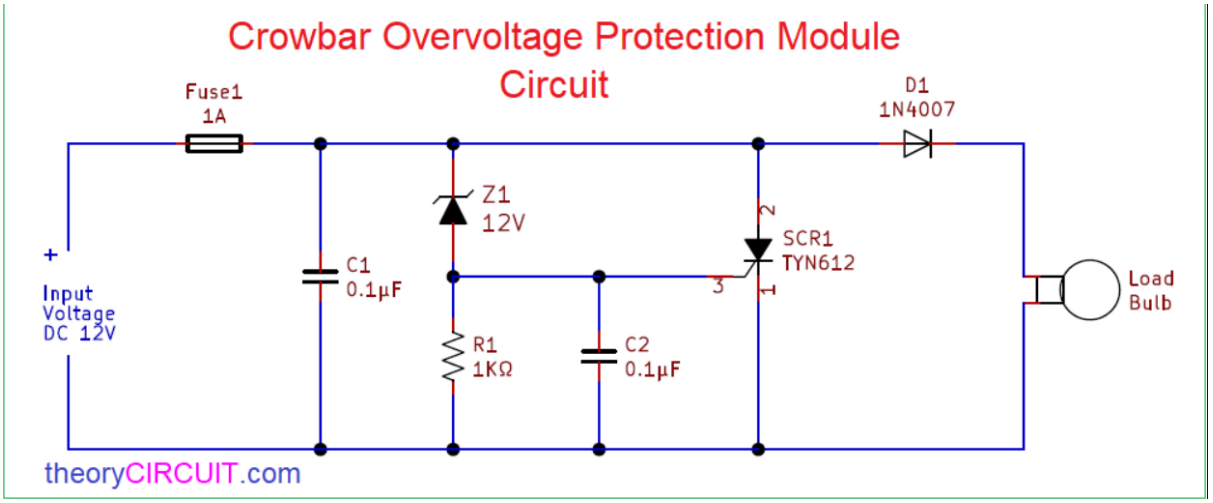
https://esim.fossee.in/circuit-simulation-project

Name of the participant : K.S.Madhavkrishnan

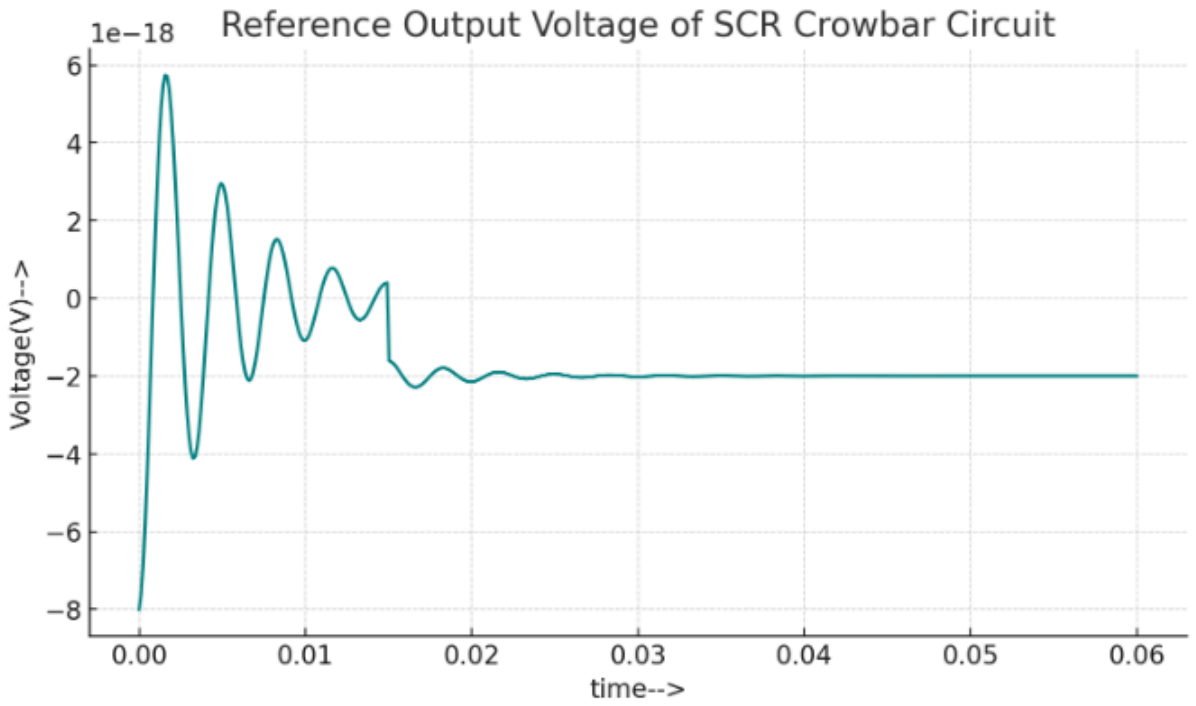
Title of the circuit : SCR-Based Crowbar Circuit for Overvoltage Protection

Theory/Description : The SCR crowbar circuit provides fast and reliable overvoltage protection for sensitive electronic devices. It uses a Zener diode to sense when the supply voltage exceeds a safe threshold. When this happens, the Zener diode triggers the SCR, which creates a short circuit across the power supply. This action blows the fuse and disconnects the load, preventing damage from overvoltage. Simple, cost-effective, and quick to respond, the SCR crowbar circuit is a standard solution in regulated power supplies and critical electronic systems .

Circuit Diagram(s) :



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



Source/Reference(s) :

1. Rashid, M. H. (2014). *Power Electronics: Circuits, Devices & Applications* (4th ed.). Pearson.

2. Mohan, N., Undeland, T., & Robbins, W. (2012). *Power Electronics: Converters, Applications, and Design* (3rd ed.). Wiley.

3. https://www.electronics-notes.com/articles/analogue_circuits/thyristor-scr-triac/overvoltage-protection-crowbar-circuit.php