

CAPSTONE PROJECT: Voltage Regulator and Switching Current Limiting Circuit

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ABSTRACT:

One of the main hazards in electrical or electronic circuits is overcurrent, or an excessive amount of current being delivered to the load due to a short circuit.

The simplest form of current limiting in circuits is a fuse. As the current exceeds the fuse's limits, the fuse melts or blows, disconnecting the load from the source. This type of current limiting is mostly used for protecting house-hold mains because they are passive elements, which makes them secure. The drawback is that once the fuse is blown, it must be replaced.

Another method of protecting electrical circuits is using a switching current limiter. A switching current limiter sets a maximum load current by using sensing resistors along with transistors that act as on and off switches.

Our project explores how current can be limited independent of the input voltage by passing signals through various circuits including a transformer, rectifier, filter, and regulator.