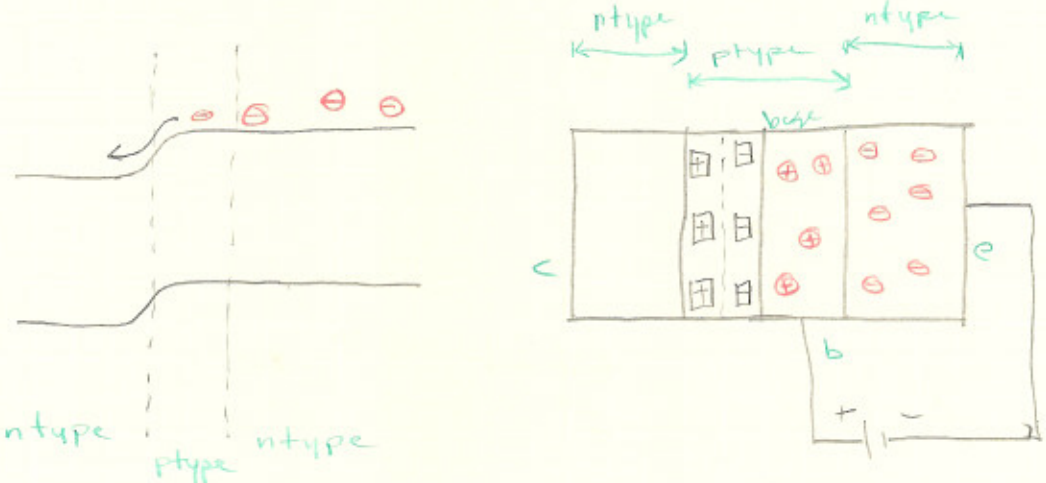
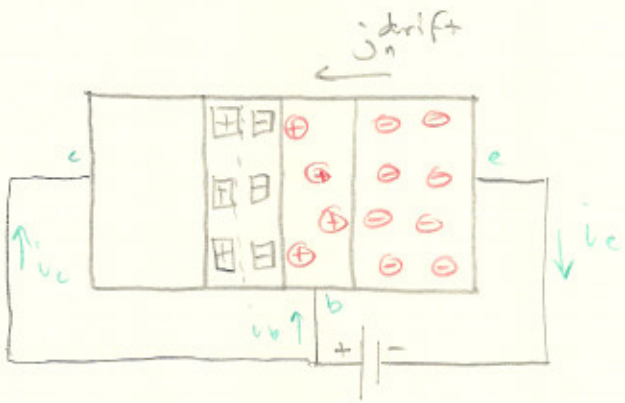


electrons are accelerated by the PN junction at the collector.

if the electrons are not removed from the collector (valley) then the collector PN junction will close.



$$j_n^{drift} = q_0 D_0 \frac{du(x)}{dx}$$

$$j_n^{drift} = \text{constant} \frac{du(x)}{dx}$$

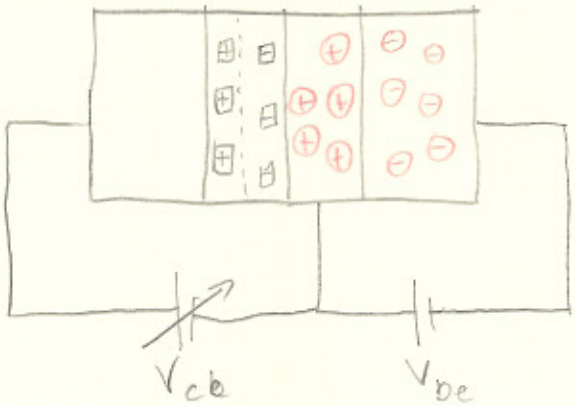
$$j_n^{drift} = f\left(\frac{du(x)}{dx}\right)$$

this means that the extraction of one electron from the base 100 electrons

$$\frac{du(x)}{dx} = 100$$

1) $W_b < L_n$

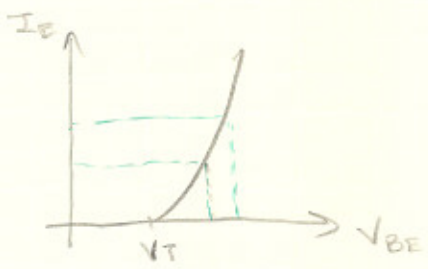
2) $j_n^{drift} = C \cdot \frac{du(x)}{dx}$

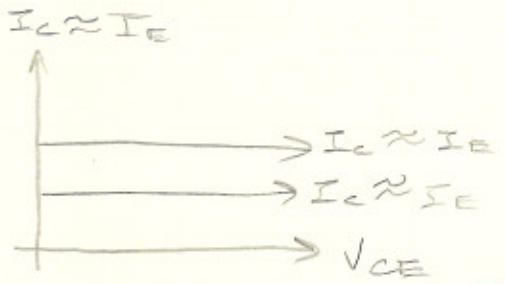


V_{cb} is keep the valley. If V_{cb} is increased the the valley drops.

If V_{be} is decrease below V_T, then a valley on the right side is created and stops current.

To vary I_E, we should look to the I_E vs V_{BE} graph





$I_C = \alpha I_E$

where $0 < \alpha < 1$

$I_C + I_B = I_E$

Rearrangable

in order to increase α . . .