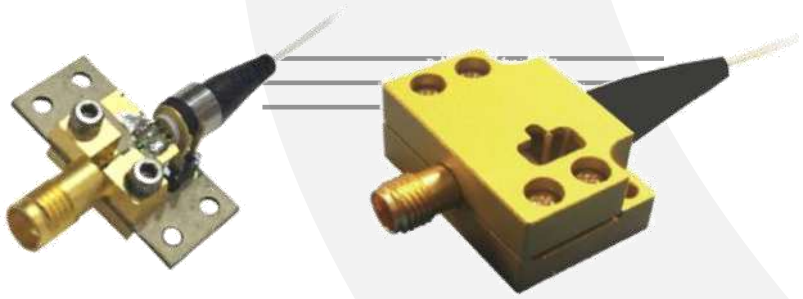
# PD-23



DEVICE

## 23 GHz Linear InGaAs PIN Photodetector

OVERVIEW

The Optilab PD-23 is a highly linear, 23 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 23 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 40 mW. The PD-23 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.

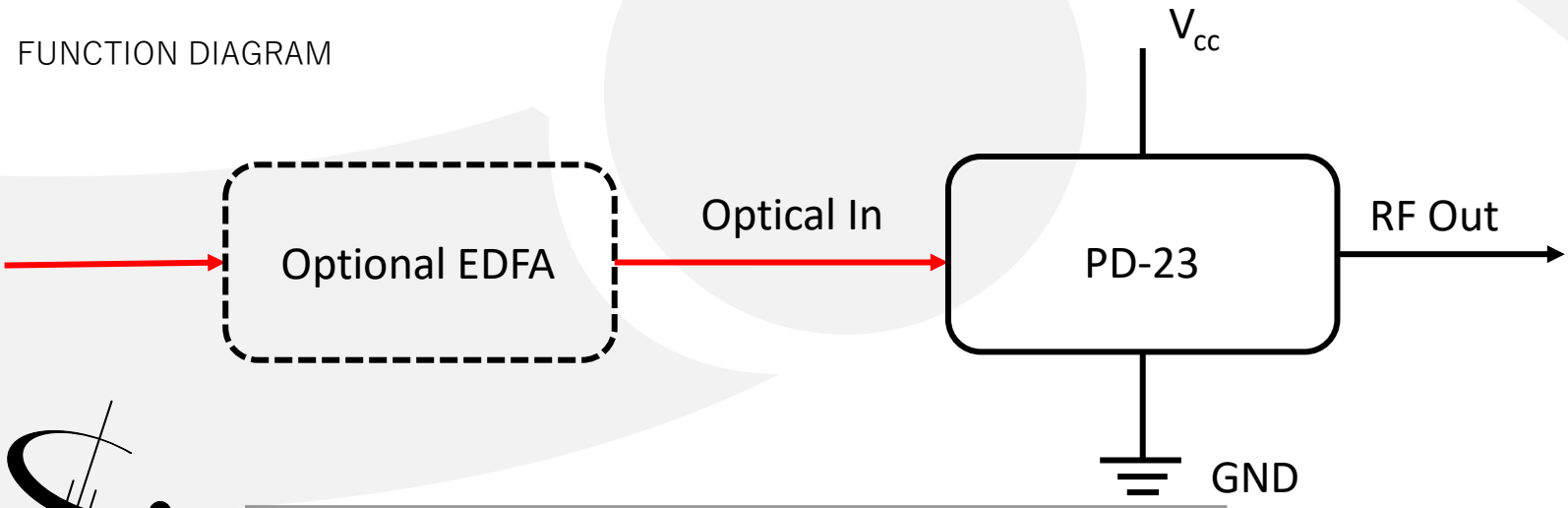
FEATURES

- Bandwidth 60 KHz to 23 GHz, AC coupled
- DC to 23 GHz, DC coupled
- Highly linear to 40 mW+ input power
- High current handling up to 35 mA
- Flat frequency response, ± 1 dB
- Useful spectral range 850 nm - 1650 nm
- Operating Temperature from -30 °C to +60 °C (TQ Version: -45 °C to +75 °C)

USE IN

- 23 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




Product specifications and description are subject to change without notice. © 2021 Optilab, LLC. PD-23. Nov 2021 Rev. 1.2

# PD-23

## SPECIFICATIONS

### GENERAL

| | |
|---|---|
| Optimized Operating Wavelength | 1260 nm to 1610 nm |
| Useful Operating Wavelength | 850 nm to 1650 nm |
| Optical Input Level | 40 mW max. |
| S21 3 dB Bandwidth | 19 GHz min., 21 GHz typ. |
| S22 Characteristics | < -10 dB @ 12 GHz, < -6 dB @ 20 GHz |
| Low Frequency Cut Off | 60 KHz; DC for DC version |
| Responsivity | 0.9 A/W @ 1550 nm min., 1.0 A/W @ 1550 nm typ., 0.8A/W @ 1550nm min.(TQ ver.) |
| 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 | AC-Coupled, DC Coupled is available |

### MECHANICAL

| | |
|---|---|
| Operating Temperature | Standard: -30 °C to +60 °C<br>Temperature Qualified: -45°C to +75°C |
| Storage Temperature | -65 °C to +75 °C |
| Operating Humidity | 85% |
| 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 |

### ABSOLUTE MAXIMUM RATINGS

| | |
|---|---|
| PIN Bias Voltage | +2.0 to +7 V |
| Forward Current | 35 mA |
| Optical Input Power | 40 mW |
| Lead Soldering Temp (10s) | 250 °C |

### OPTIONS

**PD-23-X-YY**

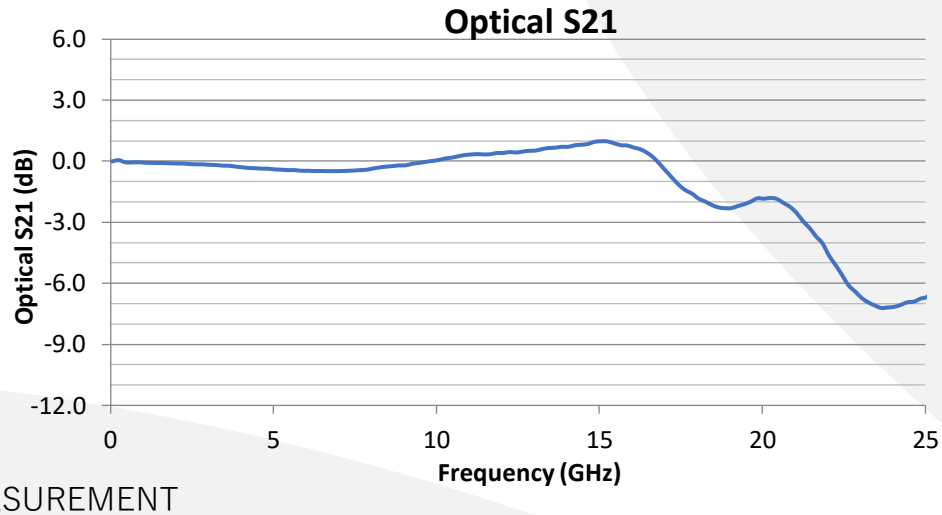
**X:**
A, No Housing, default
B, Legacy Housing
C, External Housing

**YY:**
DC, DC Version
AC, AC Version

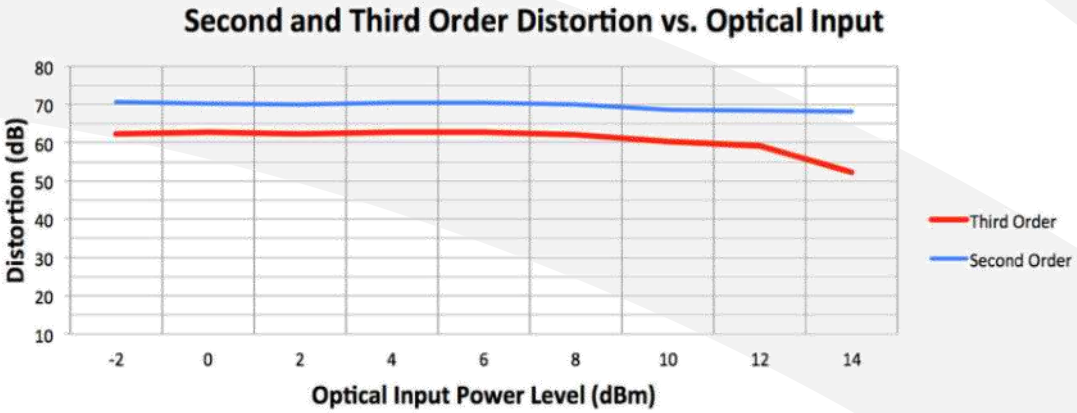
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# PD-23

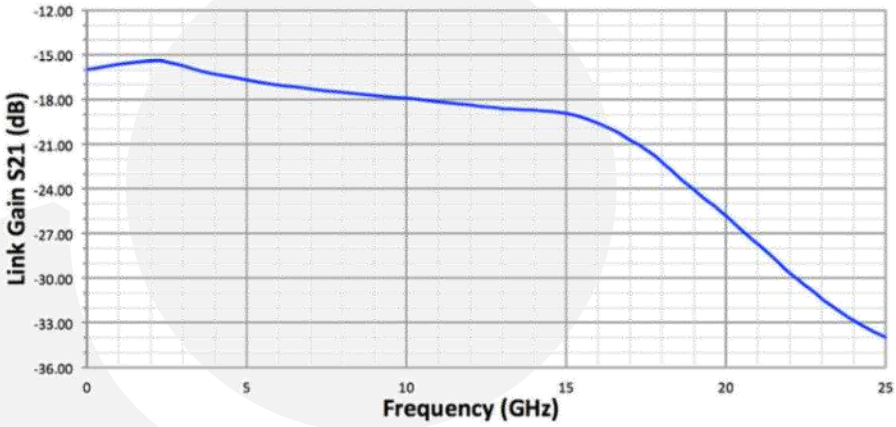
S21 O/E RESPONSE




CSO, CTB LINEARITY MEASUREMENT

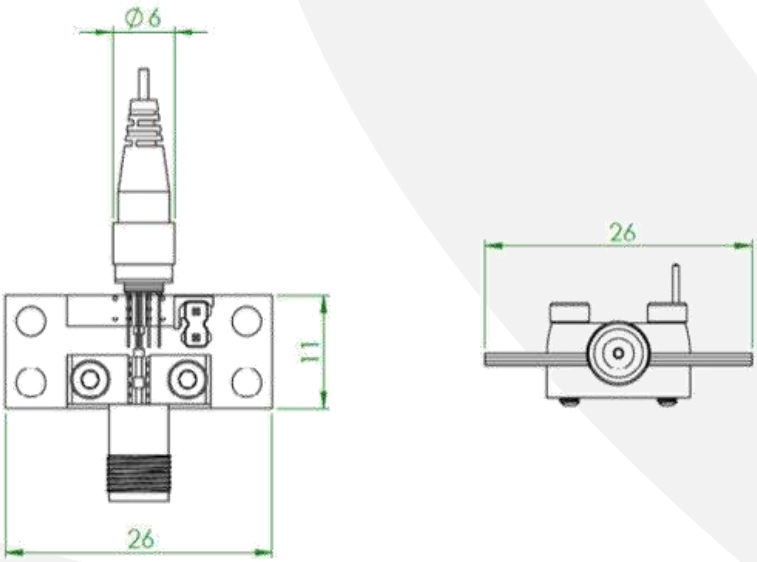



LINK GAIN WITH IM-1550-20

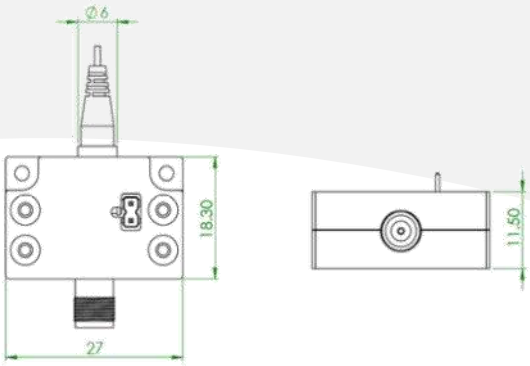


# PD-23

PD-23-A Mechanical Drawing




PD-23-C Mechanical Drawing




[1] All measurements are in Metric

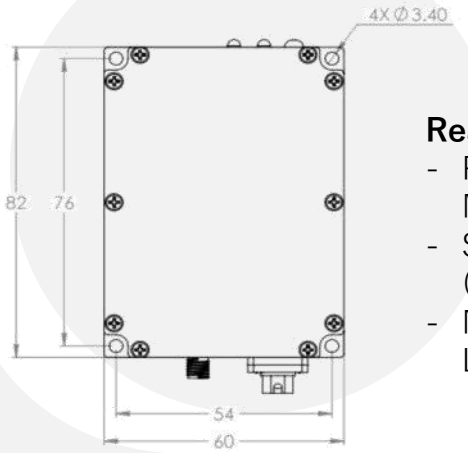
[2] External housing is for Mechanical Protection Only

Legacy housing information available upon request

Unit: mm

PD-23-M: Module




**Ready to use module**

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

Unit: mm