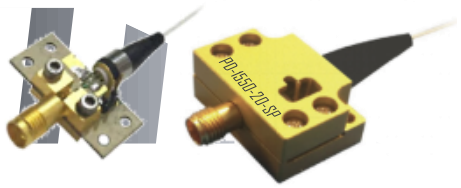
PD-1550-20-SP

OCT Components



Space Grade Linear InGaAs PIN Photodetector, 23 GHz

The PD-1550-20-SP 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, analog and space laser applications. The front-illuminated mesa-structured PIN design allows a high input power level of up to 40 mW. The PD-1550-20-SP 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.

The photodetector passes satellite environmental qualification test project such as temperature, vibration, shock, thermal and radiation test, making it qualified for space laser communication.

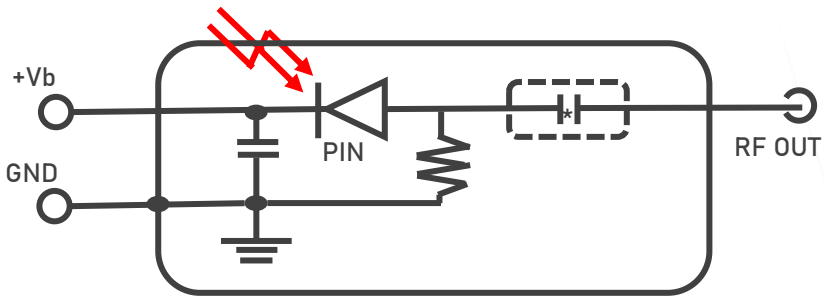
USE IN

- CubeSat
- Free Space Comunication
- Optical Communications Terminal (OCT)
- Remote Sensing
- 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

FEATURES

- 60 KHz to 23 GHz Bandwidth, AC Coupled
- DC to 23 GHz Bandwidth, 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 to 1650 nm
- Operating Temperature from -30°C to +60°C (TQ Version: -45°C to +75°C)
- Space Grade

FUNCTIONAL DIAGRAM



*Optional DC Block for AC Coupled Version

ORDERING OPTIONS

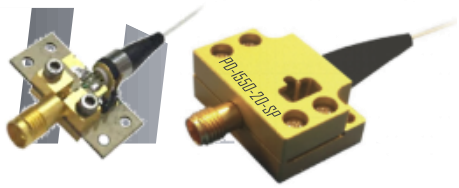
PD-1550-20-SP-X-YY-SP

X:
- A, No Housing, Default
- B, Legacy Housing
- C, External Housing

YY:
- DC, DC Version
- AC, AC Version

PD-1550-20-SP

OCT Components



GENERAL 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 max. @ 12 GHz, -6 dB max. @ 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.; 0.8 A/W @ 1550 nm min. (TQ ver.)
Dark Current @ 25°C	10 nA typ.; 100 nA max.
Optical Return Loss	-30 dB typ.
Optical PDL @ 1550 nm	0.05 dB max.
Optical Fiber	SMF-28
Bias Voltage	4 V typ.
Impedance	50 Ω
Coupling	AC-Coupled, DC Coupled is Available

MECHANICAL SPECIFICATIONS

Operating Temperature	-30°C to +65°C
Storage Temperature	-40°C to +85°C
Operating Humidity	85%
Package Type	2-pin Module with SMA Female RF Connector
Dimensions	30 x 20 x 14 mm
Fiber Connector	FC/APC
Optical Fiber	SMF-28 with 900 mm Tube

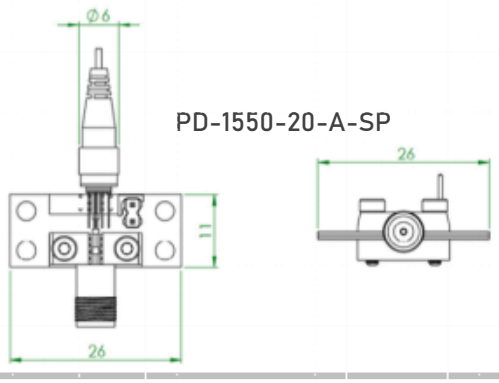
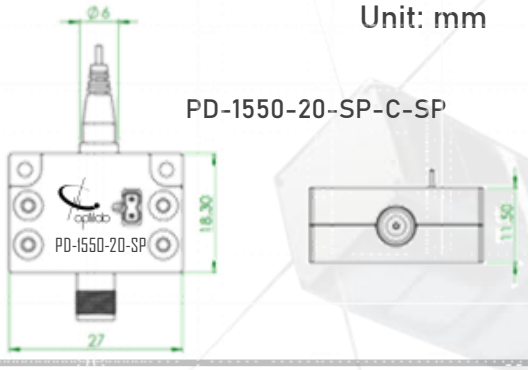
ABSOLUTE MAXIMUM RATING

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

MECHANICAL DRAWING

Unit: mm

PD-1550-20-A-SP



PD-1550-20-SP-C-SP