12_Compound Configurations
Darlington
Current Mirror
Differential Amp
(a) nMOS
- $V_{GS} = 0 \text{ V}$
- $I_D = 0$ (device is off)

At $V_{GS} = +5 \text{ V}$
- $I_D$ is present (device is on)

(b) pMOS
- $V_{GS} = 0 \text{ V}$
- $I_D = 0$ (device is off)

At $V_{GS} = -5 \text{ V}$
- $I_D$ is present (device is on)
(a) $V_i = 0 \text{ V}$, $V_o = +5 \text{ V}$

$V_{GS} = -5 \text{ V}$

$Q_2$ (pMOS) On

$Q_1$ (nMOS) Off

(b) $V_i = +5 \text{ V}$, $V_o = 0 \text{ V}$

$V_{GS} = 0 \text{ V}$

$Q_2$ (pMOS) Off

$Q_1$ (nMOS) On

$V_{DD} = +5 \text{ V}$