**Transimpedance Op-amp Circuit Board:**

The circuit boards have 8 available photodiode circuits using the OPA132A op-amp in the transimpedance configuration. Each photodiode circuit requires a feedback capacitor, feedback resistor, OPA132A, photodiode, two 2.2 uF decoupling capacitors (for V+ and V-), and two 15 nF decoupling capacitors (for V+ and V-). The explanation below is for 4 of the 8 possible circuits, as the other 4 circuits are mirrored on the other side of this circuit board, and component placement can be deduced from this tutorial. The transimpedance configuration that is implemented on these circuit boards is shown below.

See the ‘Transimpedance Op-amp’ circuit designer program for correct components.
1. Feedback Capacitor and Resistor, marked accordingly to A, B, C, or D
2. Photodiode slot: Suggested use is 6-pin socket or directly solder photodiode leads into pin holes, where G is ground and In is the photodiode input
3. Transimpedance Op-amp footprint, use OPA132A
4. Power and Output Header, power supply of V+, V-, and G (ground); A, B, C, and D are the output of the photodiode circuits labeled above
5. Output header of optional differential circuit (A-B) and (C-D), where G (ground) and A-B and C-D are outputs
6. Optional 5th order filter
7. Output header of optional filter circuit, where G (ground), A is filtered output of A, and D is filtered output of D
8. ‘Enable/Disable’ differential header 1, use header and jumper to enable differential circuit for B and C outputs
9. ‘Enable/Disable’ differential or filter header 2, use header and jumper to enable differential circuit or filter circuit for A and D outputs
10. Differential Op-amp footprints
The back side for circuits A, B, C, and D is for the power supply decoupling capacitors which are labeled above. The 4 capacitors on the left are for the differential op-amps and the remaining capacitors on the right are for the transimpedance op-amps. Obviously, if you are not using the optional differential circuits, you do not need to solder the differential decoupling capacitors shown on the left.