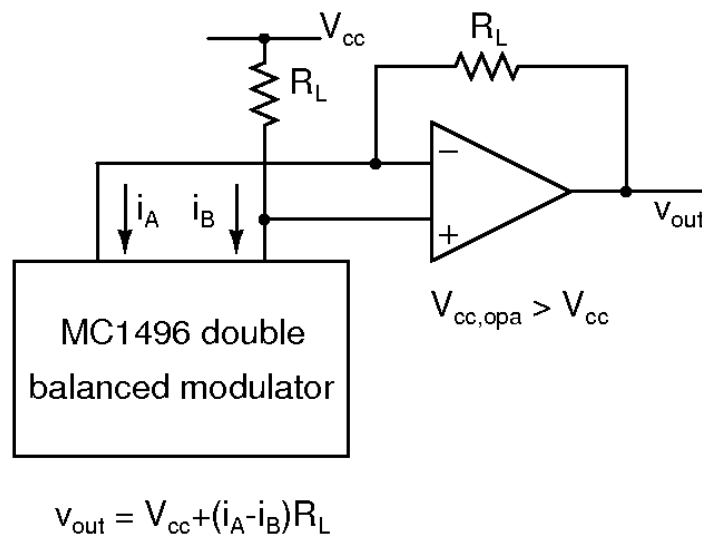


Experiment 9: Double balanced mixer

- 1) What is the maximum base current you can expect at the RF and LO ports?
- 2) What are the output swing limits of the LF347 opamp if it operates with supply voltages of $\{V_{cc}, V_{ee}\}$?
- 3) In the figure below, if you use LF347 opamp, what should be the constraints on $\{V_{cc}, V_{ee}\}$ such that, for an output signal swing of 2V peak, the opamp is away from saturation?



- 4) Sketch the product $v_1 \text{sgn}(v_2)$ where v_1 is a 1kHz sinusoid and v_2 is a 10kHz sinusoid.