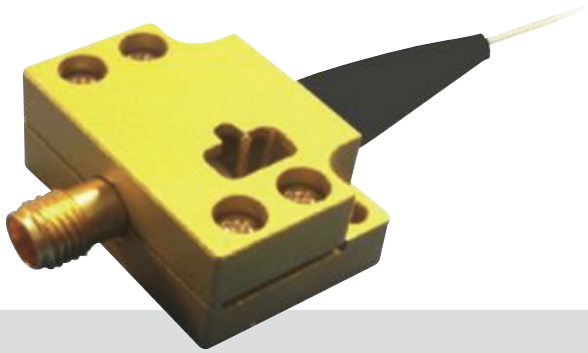
F-PD-30-D-K

30 GHz Linear InGaAs PIN Photodetector

mks | Newport

The F-PD-30-D-K 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 F-PD-30-D-K is available in a standard 2-pin package with SMA RF connector output for ease of assembly.



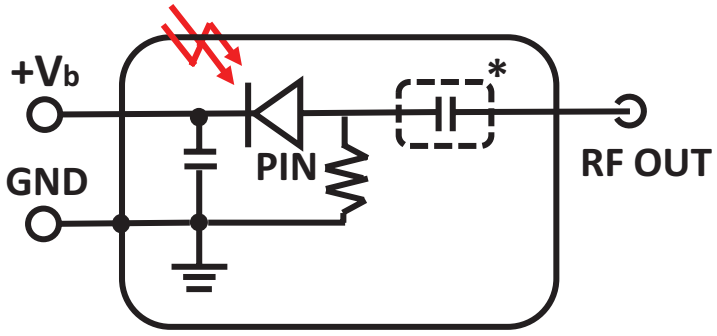
Features

- 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 – 165 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

Functional Diagram



Specifications

General

Optimized Operating Wavelength	1260 nm to 1610 nm
Useful Operating Wavelength	850 nm to 1650 nm
Optical Input Level	10 mW average, 20 mW peak
S21 3 dB Bandwidth	28 GHz min., 30 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Low Frequency Cut Off	60 kHz
Responsivity	0.80 A/W @ 1550 nm typ.
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.
Bias Voltage	4 V typ.
Impedance	50 Ω
Coupling	DC-Coupled

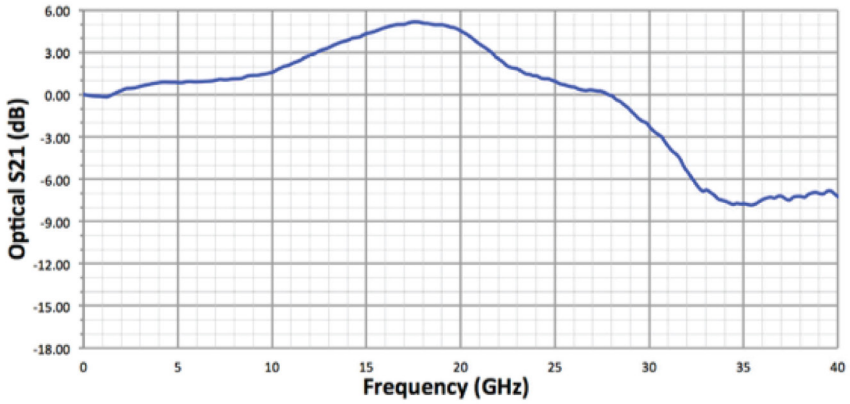
Mechanical

Operating Temperature	-10 °C to +60 °C
Storage Temperature	-55 °C to +75 °C
Operating Humidity	85%
Photodiode Bias Voltage	5 V, ± 1 V DC
Package Type	K Connector Female
Dimensions	30 mm x 20 mm x 14 mm
Fiber Connector	FC/APC
Optical Fiber	SMF-28 with 900 mm tube (HI1060 fiber available upon request)

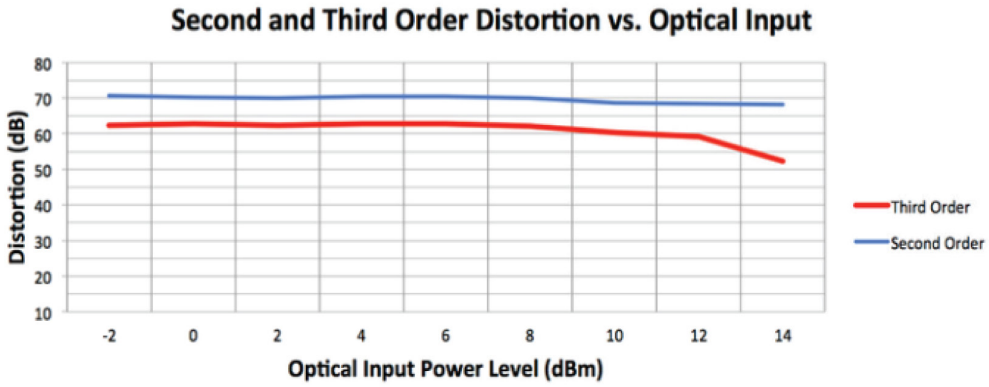
Absolute Maximum Ratings

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

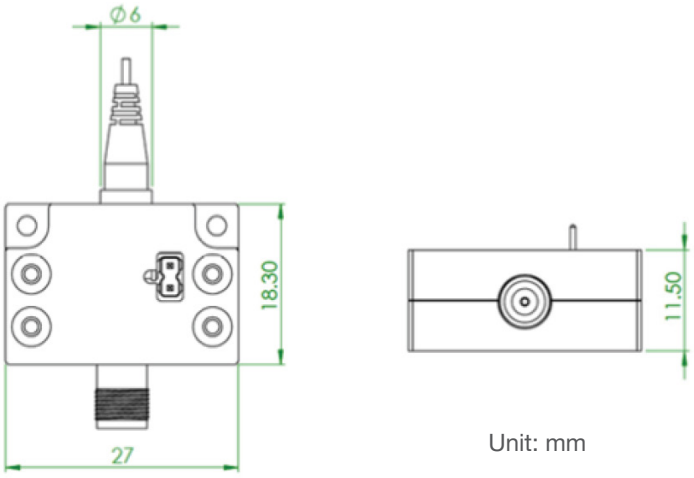
S21 O/E Response



CSO, CTB Linearity Measurement



Mechanical Drawing



Unit: mm

Related Amplifier

- F-AMP-SM

The F-AMP-SM is a high-gain 1064 nm pre-amplifier module in a compact housing

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