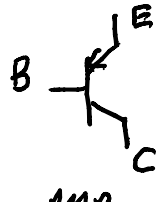
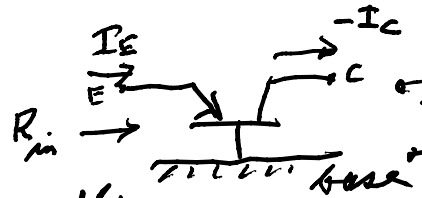
BJT = bipolar junction transistor



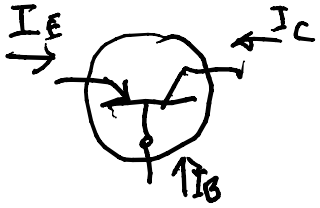
Transistor = transfer resistor



$-I_C \approx I_E$; $-I_C = \alpha I_E$

$\alpha \lesssim 1$

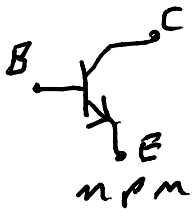
(small) large gives power gain



KCL, $0 = I_E + I_C + I_B \Rightarrow I_B$ = small

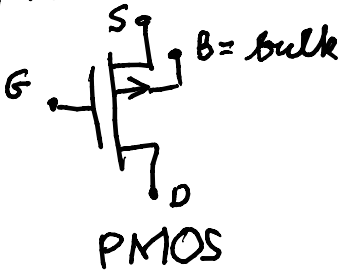
use like 

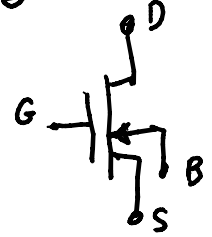
gives much bigger power out



exponential

CMOS = complementary metal oxide silicon





M in Spice device

polynomial