

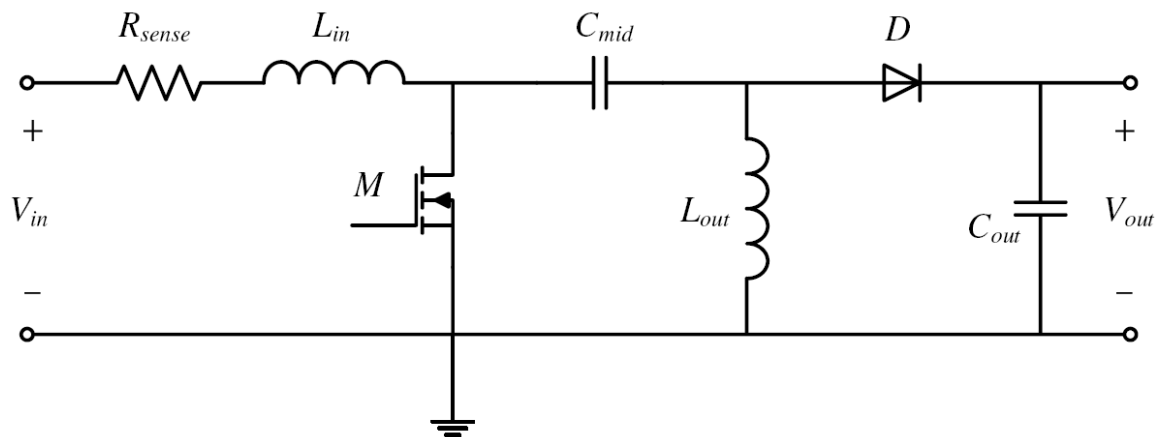
EECS 498: Power Electronics Fall 2010



Meeting the future's energy and environmental challenges will require the efficient conversion of electrical energy from one form to another. For example, the 120 VAC from an electrical outlet is converted to 19.5 VDC by a power supply for a laptop computer. Within the laptop, this 19.5VDC is converted to 12V, 5V, 3.3V, and 1.8V to drive various components within the computer. In another example, the DC output of a solar panel is converted into AC so that its power can be transferred to the electric utility.

This course will discuss the circuits used to efficiently convert AC power to DC, DC power from one voltage to another, and DC power to AC power. The components used in these circuits (e.g., diodes, transistors, capacitors, inductors) will also be covered in detail. A key aspect of power electronic circuits is the control algorithm used to

achieve the desired behavior (e.g., output voltage regulation), and so control theory as it applies to these circuits will be discussed.



SEPIC DC-DC Converter

Lectures: Monday & Wednesday 3-4:30

Lab: 1 hour per week (lab times to be determined)

Instructor: Prof. Heath Hofmann
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Prerequisites: EECS 215 and 216, or grad standing