Lab 1 –Resistor Variability

|  |  |
| --- | --- |
| **Sample** | **Measured  Value** |
| 1 | .9990k |
| 2 | .9997k |
| 3 | .9887k |
| 4 | 1.0046k |
| 5 | 1.0035k |
| 6 | .9872k |
| 7 | .9929k |
| 8 | .9914k |
| 9 | .9889k |
| 10 | 1.0018k |
| 11 | 1.0004k |
| 12 | 1.0016k |
| 13 | 1.0004k |
| 14 | .9980k |
| 15 | 1.0023k |
| 16 | 1.0007k |
| 17 | .9989k |
| 18 | .9994k |
| 19 | .9849k |
| 20 | 1.0020k |

Names: ­­­­­­­­­­­­­­­­Brandon Steup, ­­­­­­­­­­­­­­­Corey King

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The purpose of this lab is to:

Learn the how resistors vary using 20 resistors with the same color code.

Select a set of 20, 1 kohm resistors.

Measure and record the resistance of each resistor.

Equipment needed:

1 – Digital Multimeter

1 – 20 resistors with the same color code.

Resistor color code = ­­­­­­­­­­­­­­­\_brown black red gold\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Resistor value = \_\_\_1 kohm\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Resistor tolerance = \_\_\_5%\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Using Microsoft Excel plot the resistor values and determine:

Smallest resistance = ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_.9849\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Largest resistance = \_\_\_\_\_\_\_\_\_1.0046\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Average resistance = \_\_\_\_\_\_\_\_.997315\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Standard Deviation = \_\_\_\_\_\_0.005977614\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do any of your resistor values exceed the part tolerance? Negative

Observations:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_