

22.03.2011

Transistors = trans resistor

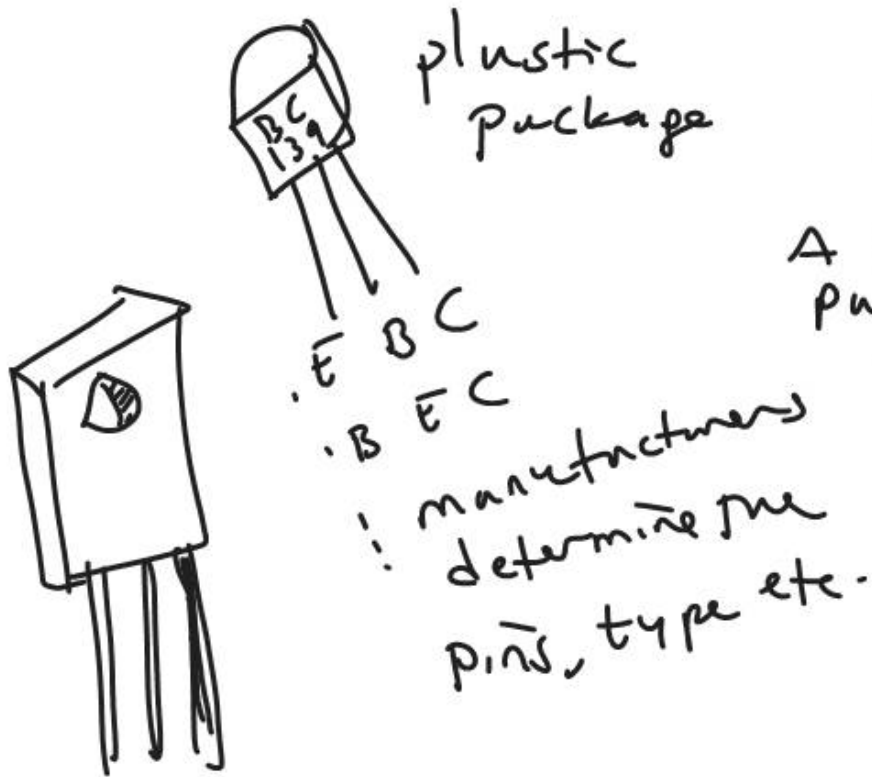
a 3 terminal semiconductor device



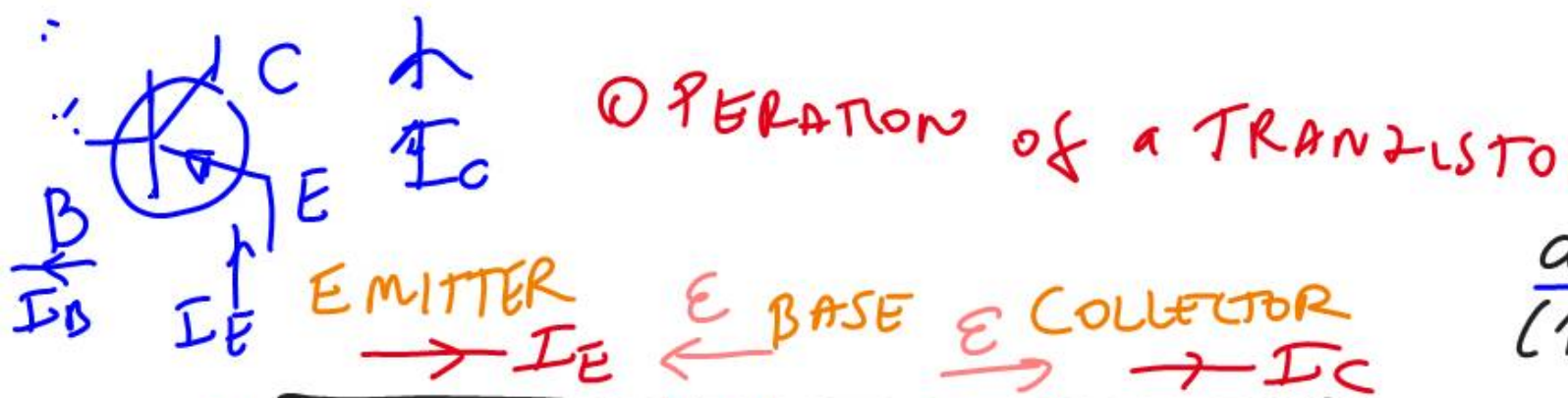
E = emitter

B = base

C = collector

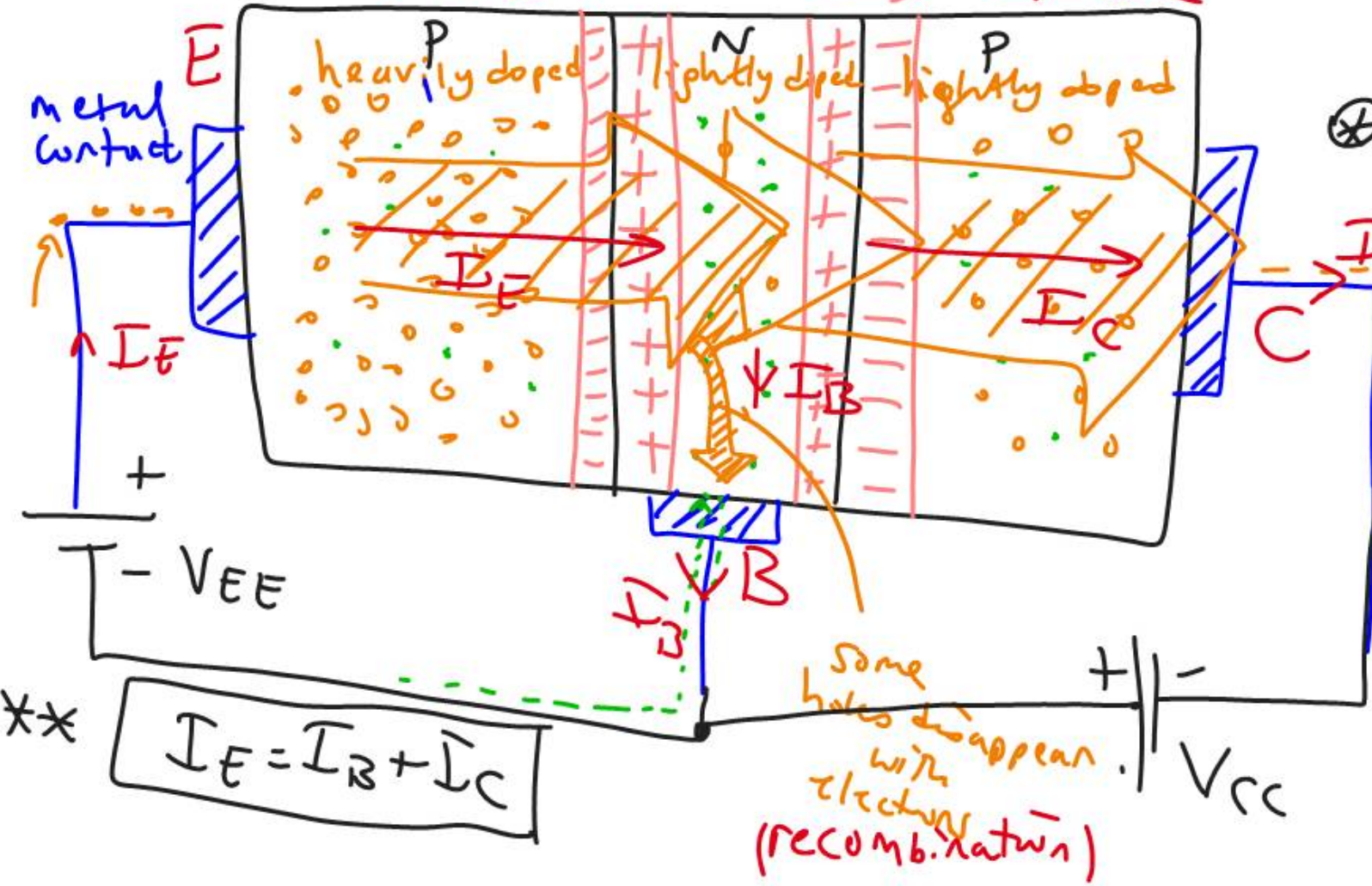


OPERATION of a TRANSISTOR



a PNP transistor
(There are NPN transistors as well)

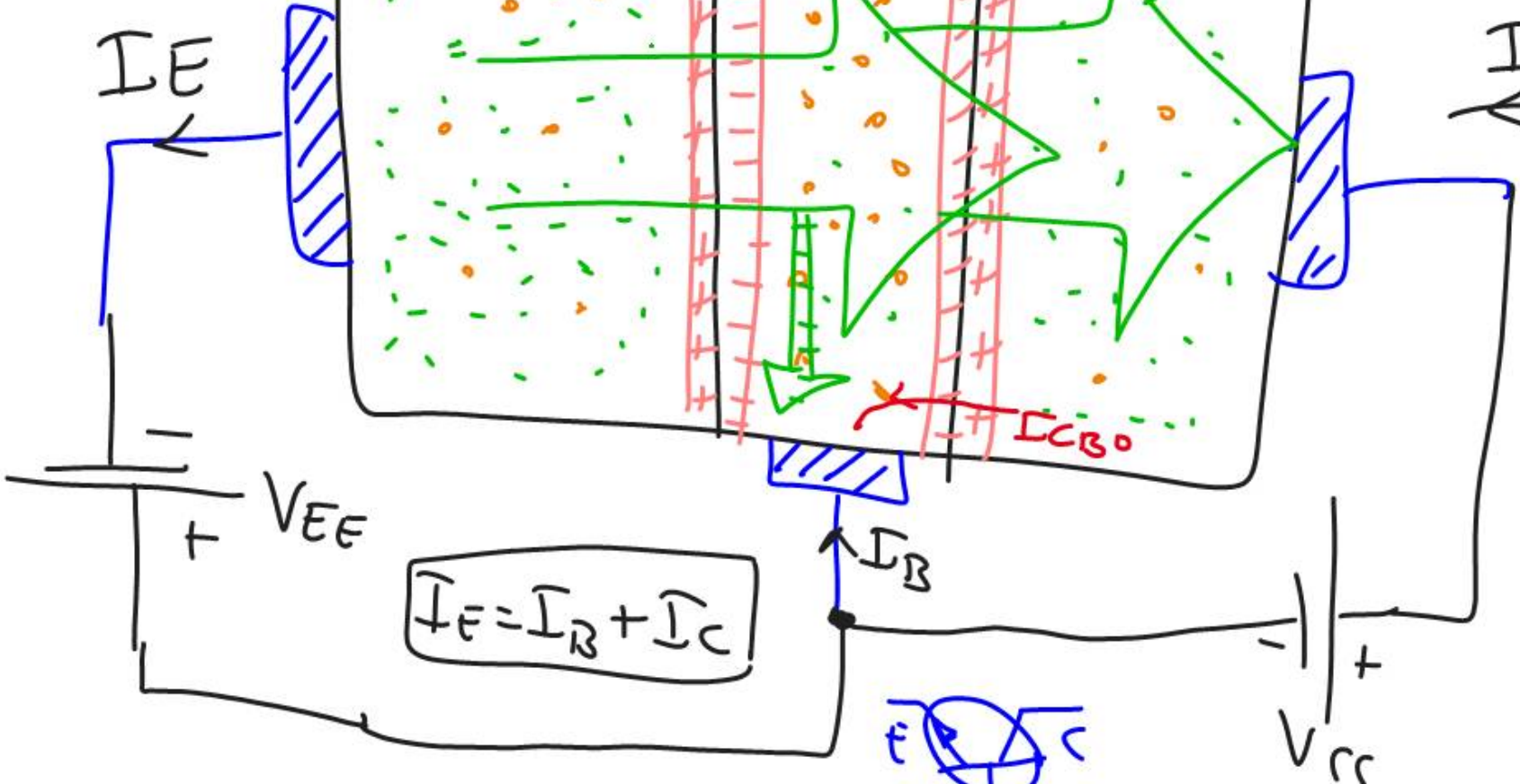
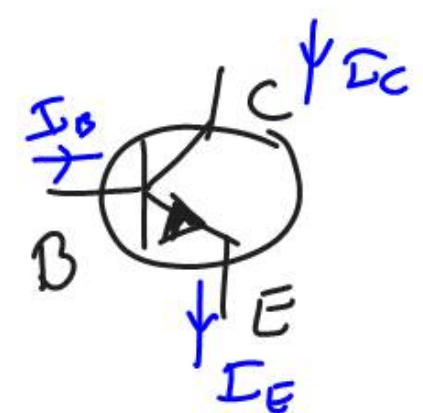
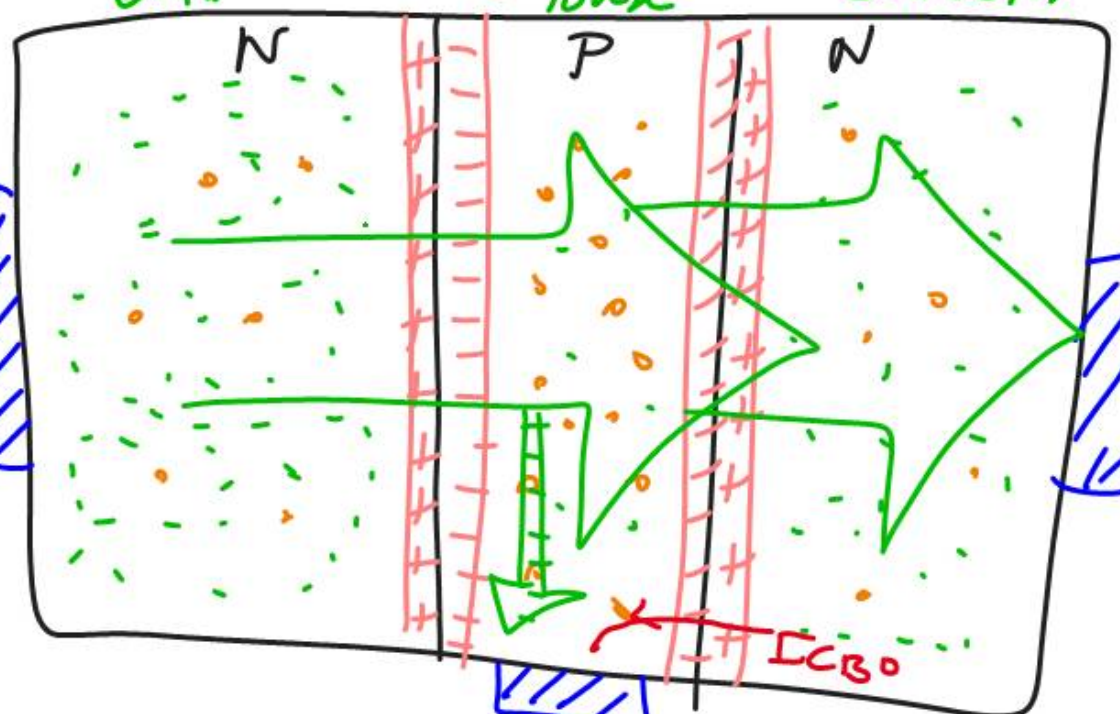
- ⊗ Emitter-base Junction is Forward biased.
- ⊗ Collector base junction is Reverse Biased.



** $I_E = I_B + I_C$

An NPN Transistor

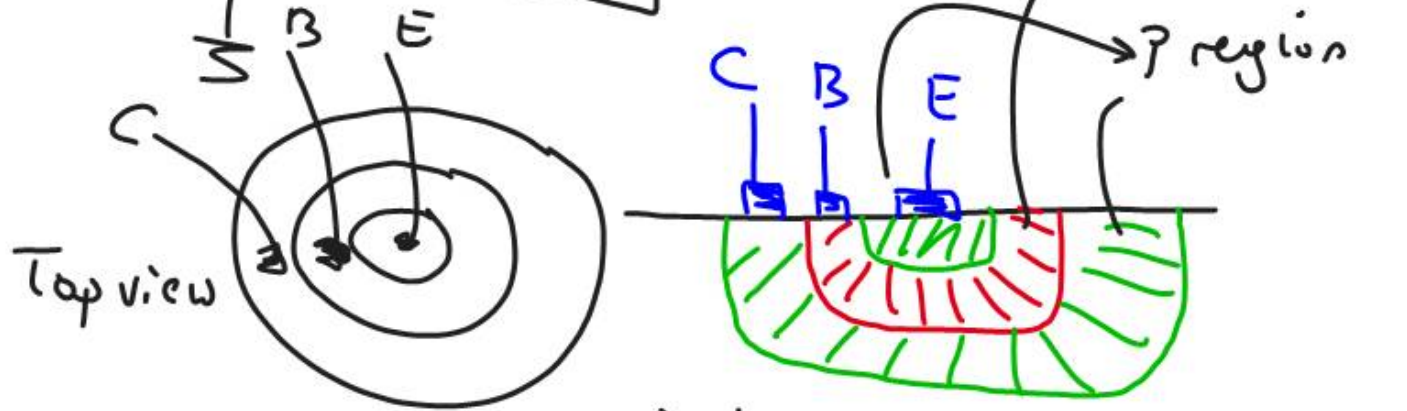
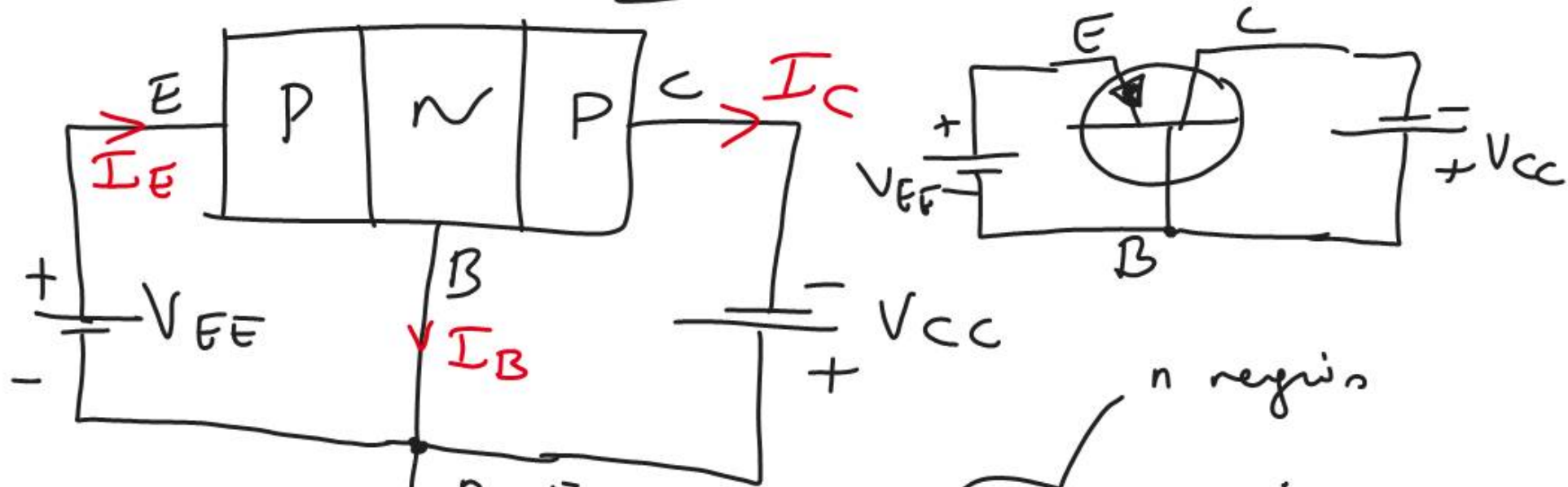
Emitter Base Collector



Biassing the Transistors

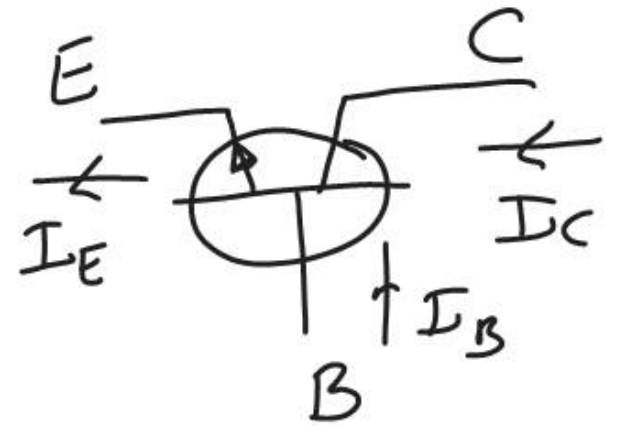
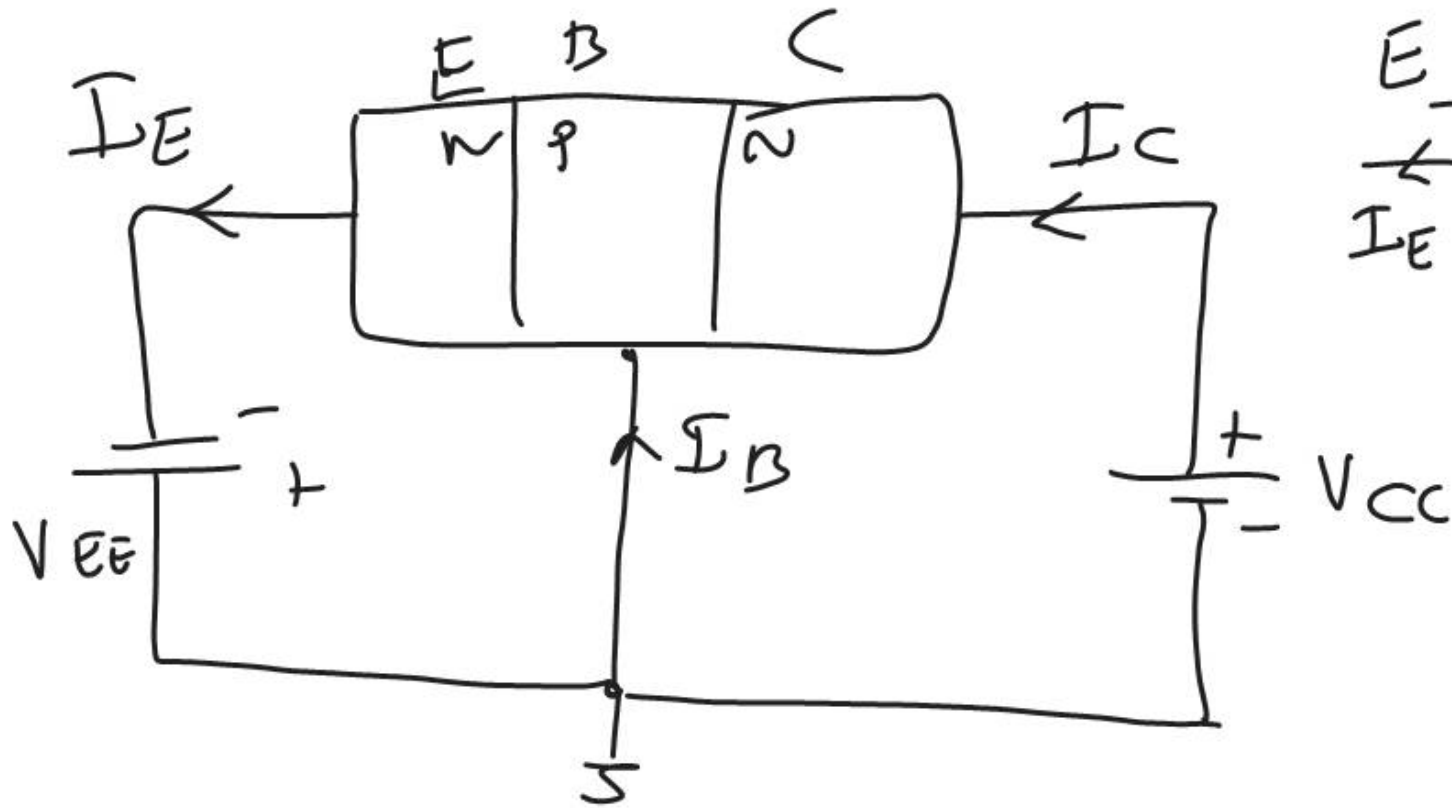
a) Common-Base

$$I_E = -I_B + I_C$$



p-type Si substrate

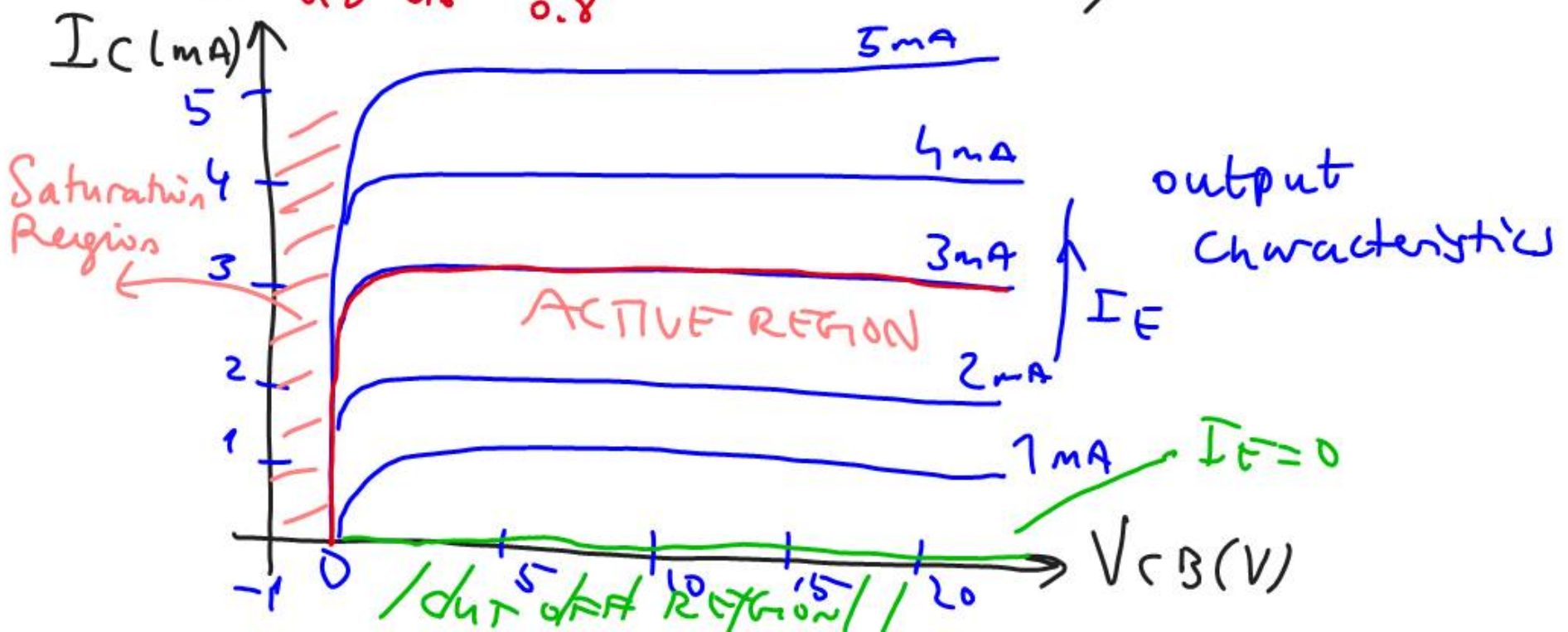
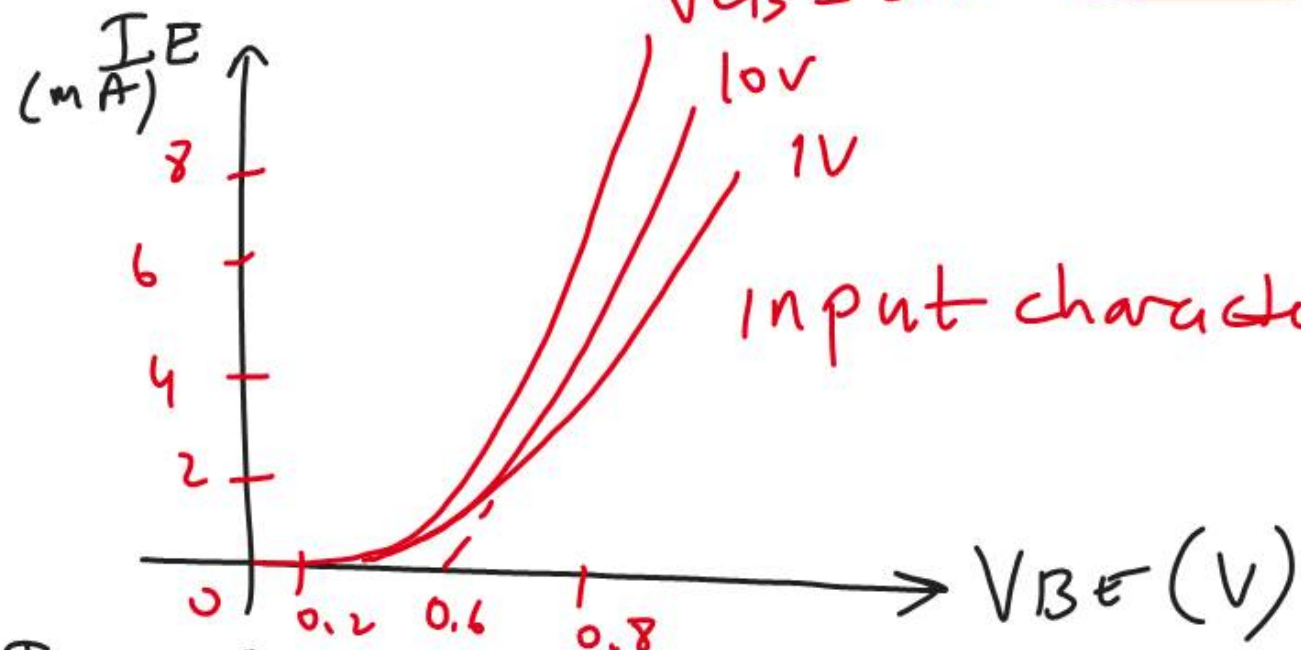
NPN common-base



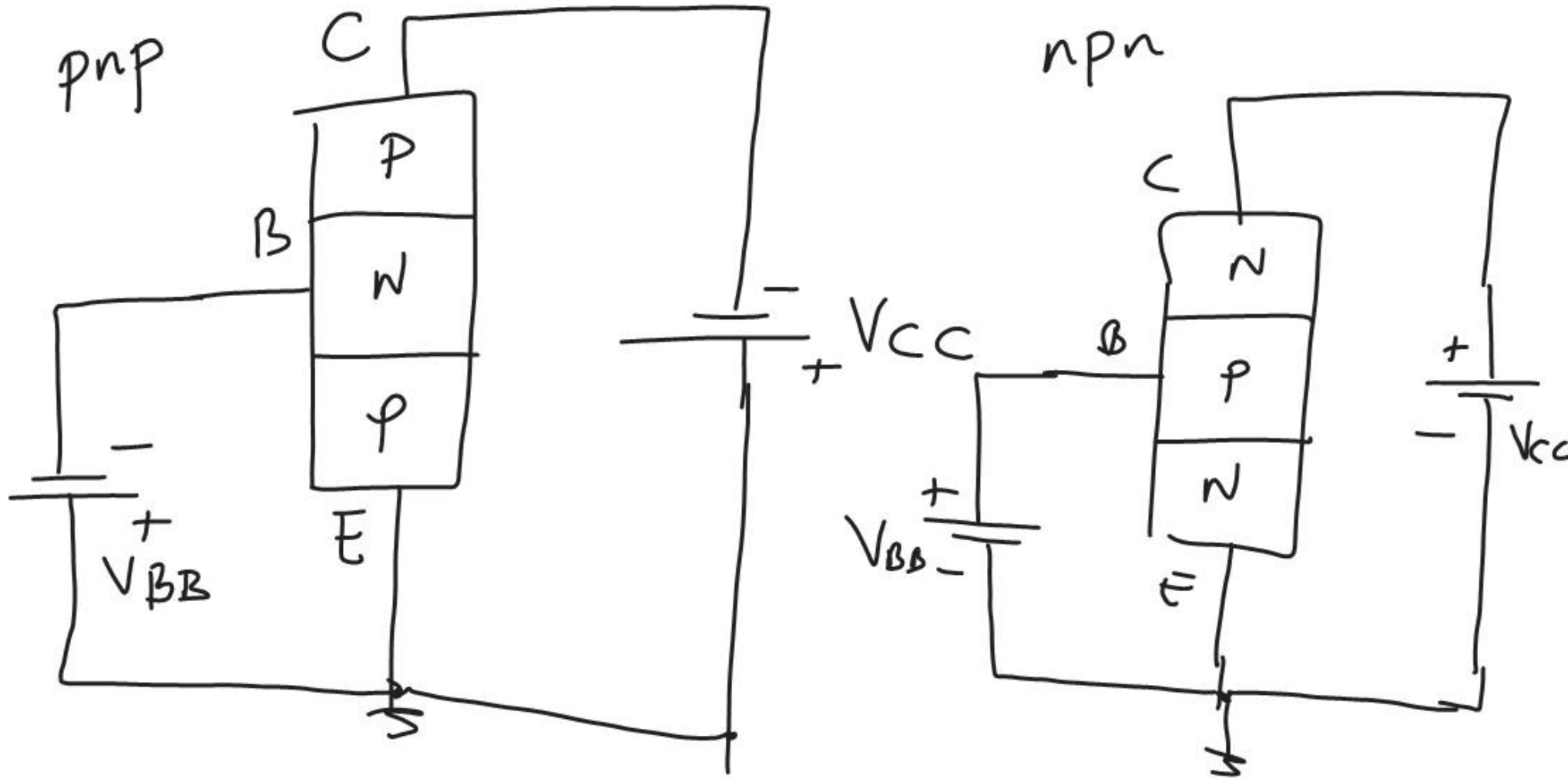
$$I_E = I_B + I_C$$

COMMON-BASE

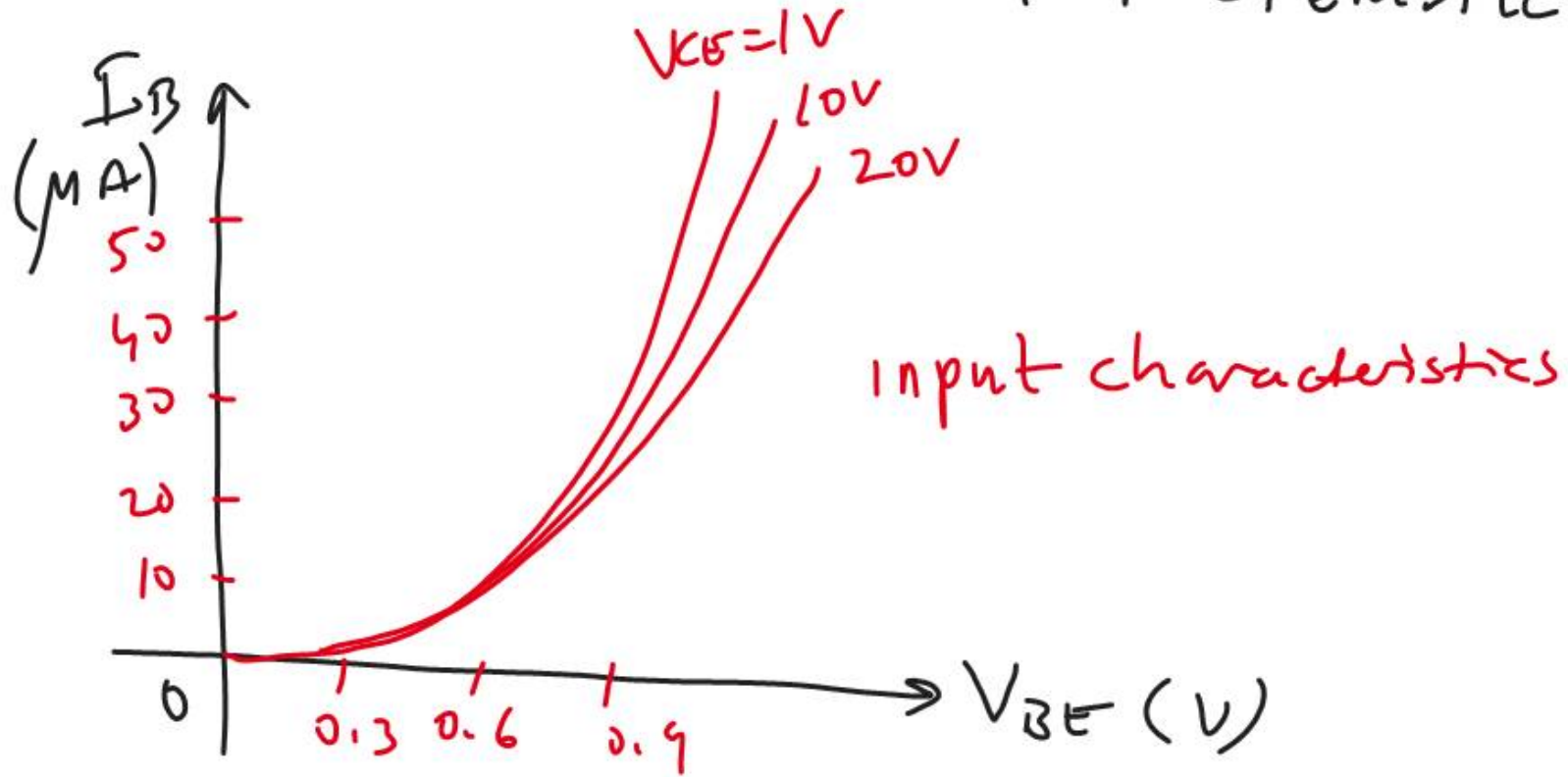
Characteristics



② COMMON-EMITTER CONFIGURATION



COMMON EMITTER CHARACTERISTICS



OUTPUT CHARACTERISTICS

