EE2112- Lab 1 Submission Sheet

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Laboratory Section: L02

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Date of submission:

Resistance Measurements

1. **Fill in Table 1 and state whether each resistor meets the manufacturer's tolerance specification. Give the reason why your fingers can't touch the resistor when measuring it. (40 pts)**

Table 1: Resistance Measurements (Color Codes, Measurements, and Percent Error) [Table 1 of the lab manual]

Nominal Value	Color Code	Nominal Tolerance(%)	Measured Resistance	Percent of Error (%)	Within Manufacturer's
1.5kΩ	Br Gr Rd Gold	5%	1.494kΩ	0.4%	yes
2.2kΩ	Rd Rd Rd Gold	5%	2.169kΩ	1.40%	yes
3.3kΩ	or or rd gold	5%	3.290kΩ	0.30%	yes
4.7kΩ	yellow viol rd gold	5%	4.642kΩ	1.23%	yes

~~[illegible]~~ if you tuch the resistor you ~~[illegible]~~ should be ~~[illegible]~~ is parallel with the resistor. ~~[illegible]~~

TA's initials:

Rahman
09/10/19

Voltage and Current Measurements for Single-Resistor Circuit

2. **Fill in Table 2 in your data sheet and compare your measured and calculated values of I and V. How does the value of V/I compare to the value you measured in Table 1? Give reasons for the similarities or differences on your data collection report. Justify your answer. (10 pts)**

Table 2: Voltage and Current Measurements for Single-Resistor Circuit [Table 3 of the lab manual]

V_S(V)	V_{R_1}(V)	I_{R_1}(mA)	$\frac{V}{I}$ (kΩ)	V_{OC}(V)	I_{OC}(mA)
8	8	1.72	4.65	8	0

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Voltage and Current Measurements for Four-Resistor Circuit

3. **Theoretically in Fig. 14 which two resistors should have the same current through them? Why? (10 pts)**

R_3 and R_4. Current does not change when two resistors are in series.

4. **Fill in Table 3 in your data collection report. (40 pts)**

Table 3: Voltage and Current Measurements for Four-Resistor Circuit [Table 5 of the lab manual]

R (kΩ)	V_R(V)	I_R(mA)	$\frac{V_R}{I_R}$ (kΩ)	Percent of Error%
1.5	3.728	[illegible]	[illegible]	0.4%
4.7	6.273	1.351	4.643	1.21%
2.2	2.489	1.147	2.170	1.36%
3.3	3.784	1.147	3.299	0.03%

TA's initials:

09/10/19

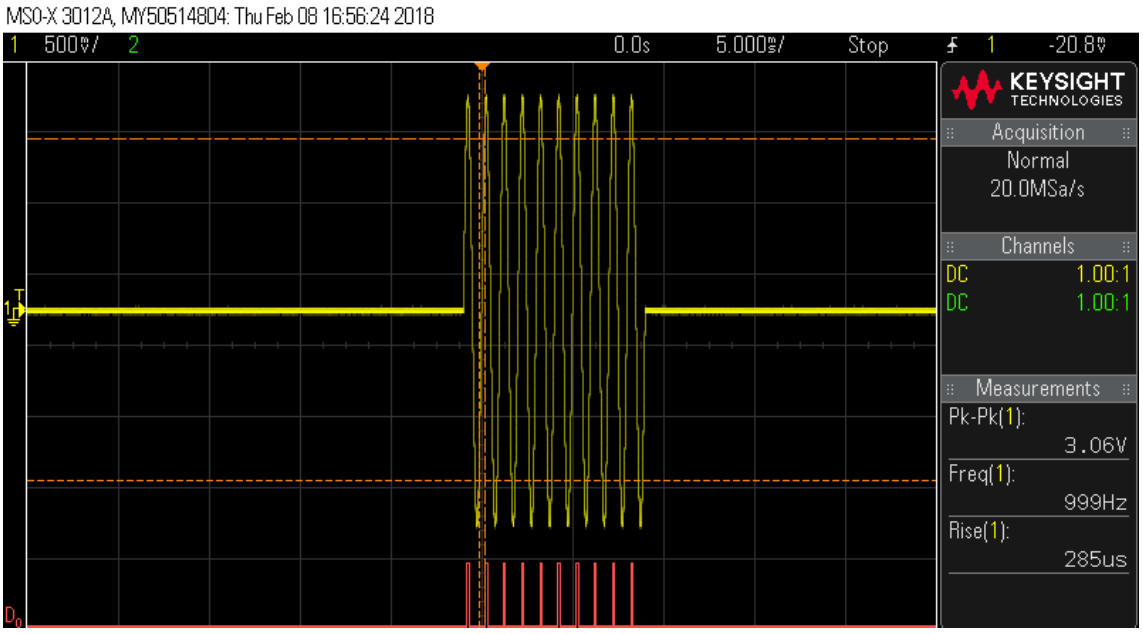

Figure 1: A picture of a capture of a 10 MHZ sine wave with channel one being the wave and D0 is the digital input with the same 10 MHZ wave.

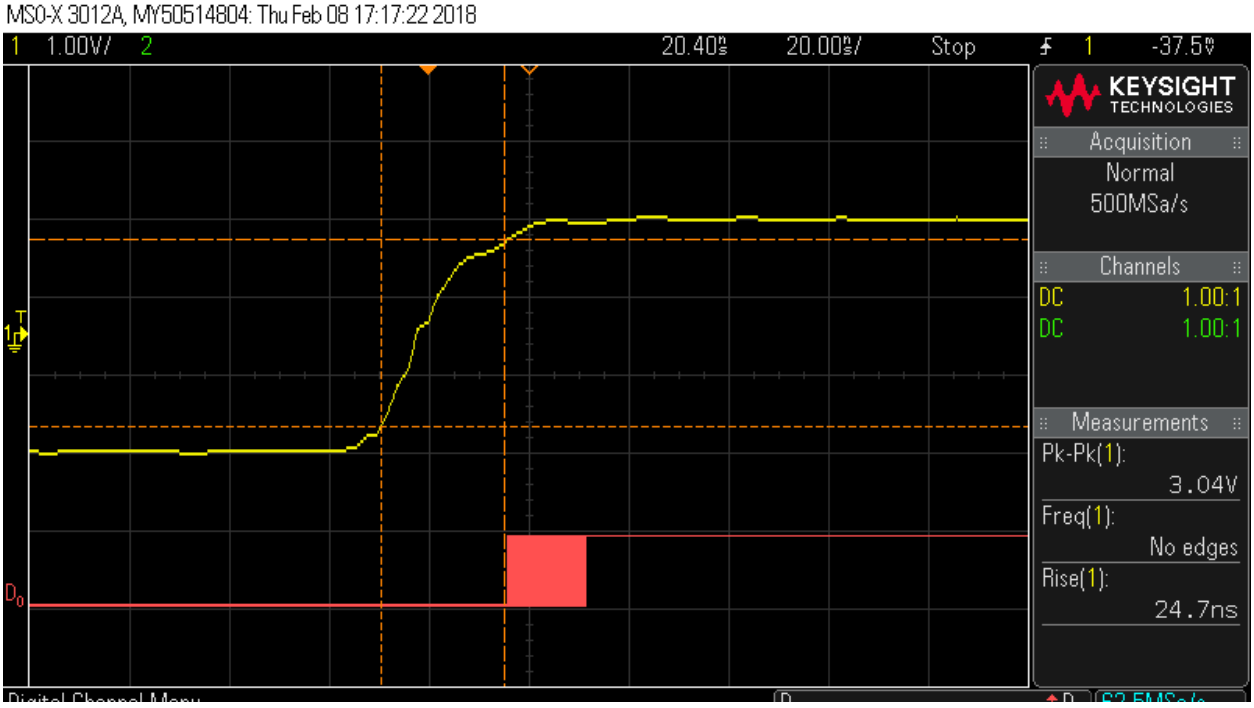

Figure 2: A Picture of a bounce from pulse generated buy a waveform generator. D0 is the digital input and Channel 1 is the pulse.

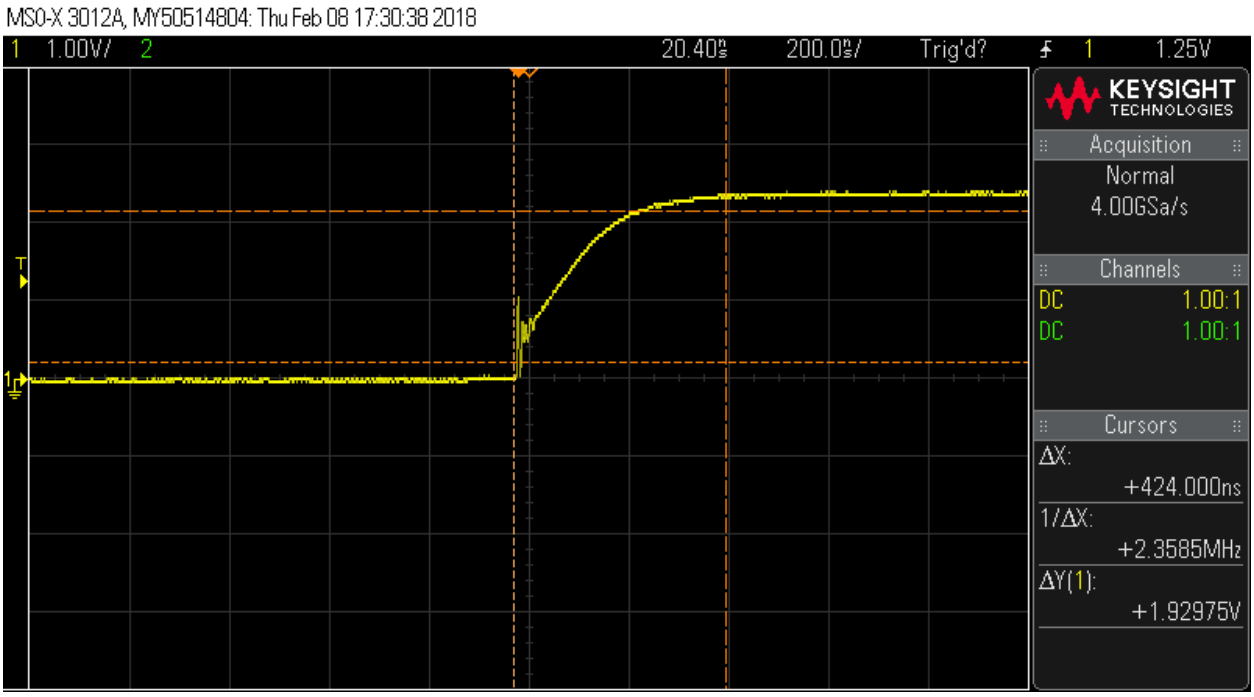

Figure 3: A picture of how a switch behaves while toggling it from high to low. The time from low to high is 424 ns.