

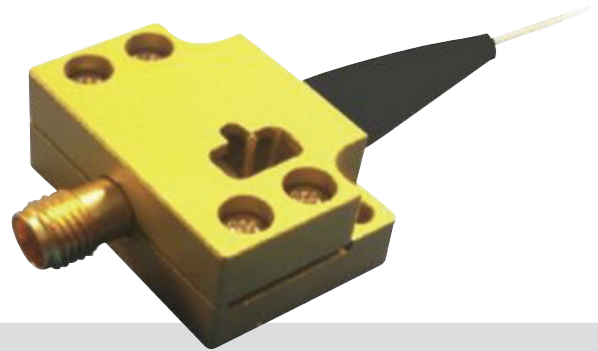
# F-PD-23

## 23 GHz Linear InGaAs PIN Photodetector



The F-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 F-PD-23

is available in a standard 2-pin package with SMA RF connector output for ease of assembly.



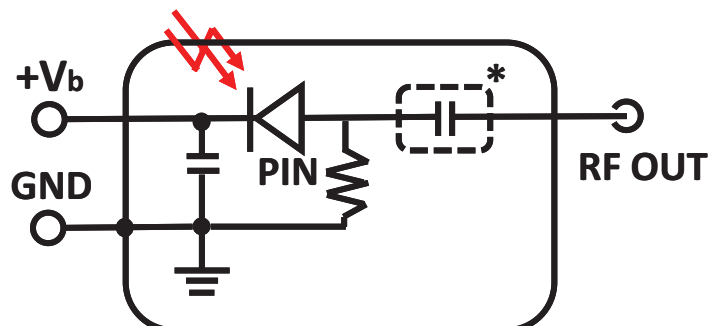
### Features

- 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,  $\pm 1$  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

### Functional Diagram



## Specifications

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.)

## General

Dark Current @ 25°C	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	4 V typ.
Impedance	50 $\Omega$
Coupling	AC-Coupled, DC Coupled is available

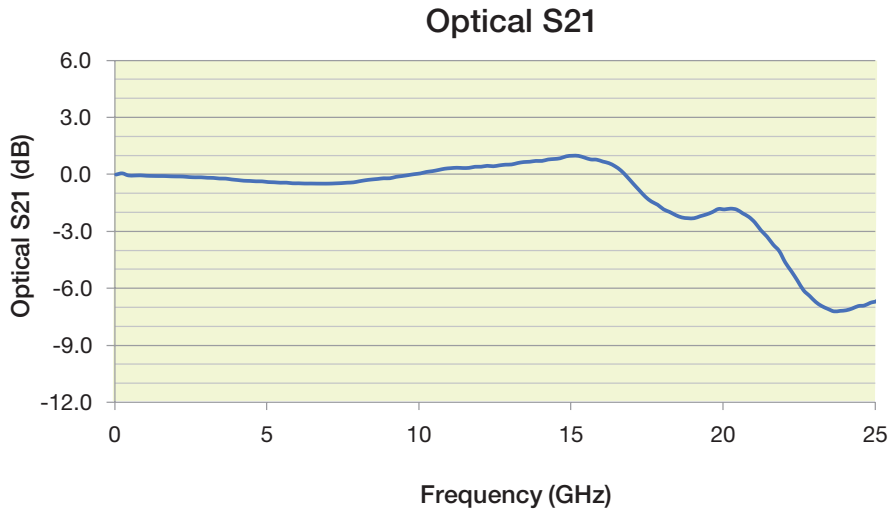
## Mechanical

Operating Temperature	Standard: -30 °C to +60 °C 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

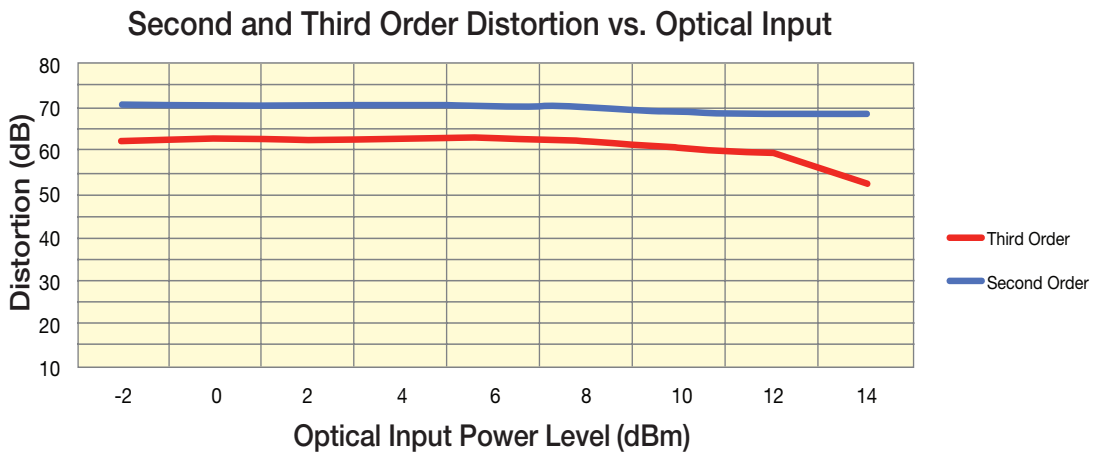
## Absolute Maximum Ratings

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

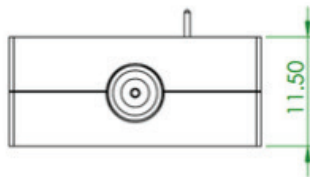
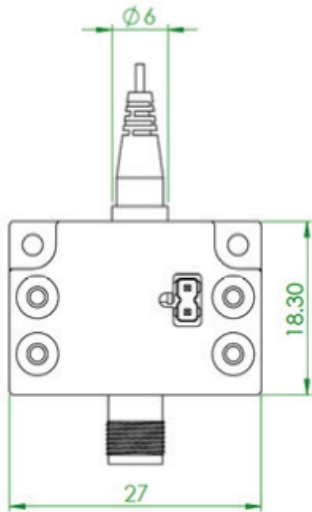
## S21 O/E Response



## CSO, CTB Linearity Measurement



## Mechanical Drawing



<sup>1</sup> All measurements are in Metric

<sup>2</sup> External housing is for Mechanical Protection Only  
Legacy housing information available upon request

Unit: mm