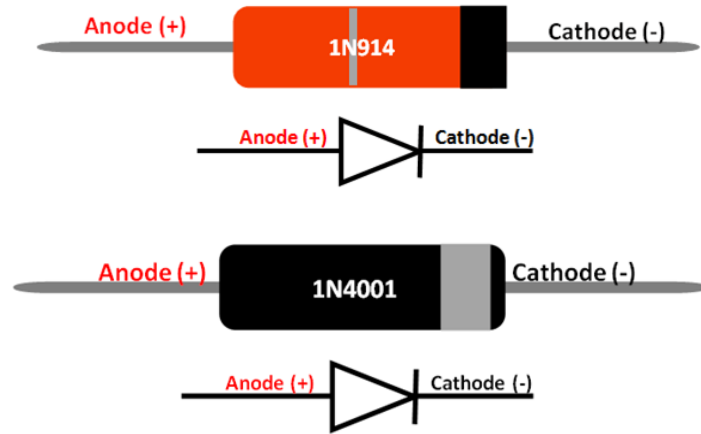


ME133 Lab3 Hints

Diode Pinout (1N914 & 1N4001)



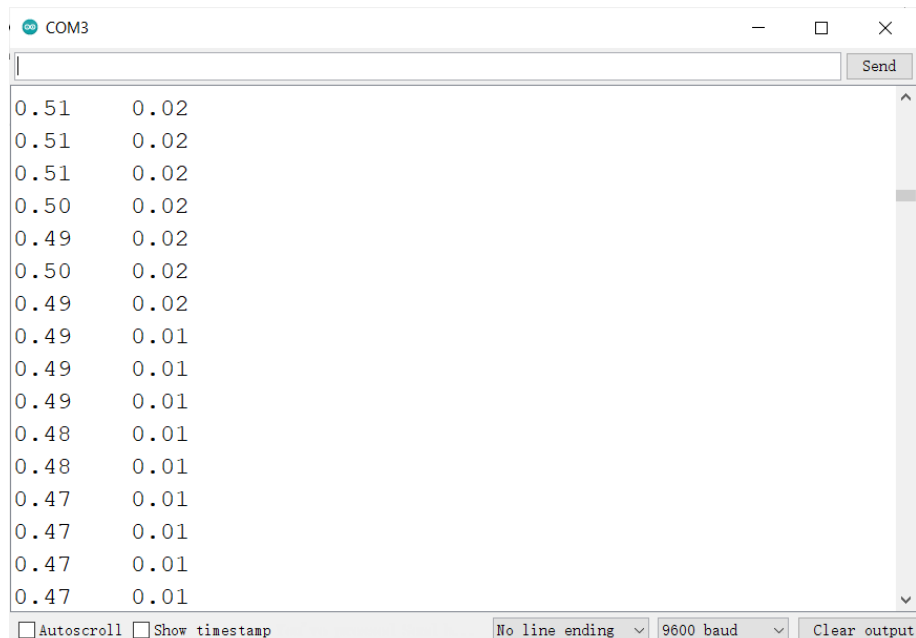
Diode Voltage Drop

Diode voltage drop basically refers to the forward bias voltage drop. It occurs in a diode present in an electrical circuit when current passes through it. This forward bias voltage drop is the result of the action of the depletion region formed by the PN junction under the effect of an applied voltage.

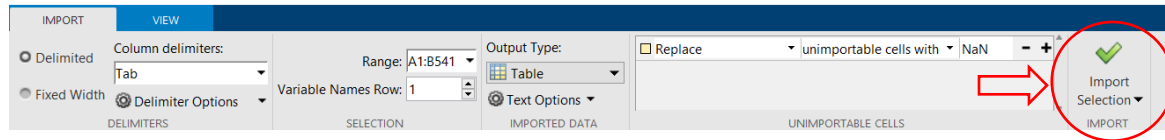
<https://lambdageeks.com/diode-voltage-drop/>

Transfer Data from Serial Monitor

- Select all and copy all data. Paste data to an excel file or text file. Before doing that, change your code to print number only (add space or tab between each number), as shown in figure below.



- b) Open MATLAB, generate a new file for plotting. Dragging your data file (.txt or .xlsx) to the workspace, then import data to workspace by click button on the top.



- c) After that, you will get a table in your workspace, using “table2array()” command to transfer your data from a table to a double file.

<https://www.mathworks.com/help/matlab/ref/table2array.html>

```
NewTextDocument    541x2 table
NewTextDocument_T  541x2 double
```

- d) Finally, you can generate your figure by using “plot()” command and compare your data points with your theoretical result (a line). A sample code is given below.

```
x = 0:0.1:5;
y = x;
figure;
plot(x,y);
hold on;
plot(NewTextDocument_T(:,1),NewTextDocument_T(:,2),'.');
xlim([0 5]);
ylim([0 3]);
xlabel("V_in");
ylabel("V_out");
legend("Experimental Result","Theoretical Result");
```

(The potentiometer is not perfect, it's ok if some parts of your data points look like a cloud)