Title

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by

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Acknowledgement

blah blah blah!

Abstract

blah blah blah!

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Chapter 1

Introduction

1.1 Inductor

A passive component designed to resist changes in current. Inductors are often referred to as "AC resistors". The ability to resist changes in current and store energy in its magnetic field account for the bulk of the useful properties of inductors. Current passing through an inductor will produce a magnetic field. A changing magnetic field induces a voltage which opposes the field-producing current. This property of impeding changes of current is known as inductance. The voltage induced across an inductor by a change of current is defined as:

$$V = L\frac{di}{dt}$$

Chapter 2

Applications

2.1 Buck Converters

A Buck converter takes the voltage from a DC source and converts the voltage of supply into lower DC voltage level. Some devices need a certain amount of voltage to run the device. Too much of power can destroy the device or less power may not be able to run the device.This output voltage is achieved by chopping the input voltage with a series of connected switches that apply pulses to an averaging inductor and capacitor circuit.

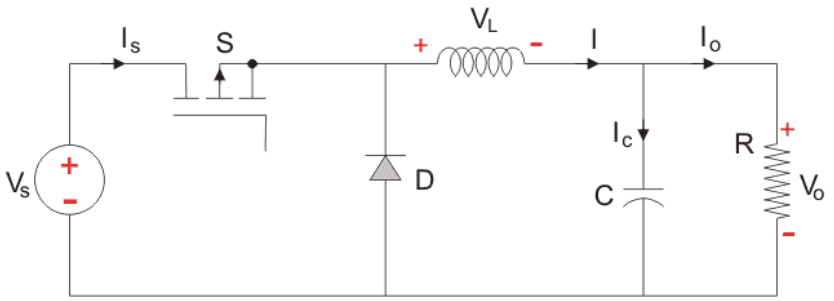

Figure 2.1: Buck Converter

For mathematical expressions of Inductance and Capacitance refer eq. 4.1 and eq. 4.2

Chapter 3

Methodology

3.1 Table

Table 3.1: Magnetic Data

TYPE/SIZE	ORDERING CODE	I_e(mm)	$A_e(mm^2)$	Ve(mm^3)	$W_a A_c(cm^4)$
14/2.5/5	041425EC	16.7	14.7	244	0.01
E 14 C	C41434EC	20.7	14.7	304	0.02
E 18 C	C41805EC	24.2	40.1	972	0.07
E 18	F41805EC	24.2	40.1	972	0.07
E 22/4/7	042107EC	25.7	37.1	960	0.06
E 22 C	C42216EC	32.3	76.0	2,451	0.27
E 22	F42216EC	32.5	78.5	2,550	0.27
E 32 C	C43208EC	41.4	130	5,380	0.71
E 32	F43208EC	41.4	130	5,380	0.71
E 36/6/18	043618EC	42.4	135	5,750	0.55

Chapter 4

Results

For Buck Converter

$$L = \frac{V_s - V}{\Delta i_L} D T_s \tag{4.1}$$

$$C = \frac{T_s \Delta i_L}{8 \Delta V} \tag{4.2}$$

Future Work

Bibliography

[1]

[2]