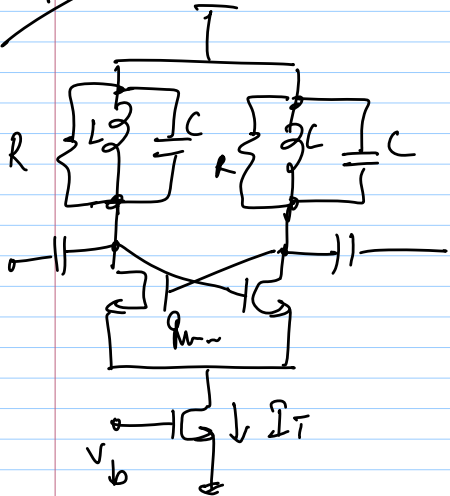
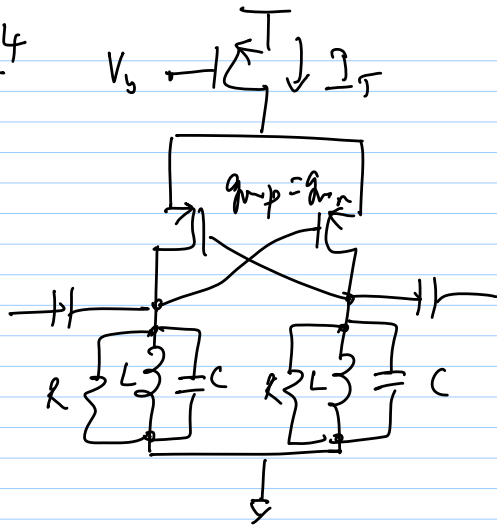


25/10/13

Lec 34



①  $\frac{4}{\pi} I_T \cdot R$



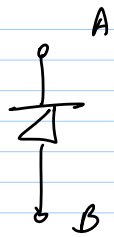
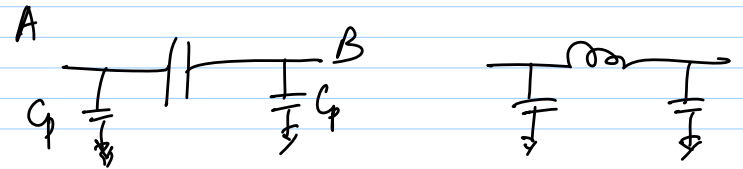
②  $\frac{4}{\pi} I_T \cdot R$   
lower body effect

Tuning Range =  $f_{max} / f_{min}$  ↑

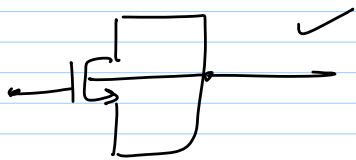
$f_{out} = K_{VCO} \cdot V_c + f_{fr.}$

$\omega_0 = \frac{1}{\sqrt{L(C+C_p)}}$

↑ parasitic cap



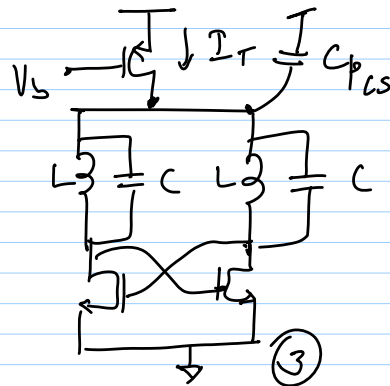
Rev. biased p-n junction



$C_{max} \Rightarrow \omega L C_{ox}$   
 $C_{min} \Rightarrow C_{depl.}$

$f_{max} = \frac{1}{\sqrt{L(C_p + C_{min})}}$  ;  $f_{min} = \frac{1}{\sqrt{L(C_p + C_{max})}}$

Actual  $\frac{C_{max}}{C_{min}} = \frac{C_p + C_{max}(depl.)}{C_p + C_{min}(depl.)} < \frac{C_{max}(depl.)}{C_{min}(depl.)}$



parallel C C  
series C.S.

④

