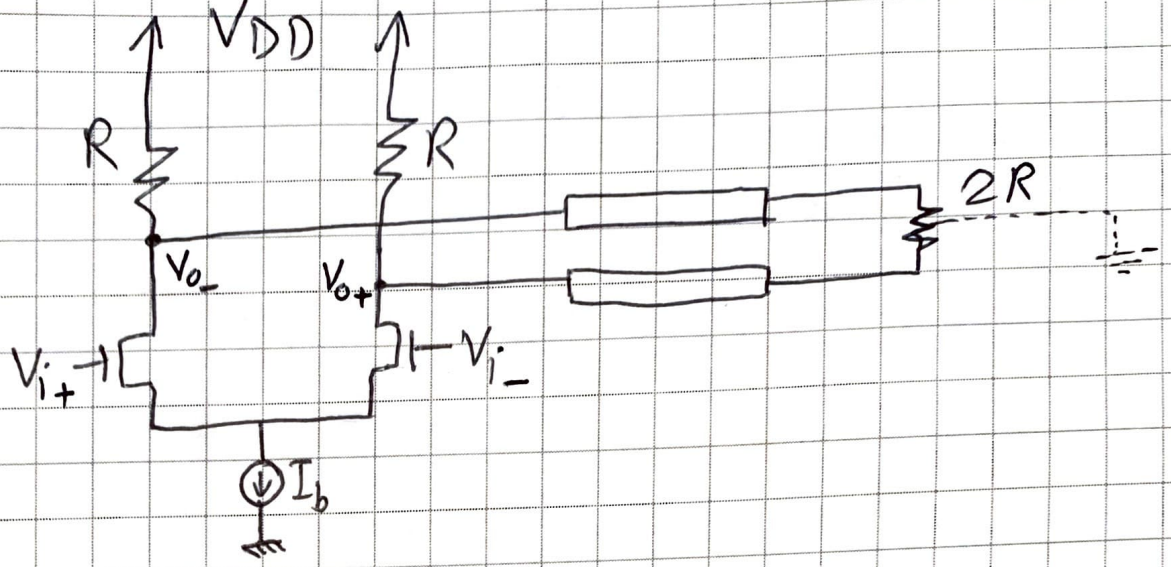
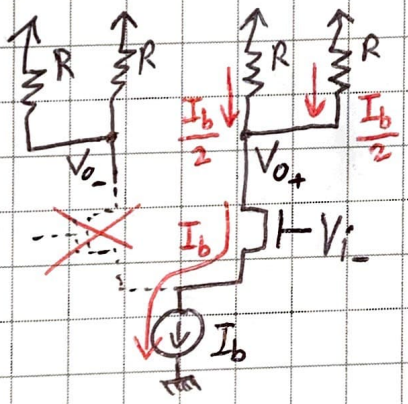
CML Tx-Driver



* Swing



$V_{o-} = V_{DD}$

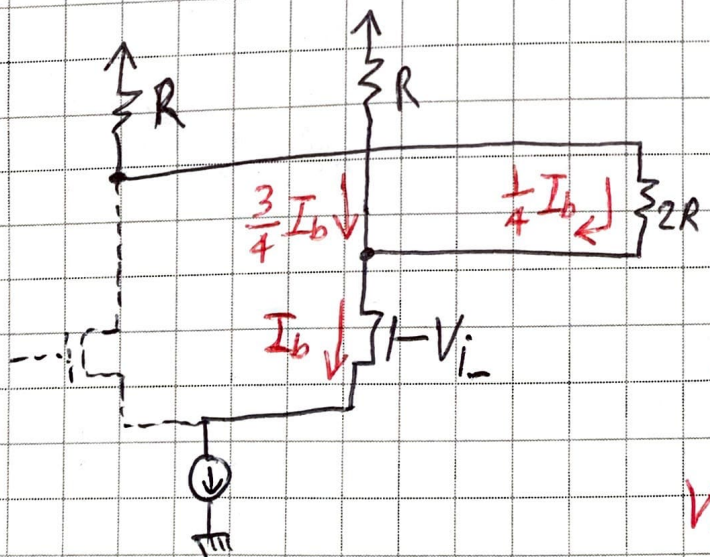
$V_{o+} = V_{DD} - I_b\left(\frac{R}{2}\right)$

$\therefore V_{sw\,pk} = V_{o+} - V_{o-}$

$= \pm I_b\,(R/2)$

$\therefore V_{sw\,pk2pk} = I_b R$

Another way of viewing this:

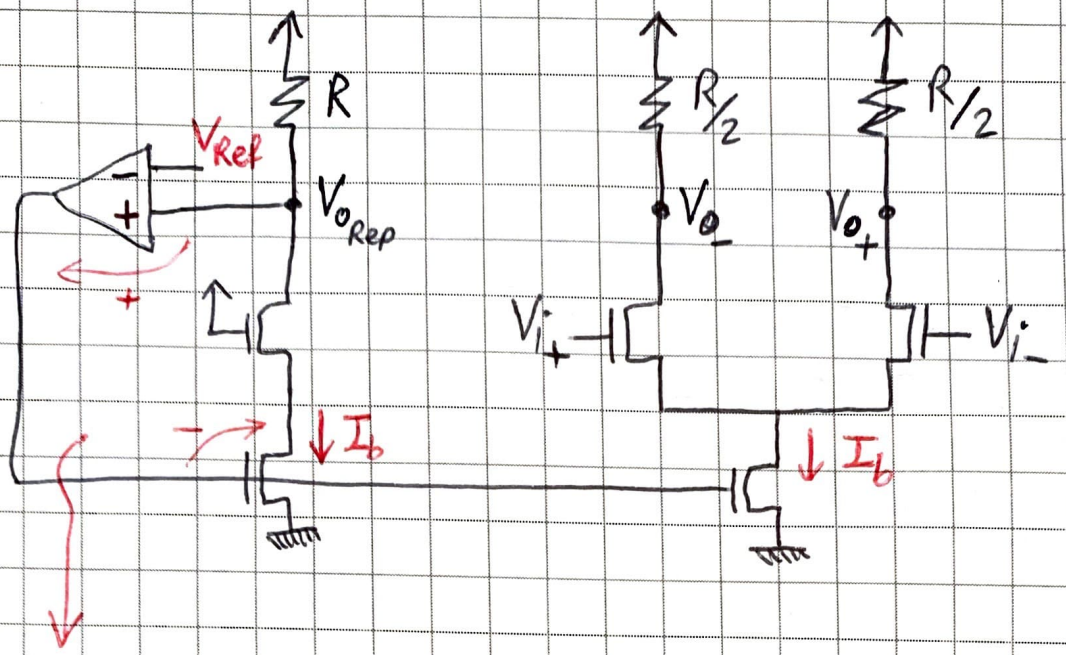


$V_{sw\,pk} = \pm \frac{1}{4} I_b \cdot 2R$

$\therefore V_{sw\,pk2pk} = I_b R$

$V_{sw\,pk2pk}$ depends on I_b

✱ Replica (for swing control)



-ve feedback loop adjusts I_b value to keep the relationship:

$$V_{sw_{pk2pk}} = V_{DD} - V_{Ref}$$

$$V_{O_{Rep}} = V_{Ref} = V_{DD} - I_b R$$

$$V_{O+} = V_{DD} - \frac{1}{2} I_b R$$

$$V_{O-} = V_{DD}$$

$$V_{sw_{pk2pk}} = V_{DD} - V_{Ref} = I_b R$$

$V_{sw_{pk2pk}}$ depends on V_{Ref}