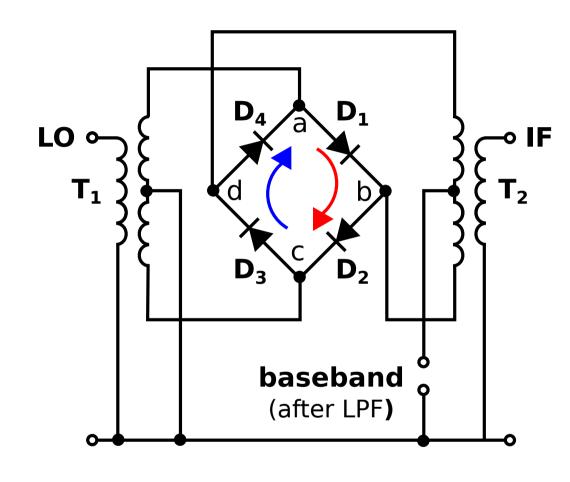
## (a) analog I&Q demodulator

## **LO:** $\propto \cos(\Delta\omega_0 t)$ 0°|90° 90° splitter $LO_{\pi/2}(t)$ $LO_0(t)$ double-balanced Q mixers IF<sub>o</sub>(t) $IF_0(t)$ 0° splitter **IF:** $A_{IF}\cos(\Delta\omega_0 t + \phi)$

## (b) double-balanced mixer



## **Conduction condition:**

$$V_a < V$$