

Semiconductores

C  $\leftarrow$  6

Si  $\leftarrow$  14

Ge  $\leftarrow$  32

Sn  $\leftarrow$  50

Pb  $\leftarrow$  82

Silicio intrínseco  $\leftarrow$  puro

Si + P<sub>13</sub>

$10^{23}$  átomos Si  $\rightarrow$  1 átomo P

$$\bar{e}_{T_0} + \bar{e}_{\text{contaminación}} > h_T$$

material tipo **N**

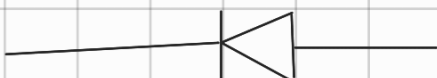
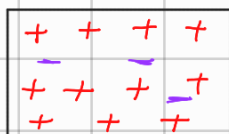
$$\bar{e}_{T_0} + e_c > h_T$$

Tipo N



$$h_T + h_c > \bar{e}_T$$

Tipo P



$\nearrow$  diodo