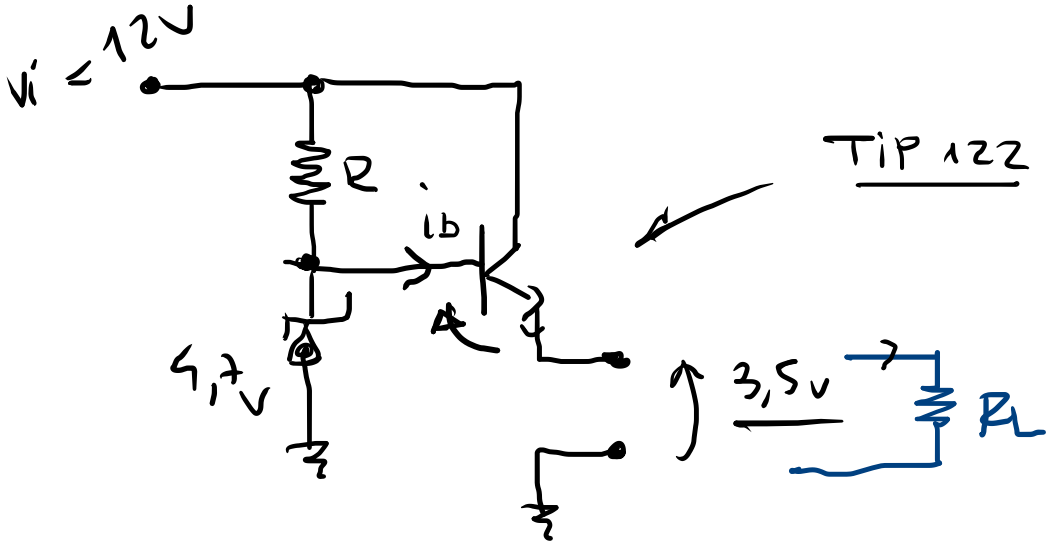


TIP 122 ⟶ β 2500

$V_{BE} = 1{,}2\,V$

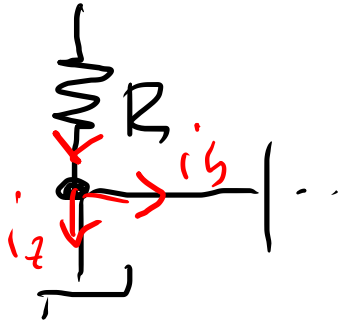
$\rightarrow$ 5Ω $\quad i = \frac{V}{R} = \frac{3{,}5}{5} \simeq 1A$

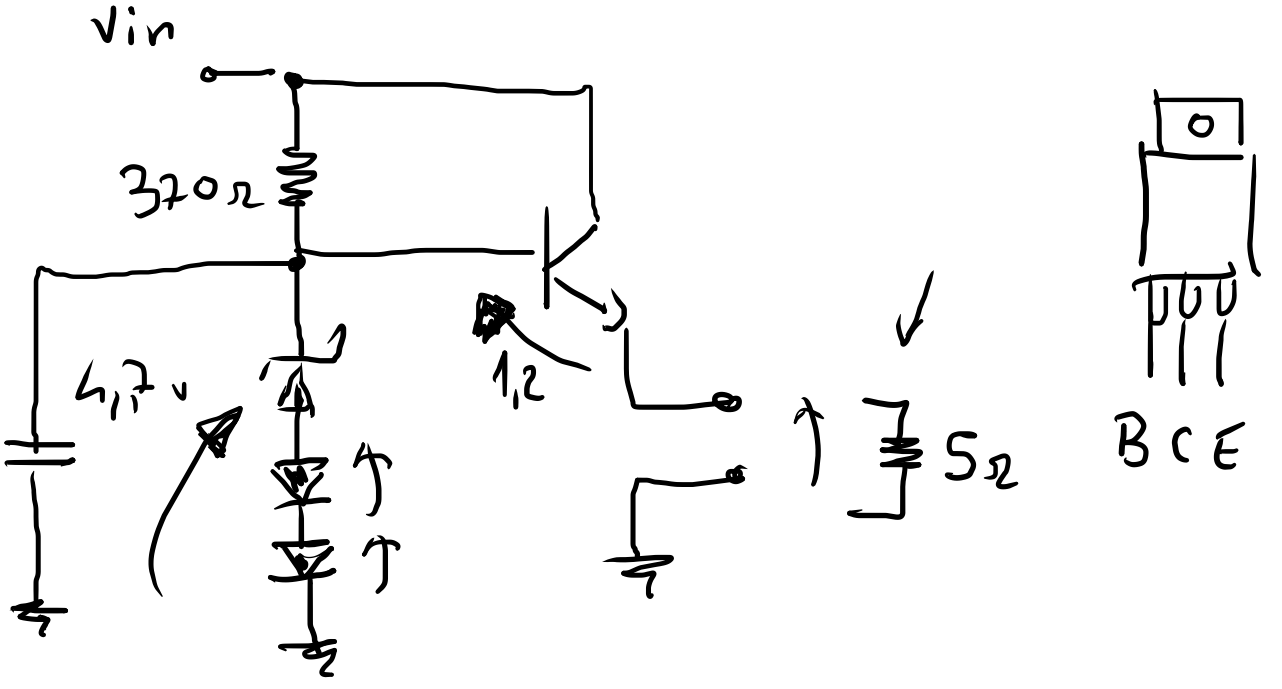
$\downarrow$

0,9 A

$$ib = \frac{ic}{\beta} = \frac{0{,}9A}{2500} = 0{,}0004\,A \simeq 0{,}4\,mA$$

$$R = \frac{Vi - V_z}{i_z + ib} = \frac{12 - 4{,}7}{0{,}020 + 0{,}0004} = \frac{9{,}3}{0{,}02} = 365\,\Omega$$




Vin
320Ω
4,7 V
1,2
5Ω
B C E