UNIVERSITY OF CALIFORNIA AT BERKELEY

College of Engineering

Department of Electrical Engineering and Computer Sciences

EE105 Lab Experiments

Experiment 5: MOSFET Characterization

Lab Report

Student 1 name:

Student 2 name:

Lab group: Tuesday 8-11 / Tuesday 5-8 / Thursday 8-11 / Thursday 5-8

# Lab

# MOSFET Characterization

Using Python/Matlab, find VT, KP, and channel length modulation (λ) of the transistor. You can use curve fitting packages/toolboxes.

Plot ID vs. VGS.

Plot gm vs. VGS.

# MOSFET Capacitance vs. Voltage

Oscilloscope traces (showing input and output) for Vgs = 1.2V to 2.2V in 0.1V steps

Parasitic Capacitance trace:

Cp:

Plot of Vgs vs. Cgs:

Why does the capacitance change with gate-source voltage? Explain it briefly.

# Resistive Touch Sensor

Before touching

* VD
* VG
* VS
* ID
* Region

After touching

* VD
* VG
* VS
* ID
* Region