ELEC-313
Lab 8: Bipolar Junction Transistor Characterization

November 16, 2013

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1 Objective

The objective is to plot the output characteristic of a common-emmitter transistor circuit, and use it to determine the current gain and output conductance.

2 Equipment

Transistor: 2N7000	Power supply: HP E3631A
Function generator: HP 33120	Multimeter: HP 34401A
Oscilloscope: Agilent 54622D	Capacitors: 0.1 µF
Resistors: 100 Ω, 300 Ω, 470 Ω, 1 kΩ (x2)	33 kΩ, 100 kΩ (x2)

3 Schematics

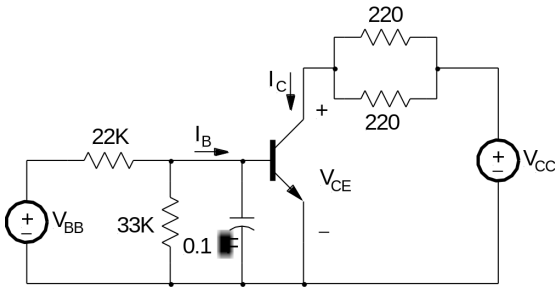

Figure 1: Common-emitter transistor circuit

4 Procedure

5 Results

6 Conclusion

7 Equations

$$h_{oe} \approx \frac{1}{r_o} = \frac{\Delta i_C}{\Delta v_{CE}} \tag{1}$$

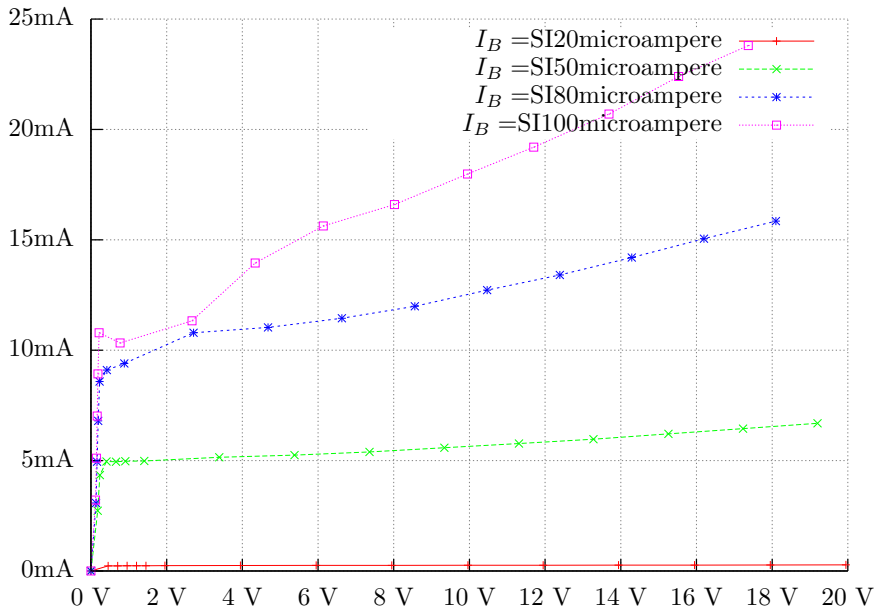

Figure 2: V_{CE} vs. I_C