

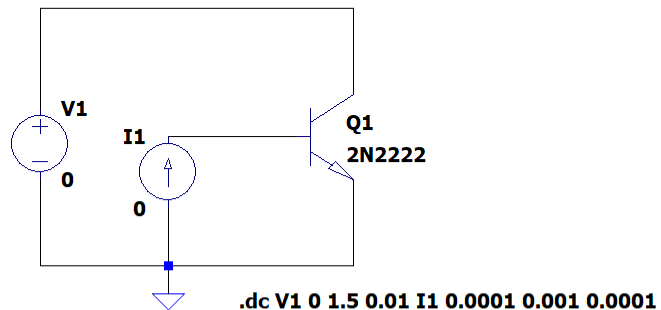
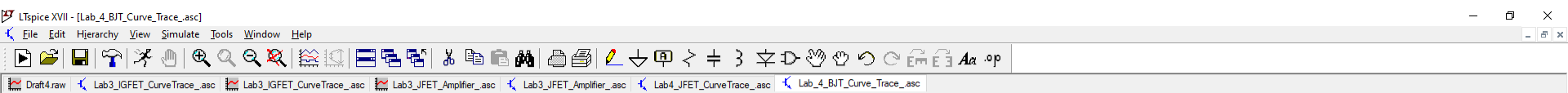
ELC 333 Lab 4

Addendum

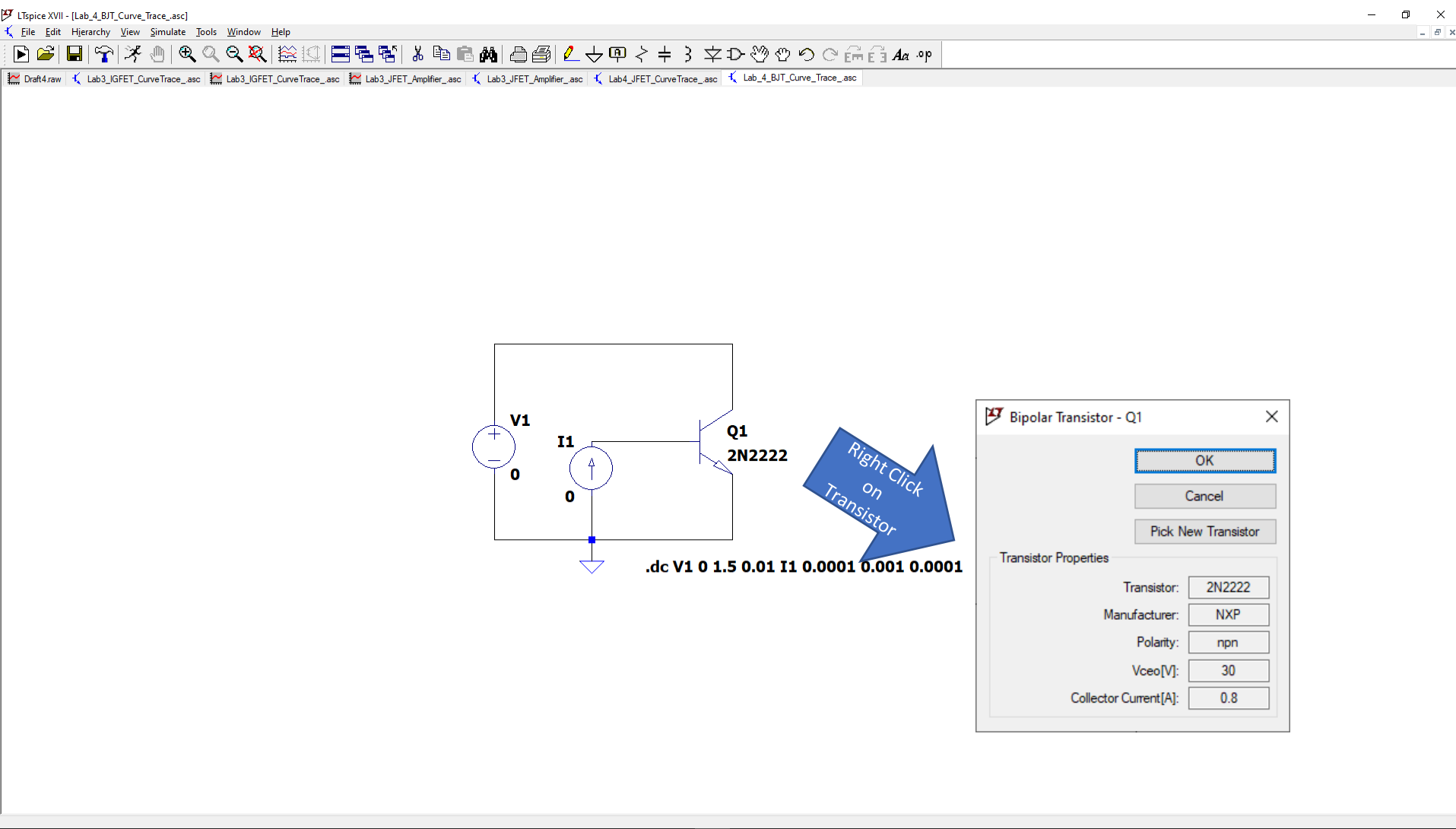
March 26, 2020

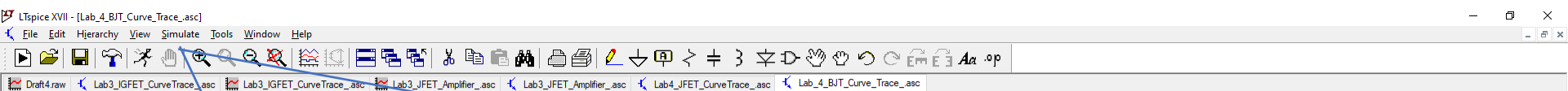
Directions Concerning The Curve Tracer in Lab 4

- These slides are intended to replace parts 1,2, and 3 in the Procedure portion of Lab 4. These steps initially required a Tektronix Curve Tracer. A Curve Tracer is to be simulated in LT-Spice.
1. Download and install LT-Spice onto your machine if you haven't already done so. <https://www.analog.com/en/design-center/design-tools-and-calculators/ltspice-simulator.html#>
 2. Open the file 'Lab_4_BJT_Curve_Trace_.asc'.
 3. Follow the remaining slides to operate this virtual curve tracer on your machine.
 4. Export the data to Lab_4_BJT_Curve_Trace_.txt and place in an Excel Spread Sheet.
 5. In today's Lab I'll provide more specific instructions on how to estimate Beta and the piece-wise linear model found in the Lab 4 instructions.



Lab 4 Curve Tracer as Simulated in LT-Spice





Edit Simulation Command

Transient AC Analysis DC sweep Noise DC Transfer DC op prt

Compute the DC operating point of a circuit while stepping independent sources and treating capacitances as open circuits and inductances as short circuits.

1st Source 2nd Source 3rd Source

Name of 1st source to sweep:

Type of sweep:

Start value:

Stop value:

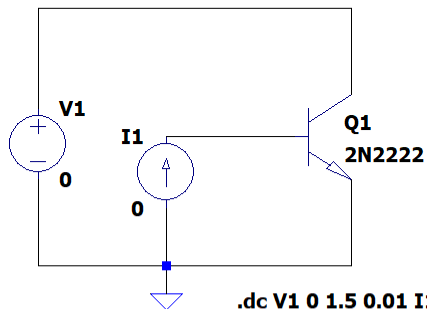
Increment:

Syntax: .dc [<oct,dec,lin>] [<Source1>] [<Start>] [<Stop>] [<Incr>] [<source2> ...]

.dc V1 0 1.5 0.01 I1 0.0001 0.001 0.0001

Cancel OK

1st Source



.dc V1 0 1.5 0.01 I1 0.0001 0.001 0.0001

Edit Simulation Command

Transient AC Analysis DC sweep Noise DC Transfer DC op prt

Compute the DC operating point of a circuit while stepping independent sources and treating capacitances as open circuits and inductances as short circuits.

1st Source 2nd Source 3rd Source

Name of 2nd source to sweep:

Type of sweep:

Start value:

Stop value:

Increment:

Syntax: .dc [<oct,dec,lin>] [<Source1>] [<Start>] [<Stop>] [<Incr>] [<source2> ...]

.dc V1 0 1.5 0.01 I1 0.0001 0.001 0.0001

Cancel OK

2nd Source

Running the Simulation

