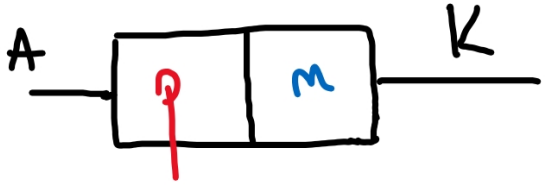
Lab 1. FT:

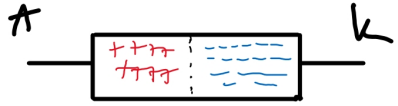
Dioda semiconductoare (redresoare):

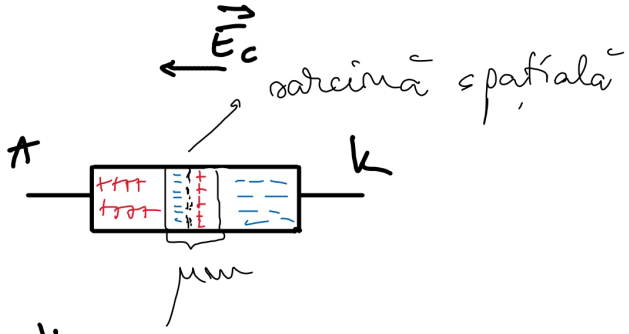
- jonctiune p-n. (Si, Ge)



- semiconductor de tip p: goluri ca purtători majoritari
(electroni ca purtători minoritari)

- semiconductor de tip n: electroni ca purtători majoritari
(goluri ca purtători minoritari)



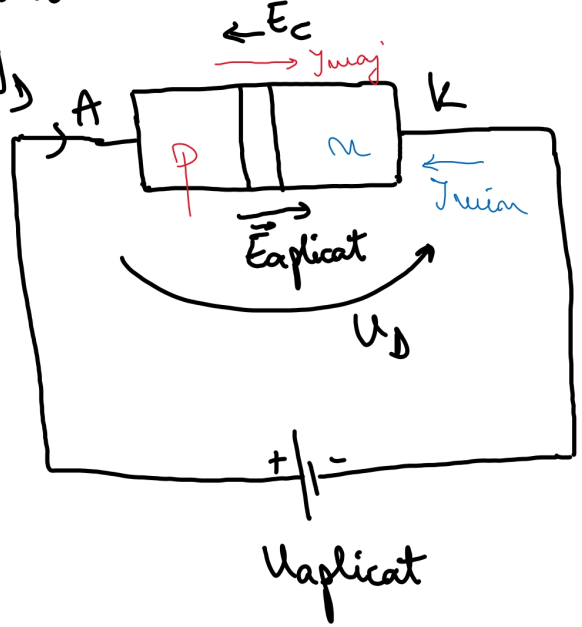


Simbolul diodei

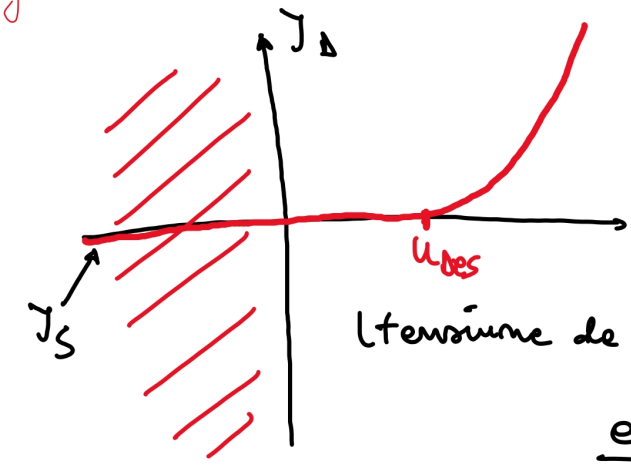
polarizare directă $+A$; $-K$.

polarizare inversă $-A$; $+K$.

Polarizare directă



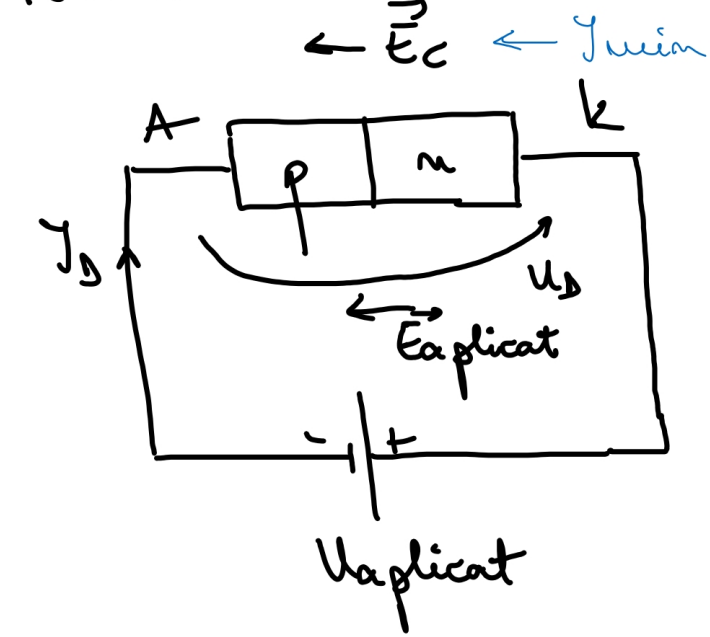
$j_{maj} \simeq 10^3 j_{min}$

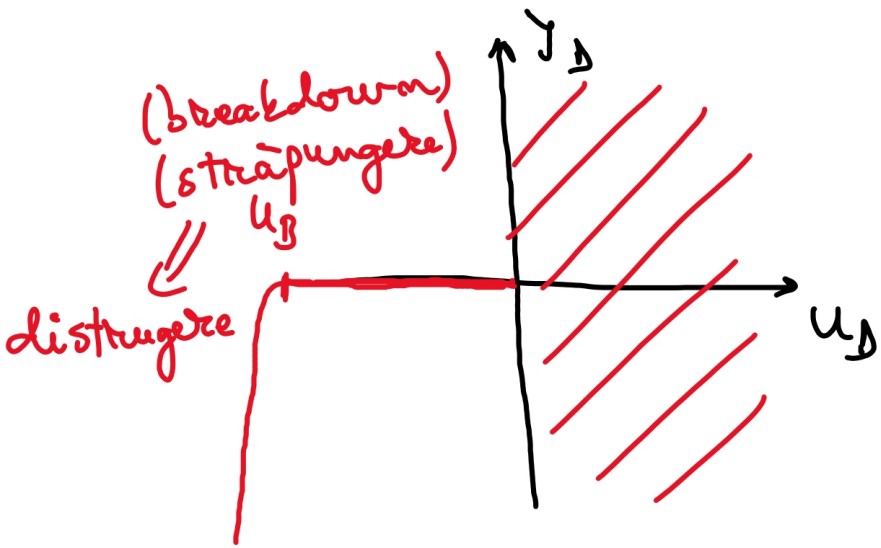


$$j_D = j_S \left(e^{\frac{eU_D}{k_B T}} - 1 \right)$$

$$\frac{eU_D}{k_B T} \gg 1 \Rightarrow j_D \simeq j_S e^{\frac{eU_D}{k_B T}}$$

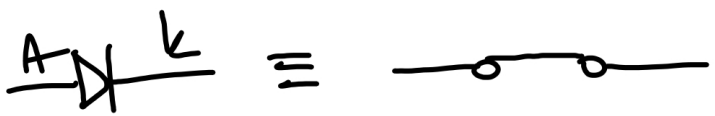
Polarizare inversă:

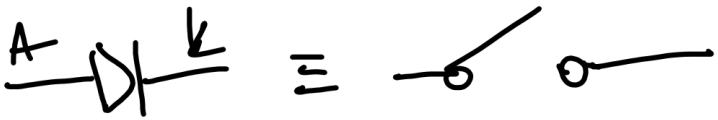


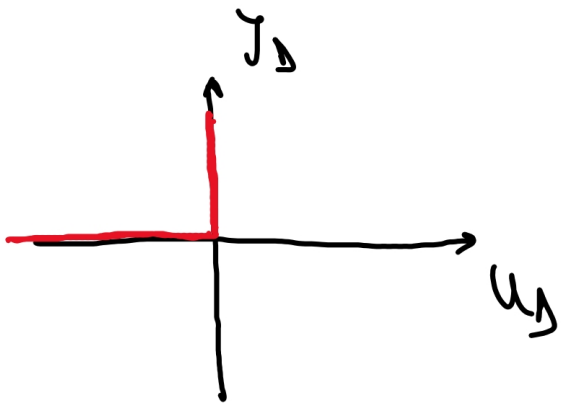


Modele ale diodei redresoare:

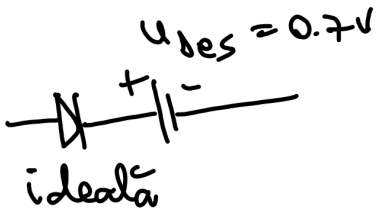
1. Dioda ideală

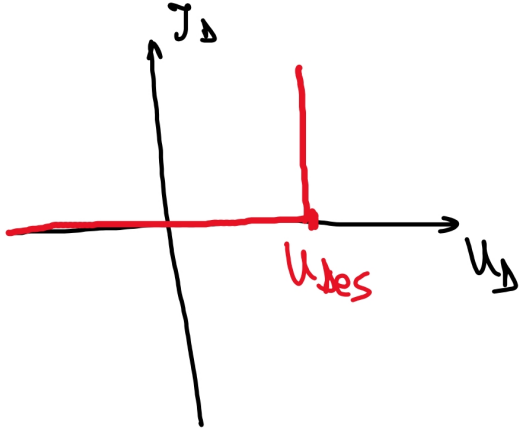
$U_D > 0 \Rightarrow$ 

$U_D \leq 0 \Rightarrow$ 



2. Diodă idealizată





U_D (V)	I_D (mA)
0	0
0.494	0.106
0.521	0.179

3. Model practic ("practical model").