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UNIVERSITY OF CALIFORNIA, BERKELEY
EE40: Introduction to Microelectronic Circuits

MOSFET Report

1. Sketch the measured I-V curve of a resistor. Annotate one non-zero point (voltage, current) on the line. Use this measurement to calculate the value of R_{DUT} .
2. Sketch the I-V curve of the diode with cathode (-) grounded (indicate voltage scales). Confirm that the threshold voltage is reasonable for this diode.
3. Sketch I-V curve of the diode with anode (+) grounded (indicate voltage scales).

4. Sketch the I-V curve of a capacitor at a convenient frequency (indicate voltage scales and frequency). Measure the major and minor axes of the shape (V_{A1pk} and V_{A2pk}). Use these two measurements to calculate the measured capacitor value.

5. Sketch the I-V curves of the MOSFET (indicate voltage scales and V_{GS} for each curve). Why is the MOSFET restricted to the ohmic region for higher V_{GS} ? Pick one suitable V_{GS} and measure the small signal resistance of the MOSFET in the ohmic (triode) region and saturation region.