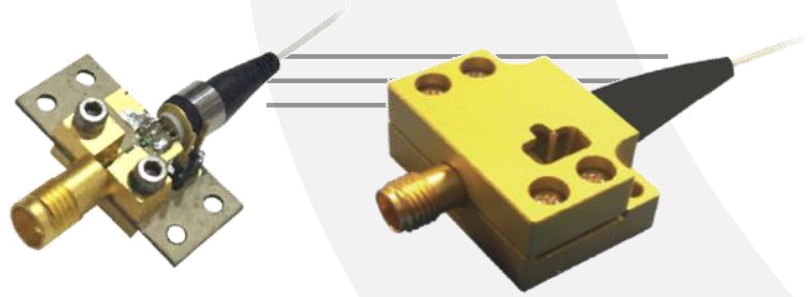




PD-30



DEVICE

30 GHz Linear InGaAs PIN Photodetector

OVERVIEW

The Optilab PD-30 is a highly linear, 30 GHz bandwidth InGaAs PIN photodetector that is ideal for use in O/E front-ends requiring wide band frequency response. The coplanar waveguide photodiode design optimizes speed and sensitivity for the 1260 nm through 1610 nm wavelength range, and assures a 30 GHz frequency response necessary for digital and analog applications. The front-illuminated mesa-structured PIN design allows a high input power level of up to 20 mW. The PD-30 is available in a standard 2-pin package with SMA RF connector output for ease of assembly, and can be ordered with or without the external protective housing. Contact Optilab for more information.

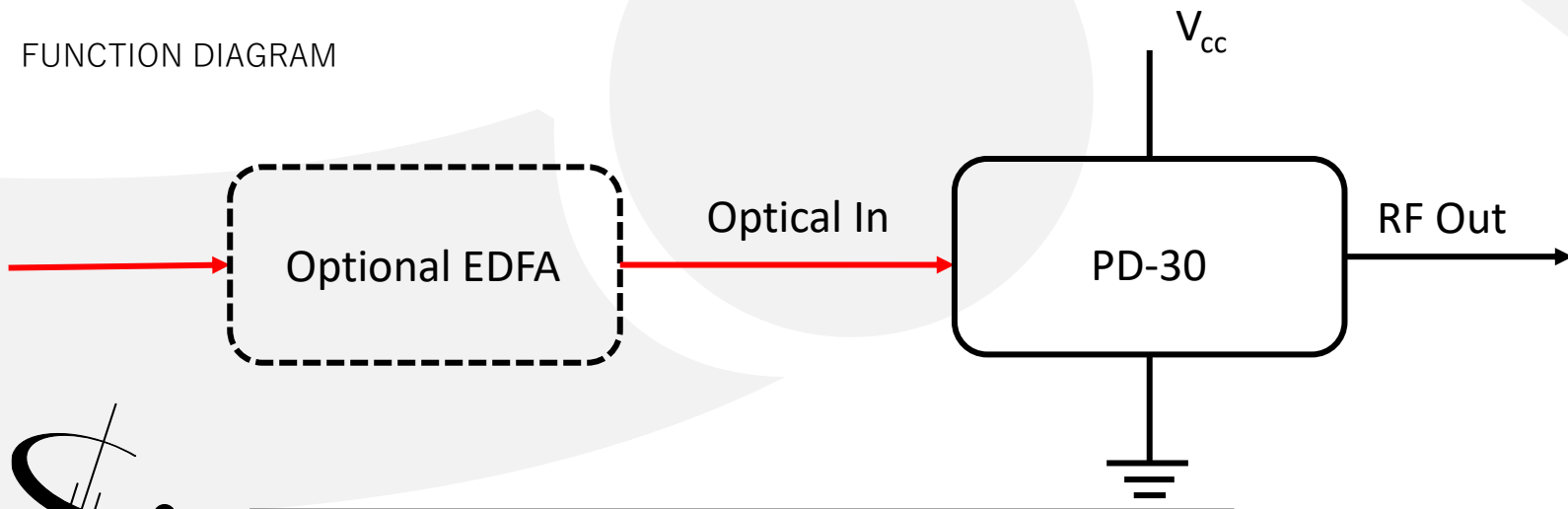
FEATURES

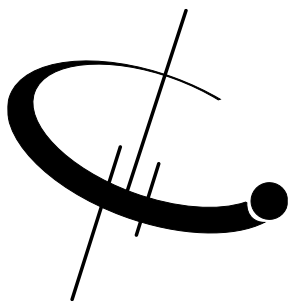
- Bandwidth 60 KHz to 30 GHz, AC coupled
- DC to 30 GHz, DC coupled
- Highly linear to 30 mW+ input power
- Operating Temperature from -10 °C to +60 °C (TQ Version: -45 °C to +75 °C)
- High current handling up to 35 mA
- Flat frequency response, ± 1 dB
- Useful spectral range 850 nm – 1650 nm

USE IN

- 30 GHz Analog RF over Fiber
- Optically amplified photonics link
- RZ and NRZ up to 20 Gb/s
- Coherent lightwave systems
- Front-End O/E converter for test instrument

FUNCTION DIAGRAM





PD-30

SPECIFICATIONS

Optimized Operating Wavelength	1260 nm to 1610 nm
Useful Operating Wavelength	850 nm to 1650 nm
Optical Input Level	20 mW max.
S21 3 dB Bandwidth	28 GHz min., 30 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Low Frequency Cut Off	60 KHz
Responsivity	0.8 A/W @ 1550 nm typ.
Dark Current @ 25°C, 5 V	10 nA typ., 100 nA max.
Optical Return Loss	-30.00 dB typ.
Optical PDL @ 1550 nm	0.05 dB max.
Optical Fiber	SMF-28
Bias Voltage	5 V typ.
Impedance	50 Ω
Coupling	DC-Coupled, AC-Coupled is available

GENERAL

Ripple over any 1 GHz	±1.0 dB max.
Group Delay	< 7.0 ps
2 nd Harmonics Distortion	-70.0 dBc max.
3 rd Harmonics Distortion	-75.0 dBc max.

ANALOG APPLICATIONS

SFDR	113 dB Hz ^{2/3}
Link Loss	-25 dB @ 10 dBm Optical Input

LINK PERFORMANCE W/ LT-20

Operating Temperature	Standard: -10 °C to +60 °C TQ Version: -45 °C to +75 °C
Storage Temperature	-55 °C to +75 °C
Operating Humidity	85%
Photodiode Bias Voltage	5 V, ± 1 V DC
Package Type	2-pin module with SMA Female RF connector
Dimensions	30 mm x 20 mm x 14 mm
Fiber Connector	FC/APC
Optical Fiber	SMF-28 with 900 mm tube

MECHANICAL

ABSOLUTE MAXIMUM RATINGS

PIN Bias Voltage	+2.0 to +7 V
Forward Current	35 mA
Optical Input Power	30 mW
Lead Soldering Temp (10s)	250 °C





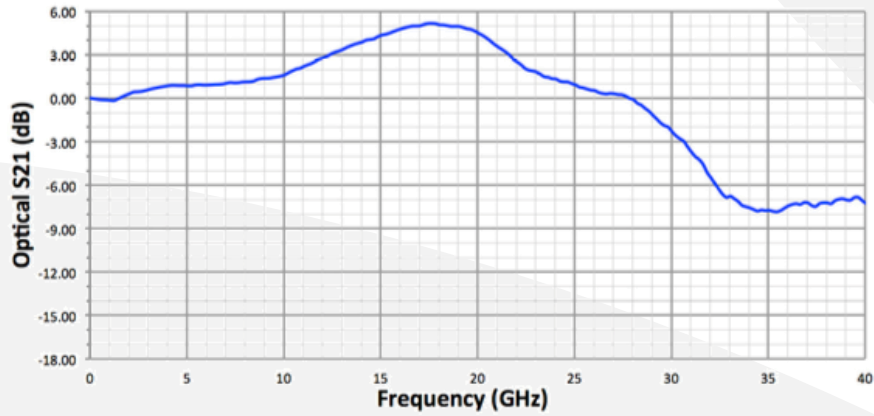
PD-30

PD-30-X-Y-ZZ (Temperature Qualified Version available upon request)

OPTIONS

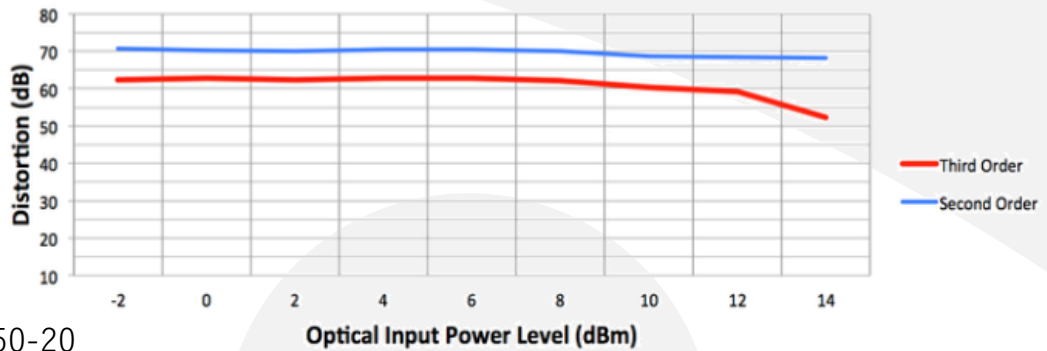
X:	A, No Housing, default	Y:	S. SMA Connector	ZZ:	DC, DC-Coupling
	B, Legacy Housing		K. K Connector		AC. AC Coupling
	C, External Housing				

S21 O/E RESPONSE

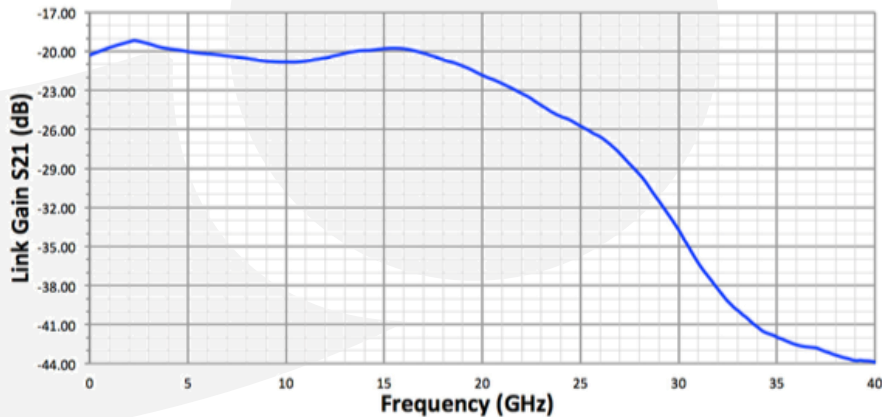


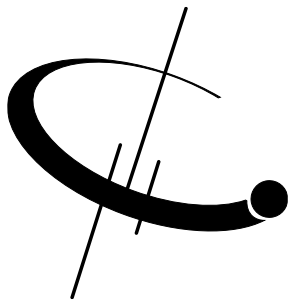
CSO, CTB LINEARITY MEASUREMENT

Second and Third Order Distortion vs. Optical Input



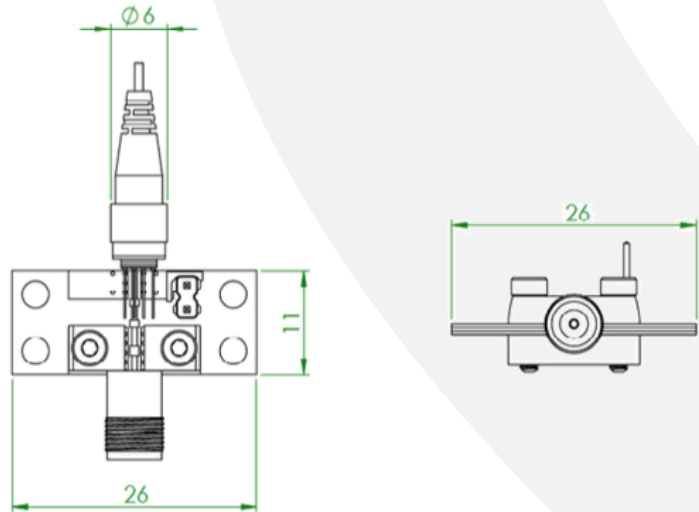
LINK GAIN WITH IM-1550-20



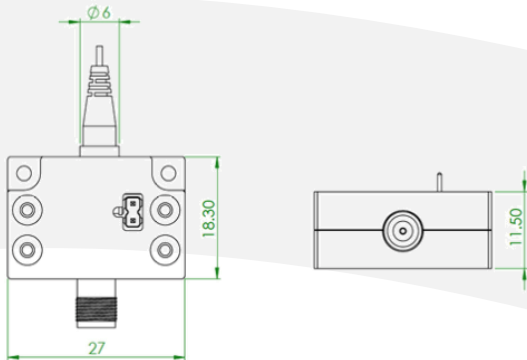


PD-30

PD-30-A Mechanical Drawing



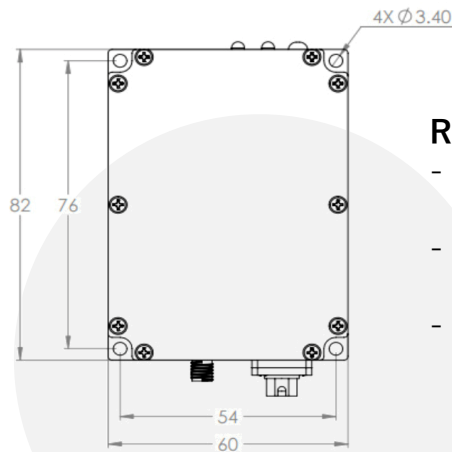
PD-30-C Mechanical Drawing



- ¹ All measurements are in Metric
 - ² External housing is for Mechanical Protection Only
- Legacy housing information available upon request

Unit: mm

PD-30-M: Module



Ready to use module

- Power and Remote Monitoring via USB Port
- Status Monitoring: RS-232 (Standard)
- No TIA for Intrinsic Phase Linearity

Unit: mm

ORDERING OPTIONS

PD-30-X-YY

X : K - K RF connector, A - SMA RF connector

YY : AC - AC coupled, DC - DC coupled

