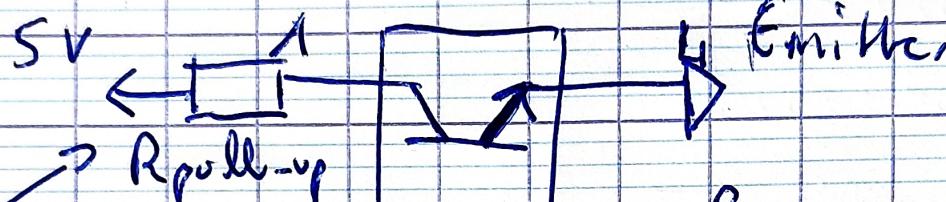


Captur de hardware

QRD1131A4

Collector



R limiteuse de courant
5V

Anode

$$R_{CL} = \frac{5 - 1,5}{20 \cdot 10^{-3}} = \frac{V_{GE} - V_{GATE\ forward}}{I_{forward}} = 175 \Omega \text{ (min)}$$

→ valeur utile 300Ω

mieux détecter la tension

$$R_{pull-up} = \frac{V_{CE} - V_{sat}}{I_C} = \frac{5 - 0,4}{1,2 \cdot 10^{-3}} = 4600 \Omega$$

$$I_{Cmax} = 30 \text{ mA}$$