metin içeren bir resim

Açıklama otomatik olarak oluşturuldu

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**EE463 STATIC POWER CONVERSION I**

**Homework 2: DC/DC CONVERTERS**

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**Deadline:** 18/01/2023 23:59

**Lecturer:** Assoc. Prof. Ozan Keysan

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# INTRODUCTION

In this homework, Buck and Boost converters which are DC/DC converters, will be examined. The continuous current mode, power in the ideal case, and nonidealities in the real world will be examined for both converter types.

# SOLUTIONS

1. **Buck Converter**

**a)**

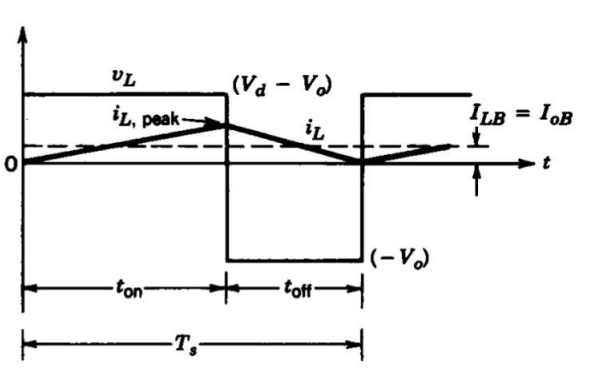


Figure 1: VL and IL graph for transition to the discontinuous current mode

In Figure 1, the boundary output current graph for DCM can be seen.

Since this boundary means that the minimum current, we need to find the lower value. So that input voltage is chosen 12V for the calculation.

**b)**

The output voltage is fixed and 5V. So



saat, kol saati, ölçü aleti içeren bir resim

Açıklama otomatik olarak oluşturuldu

To find maximum ripple, the maximum input voltage must be chosen.







**c)**

**d)**

**e)**

**f)**

1. **Boost Converter**

**a)**

**b)**

**c)**

**d)**

**e)**

**f)**

**g)**

# CONCLUSION

# APPENDIX