



PCB-mpreamp

- Preamplifier For Mid-IR PDs
- Photovoltaic Mode
- Supply Voltage: +5 VDC
- Dimension: 10 x 26 mm



Description

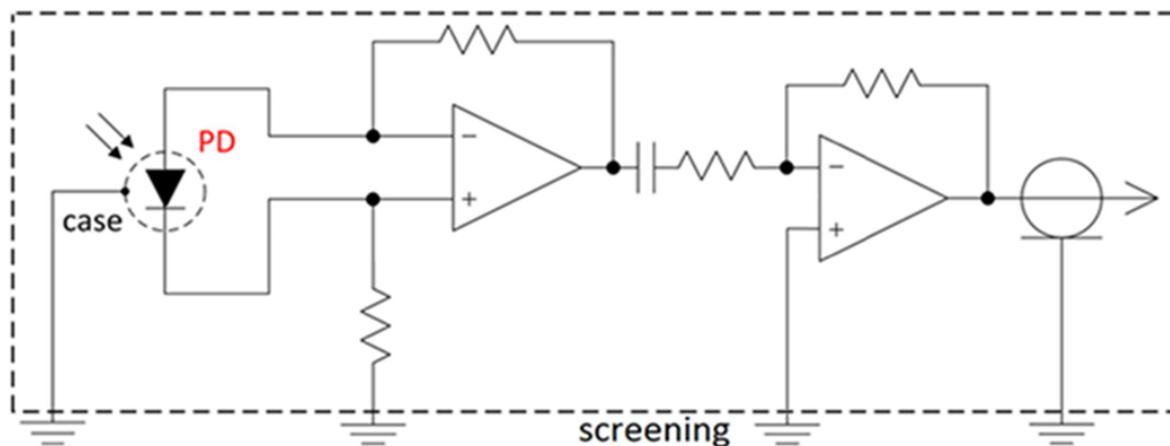


PCB-mpreamp preamplifier is oriented for amplification and conversion of the pulse current signal generated by Mid-IR photodiodes. Preamplifier enables PD operation at **photovoltaic mode** (with no reverse bias) – mode in which photodiode becomes the source of photocurrent. The photocurrent is amplified and converted by preamplifier into a voltage signal. The resulted voltage signal has the same form as the photocurrent, i.e. if the photocurrent from the PD is a meander, the converted signal will be a meander too, with the same frequency and pulse duration.

The current into voltage conversion coefficient is constant and depends on given photodiode.

Note! Before purchasing the PCB-preamp board, please notify us about the exact photodiode model to be used with the preamplifier, since the preamplifier board should be tuned for the appropriate photodiode type.

Principal Scheme

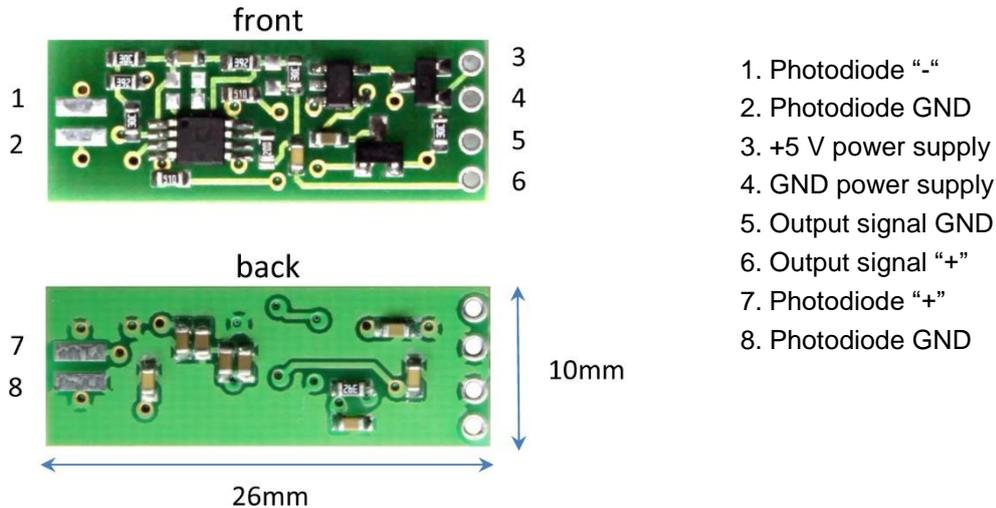


Main Characteristics

Parameter	Symbol	Min.	Values Typ.	Max.	Unit
Input Voltage (stabilized)	V _{SUPPLY}		+5.0		V
Voltage Tolerance		-5		+5	%
Board Dimensions			10 x 26		mm



Driver Layout

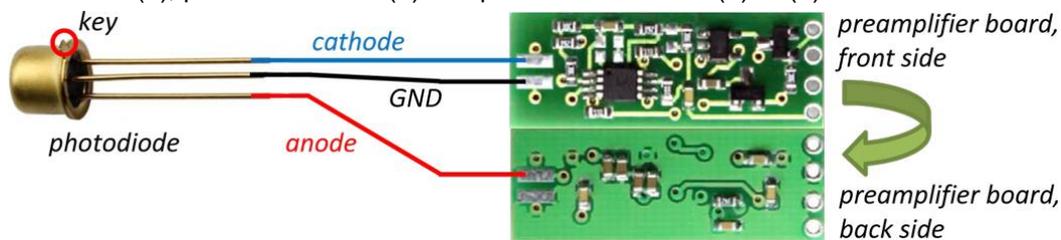


Operating Instruction

1. a) For all modules of Mid-IR PDs, excepting PD25-05 and PD25-10 series

Solder your PD to the PD preamplifier in the following way:

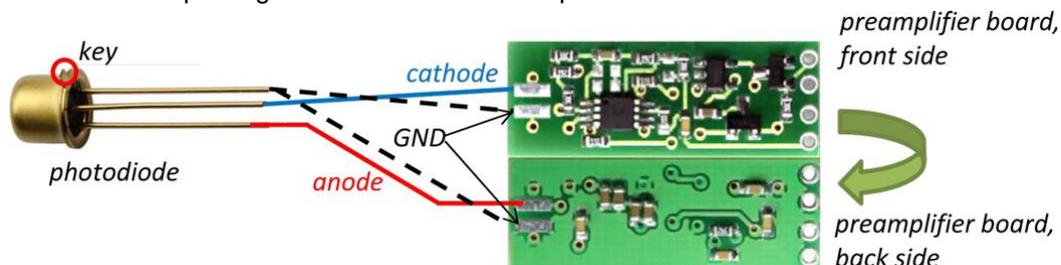
photodiode “+” to (7), photodiode “-“ to (1) and photodiode GND to (2) or (8).



- b) For PD25-05 and PD25-10 series

Solder your PD to the PD preamplifier in the following way:

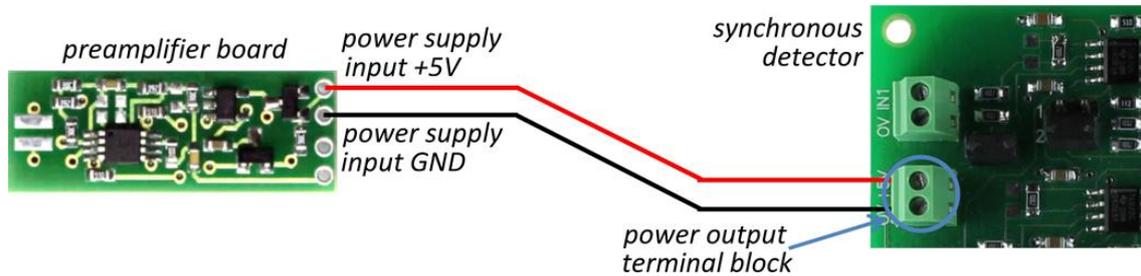
photodiode “+” to (7), photodiode “-“ to (1) and photodiode’s GND to (2) or (8). In addition, you can cut the lead of package that is named as “free pin” off and don’t connect it to GND.



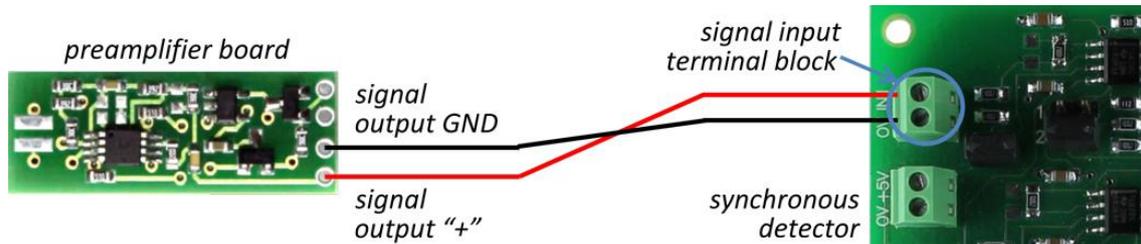
2. Solder the power supply wires: +5 V to (3) and GND to (4).
3. Solder the signal output wires: “+” to (6) and GND to (5).
4. Screen photodiode and preamplifier to avoid noise.



5. Connect the 5V power output of the PCB-sdetect-3P synchronous detector with the preamplifier power input.



6. Connect the preamplifier output wires to signal input of the PCB-sdetect-3P synchronous detector.



Note!

- Check all the connections before turning on the photodiode.
- Do not connect the photodiode to the multimeter.
- Make sure that the connection between the photodiode and the preamplifier is proper, safe and securely screened.

7. Choose the needed averaging time and signal amplification with the help of the appropriate jumpers of the PCB-sdetect-3P synchronous detector.



Note! To find out more about mode adjustment of PCB-sdetect-3P, please refer to its manual.

8. Make all the connections of other boards (driver, synchronous detector, etc.) following the appropriate instructions manuals. Before turning them on, check the required connections and modes:

Driver:

- LED connection
- Synchronisation with sync. detector
- Pulse duration, frequency, current selection
- External connections (if necessary)

Synchronous Detector:

- Photodiode input connection
- Preamplifier power output connection
- Synchronisation with driver
- Averaging time and signal gain selection
- External signal observing device connection