Photodiodes with TO-18 footprint:

Farnell 1495575
Hamamatsu S5973
D= 400um active area
Cd=1.6 pF @ Vr=3V3

Thorlabs FDS015
D=150 um active area
0.65pF @ Vr = 5 V

Thorlabs FDS025
D= 250 um active area, with ball lens
0.94 pF @ Vr = 5 V

Hamamatsu S5972
D= 800um active area
3 pF @ Vr = 10 V

Hamamatsu S5971
D= 1.2 mm active area
3 pF @ Vr = 10 V

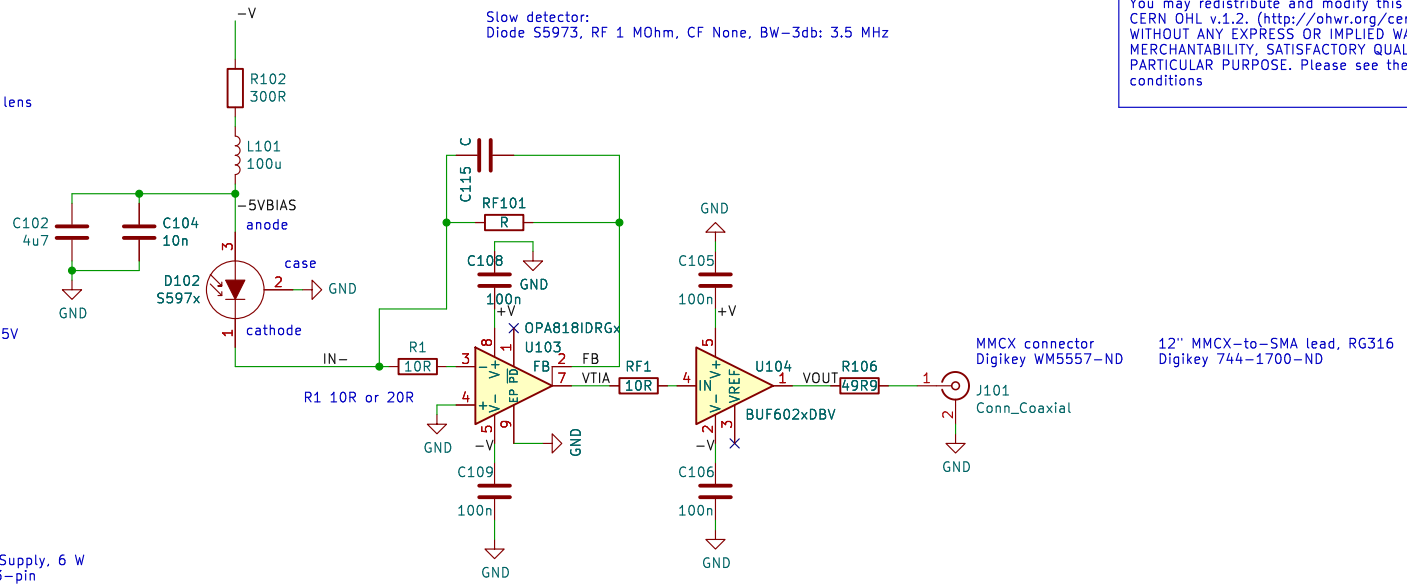
OSI FCI-125G-006HRL
Hamamatsu S9055(-01)

Thorlabs FGA01FC, InGaAs, 2pF @ 5V
same as OSI INGAAS-120L-FC

TIASim predictions (https://github.com/aewallin/TIASim)

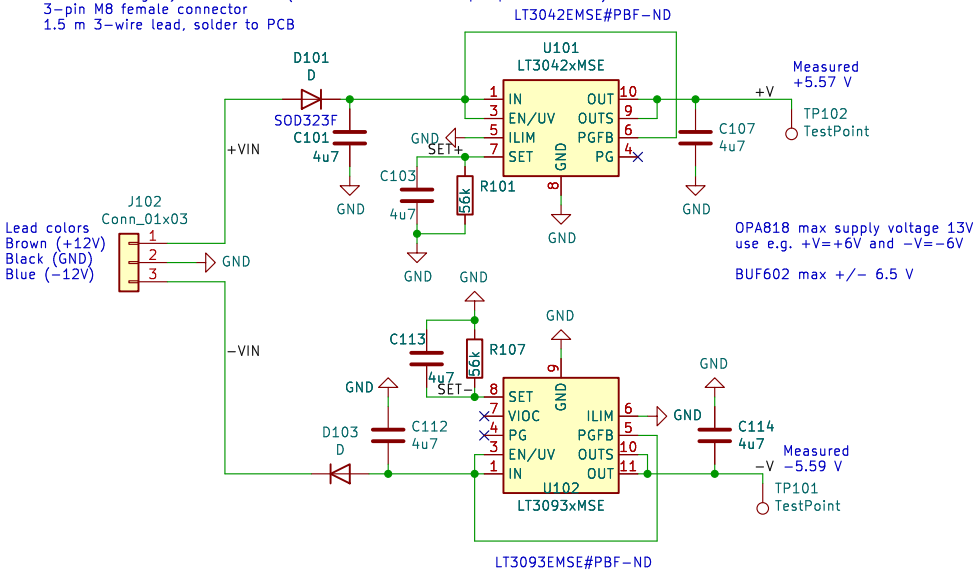
Fast detector:
Diode FDS015, RF 1.2 kOhm, CF 0.6 pF gives BW-3dB: 452 MHz

Slow detector:
Diode S5973, RF 1 MOhm, CF None, BW-3db: 3.5 MHz



PSU:
Thorlabs LDS12B
±12 VDC Regulated Linear Power Supply, 6 W
Lumberg RSMV3 male connector, 3-pin

PSU-lead: Digikey A120947-ND (mates with Thorlabs 3-pin psu connector)
3-pin M8 female connector
1.5 m 3-wire lead, solder to PCB



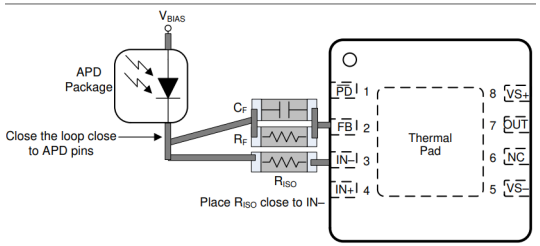


Figure 60. Improved TIA Layout

Open Hardware

anders.e.e.wallin "at" gmail.com

Sheet: /
File: working.kicad_sch

Title: 1" Photodiode Transimpedance Amplifier - OPA818 + BUF602

Size: A4	Date: 2020-07-21	Rev: draft
KiCad E.D.A. eeschema 7.0.6		Id: 1/1