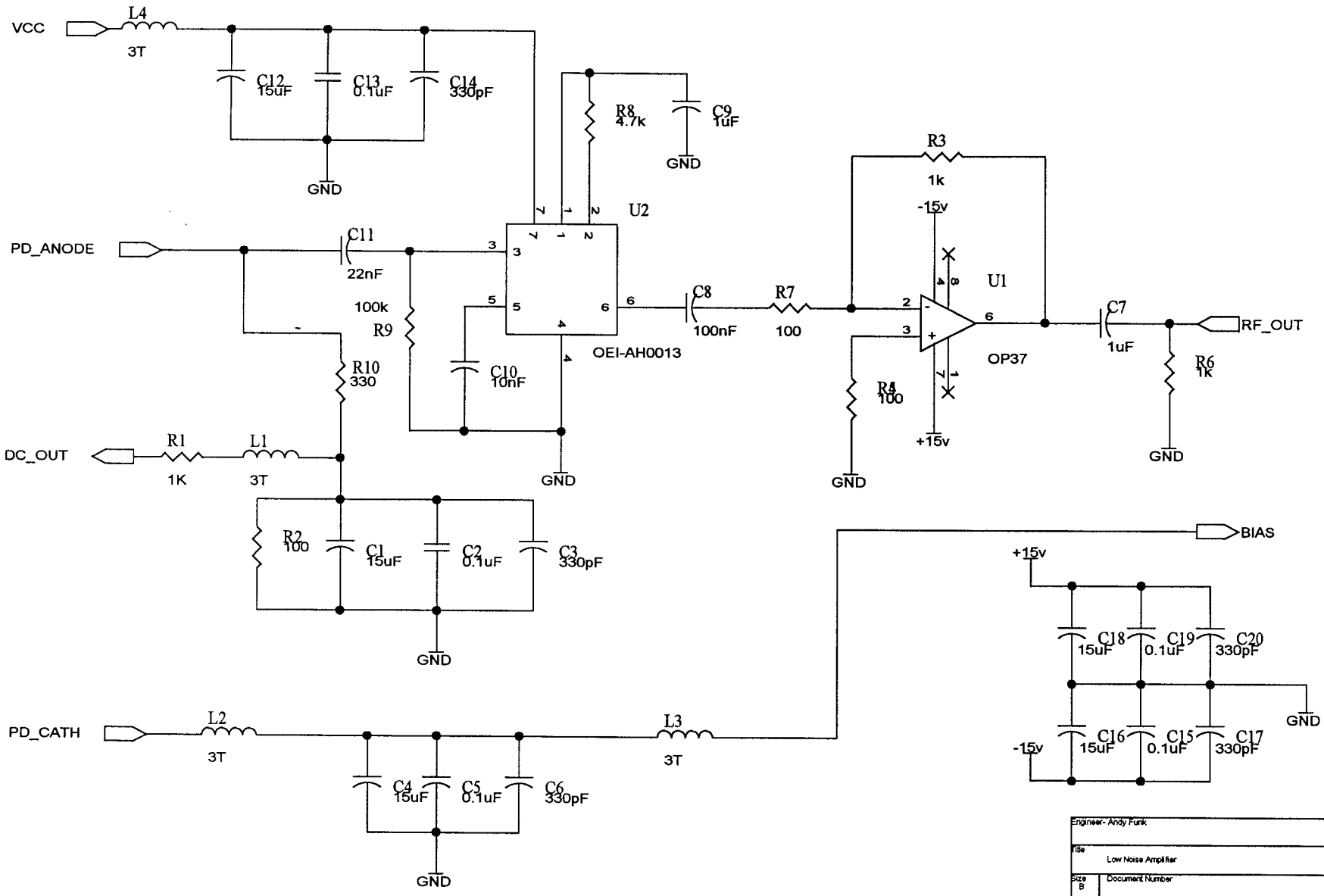
Here's the circuit diagram for our detector. The main chip is an OEI (Optical Electronics Inc.) AH0013 -- a reasonably fast, low-noise amplifier. There are probably other amps that would work just as well. The inductors in this circuit are just little three-turn hand wound pieces. We were able to use a printed circuit board. It's my guess that this was overkill, and you could probably get away with a vector-board for the circuit, since it's only a couple of MHz bandwidth. If you could get a board printed though, I'm certain you won't have any troubles. The main thing is to have a good box to eliminate pick-up.

The drive circuit for the constant current source also had a surge suppresser (which only worked at f>1Mhz), and an EMI low-pass (Spectrum 1250-059). Once again, since we were using a battery, it's my guess that this was overkill, and you could probably get away with just driving the LED and resistor directly from the battery. Again, the main thing is to eliminate pick-up by shielding the battery leads, LED leads, etc. We had the battery in a shielded box, and ran coax from it to the LED. The LED and the detector sat close-coupled on the table and were both shielded by a Faraday cage.

If you need any more help, please contact me.

Mark Beck
beckmk@whitman.edu



Engineer- Andy Funk	
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