Scilab Manual for Basic Analog VLSI lab by Dr Sandhya Save Electronics Engineering University of Mumbai[1]

Solutions provided by
Dr Dr. Sandhya Save
Electronics Engineering
University of Mumbai

April 21, 2026

[1]Funded by a grant from the National Mission on Education through ICT, http://spoken-tutorial.org/NMEICT-Intro. This Scilab Manual and Scilab codes written in it can be downloaded from the "Migrated Labs" section at the website http://scilab.in

Contents

List of Scilab Solutions 3

1 CMOS Inverter Amplifier 5

2 CMOS transmission gate 7

3 NMOS current mirror circuit 9

4 NMOS Cascode current mirror circuit 11

5 NMOS Wilson current mirror circuit 13

List of Experiments

List of Figures

1.1 CMOS inverter 6
1.2 CMOS inverter 6

2.1 CMOS transmission gate 8
2.2 CMOS transmission gate 8

3.1 Basic current mirror circuit 10
3.2 Basic current mirror circuit 10

4.1 Cascode current source 12
4.2 Cascode current source 12

5.1 Wilson current mirror 14
5.2 Wilson current mirror 14

Experiment: 1

CMOS Inverter Amplifier

This code can be downloaded from the website wwww.scilab.in

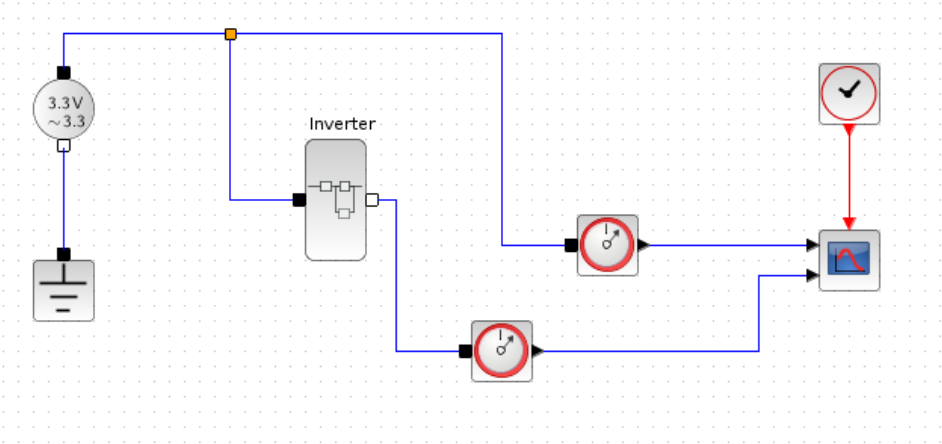

Figure 1.1: CMOS inverter

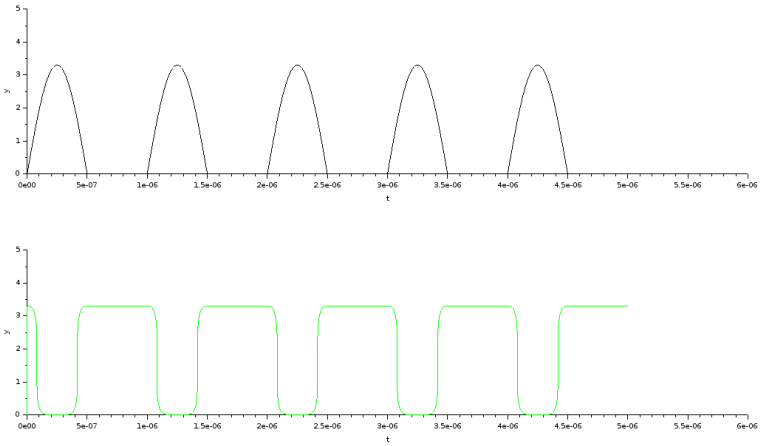

Figure 1.2: CMOS inverter

Experiment: 2

CMOS transmission gate

This code can be downloaded from the website wwww.scilab.in

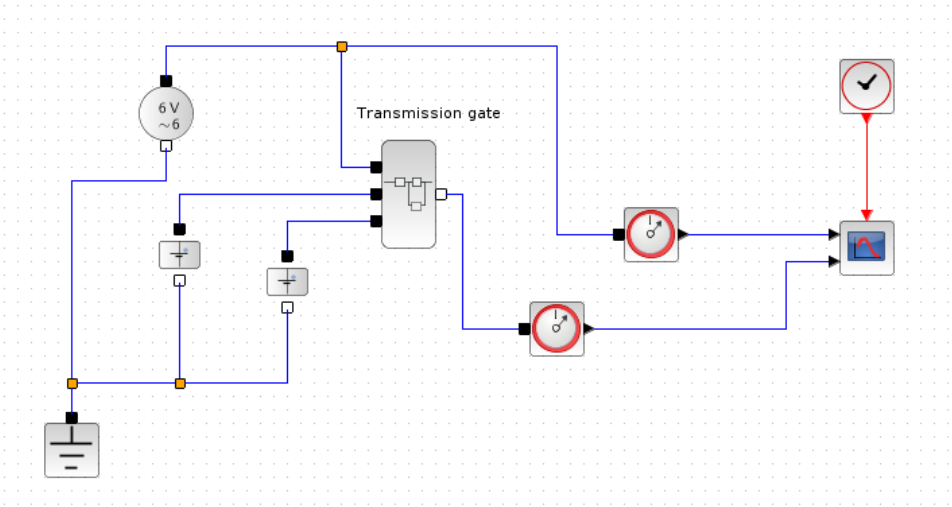

Figure 2.1: CMOS transmission gate

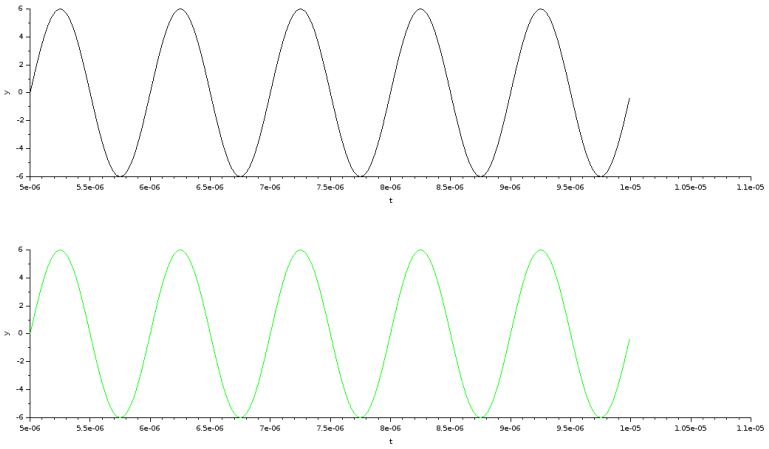

Figure 2.2: CMOS transmission gate

Experiment: 3

NMOS current mirror circuit

This code can be downloaded from the website wwww.scilab.in

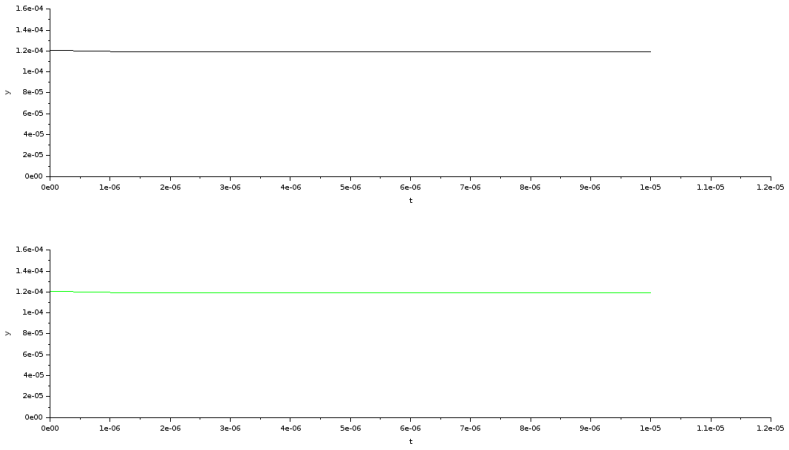

Figure 3.1: Basic current mirror circuit

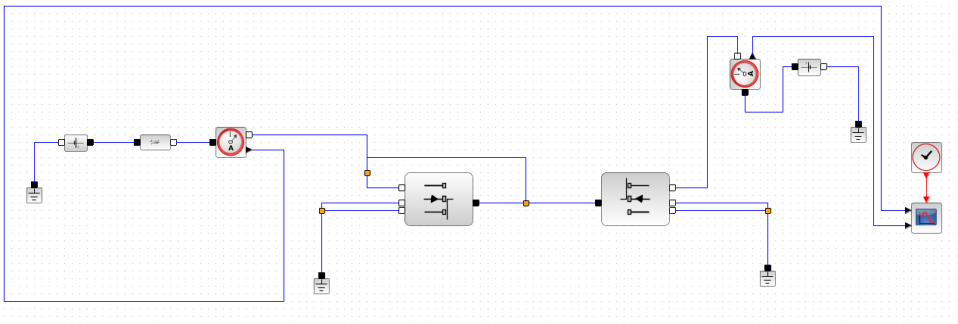

Figure 3.2: Basic current mirror circuit

Experiment: 4

NMOS Cascode current mirror circuit

This code can be downloaded from the website wwww.scilab.in

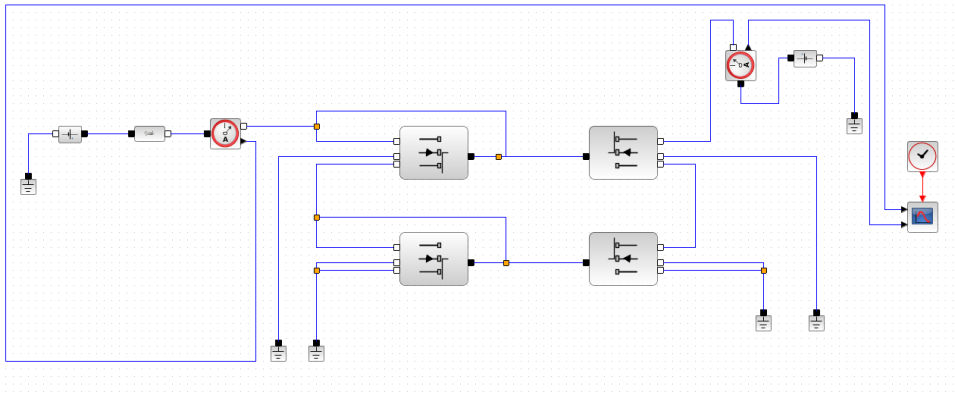

Figure 4.1: Cascode current source

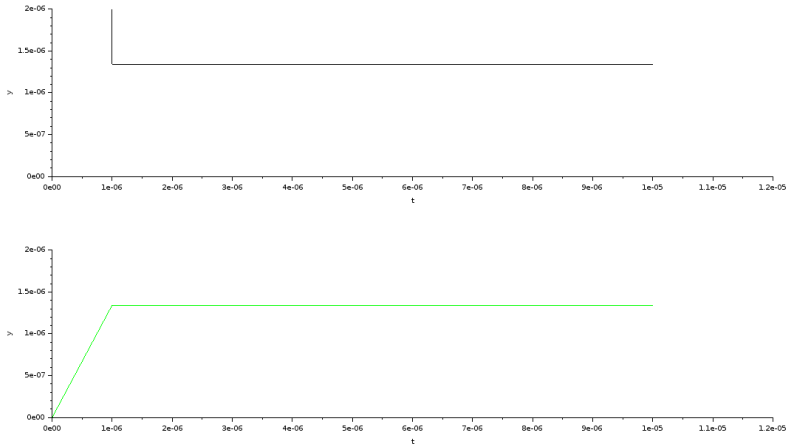

Figure 4.2: Cascode current source

Experiment: 5

NMOS Wilson current mirror circuit

This code can be downloaded from the website wwww.scilab.in

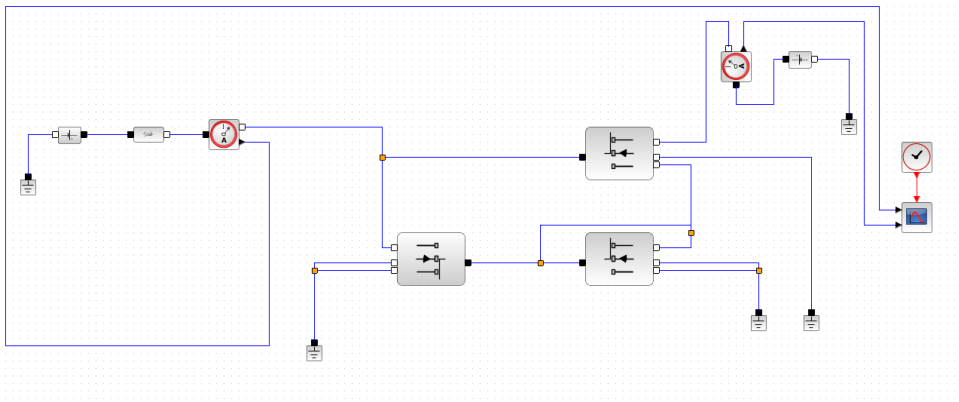

Figure 5.1: Wilson current mirror

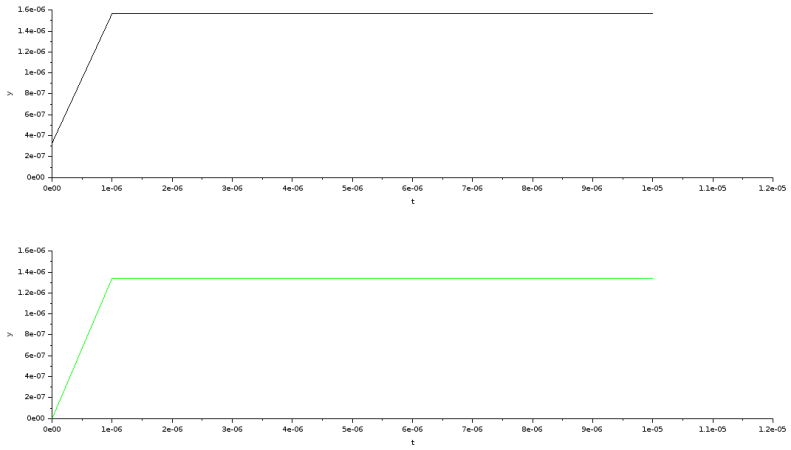

Figure 5.2: Wilson current mirror