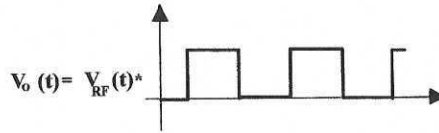
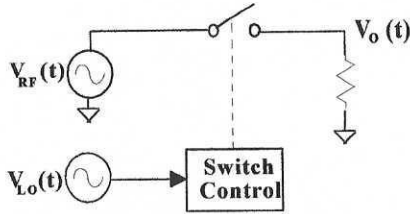
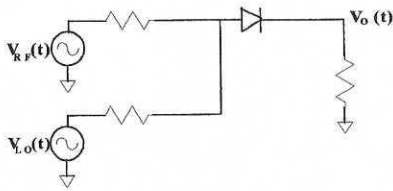


# Switching Mixers

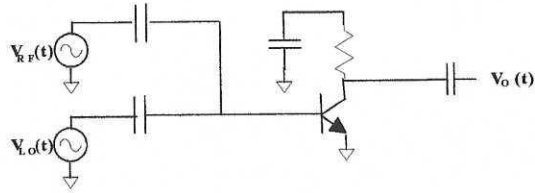
## Simple, Unbalanced Designs



## Simple Diode Mixer

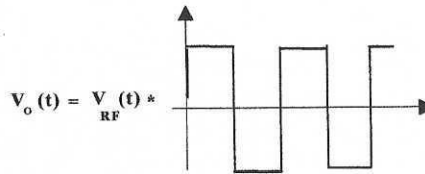
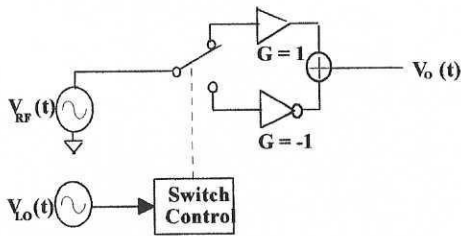


## Single Transistor Mixer (bias details not shown)

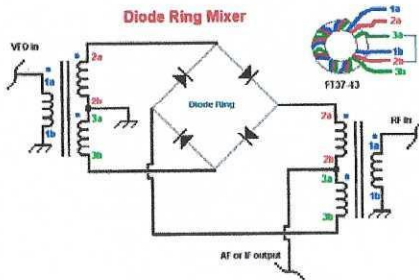


*Problem: Large LO feedthrough to V\_o(t)*

## Balanced Designs

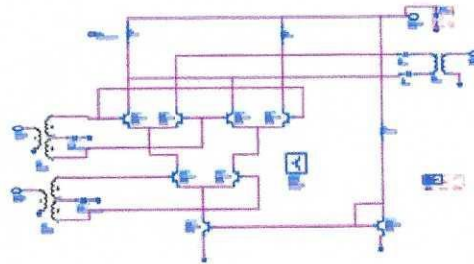


## Diode Ring Mixer (Double Balanced Mixer)



[http://www.qrp.pops.net/images/2008/2008-larger/big\\_dbm.gif](http://www.qrp.pops.net/images/2008/2008-larger/big_dbm.gif)

## Gilbert Cell



<http://edocs.soco.agilent.com/download>