THE UNIVERSITY OF BRITISH COLUMBIA

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Mini Project 4

University of British Columbia

Electrical and Computer Engineering

ELEC 301

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Contents

List of Figures

List of Tables

1 Introduction

For this project, we will be using SPICE software to simulate active filters and oscillators.

2 Part A

2.0.1 Part 1

For this part, we will be designing a 2nd order Butterworth low pass active filter using the UA741 operational amplifier. Here is the circuit that we will be using for this part:

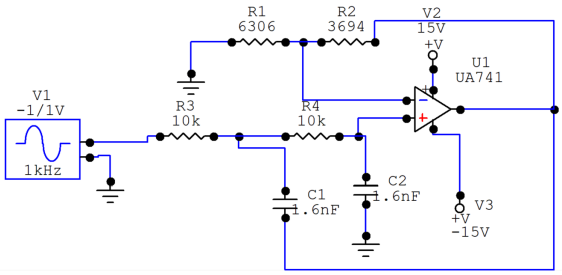

Figure 1: Second Order Butterworth Filter

The calculations to find the resistance R_1,R_2 and capacitance C, we will be using the formulas from the class notes [1]. The formulas can also be found from no. 1 in the Appendix.

3 Part B

4 Part C

5 Appendix

$$k = 3 - \sqrt{(2)} \tag{1}$$

(2)

6 References

1. ELEC 301 Class notes
2. Mini Project 4 Document
3. Standard Resistor and Capacitor Values (Canvas)
4. Circuit Maker SPICE Model