5. BJTs

a $I_c = I_s e^{\left(\frac{V_{BE}}{V_T}\right)}\left(1+\frac{V_{CE}}{V_A}\right)$ active $|V_{CE}| > |V_{CE\_SAT}|$

$I_c \approx 0A$ cut off $|V_{BE}| > |V_{BE\_ON}|$, A
$|V_{BE}| < |V_{BE\_ON}|$

b. inputs V_{CE}, V_A, V_{BE}, V_T

c. output I_c

d.

e.

6. Mosfets

a $I_{DS} = \frac{K'}{2}\frac{W}{L}(V_{GS} - V_{TP})^2(1+\lambda \cdot V_{DS})$ active

$|V_{GS}| > |V_T|, |V_{DS}| > |V_{GS} - V_T|$ active

$I_{DS} \approx 0A$ cutoff

b inputs V_{GS}, V_{TP}, V_{DS}

c. output I_c

d

e

7.