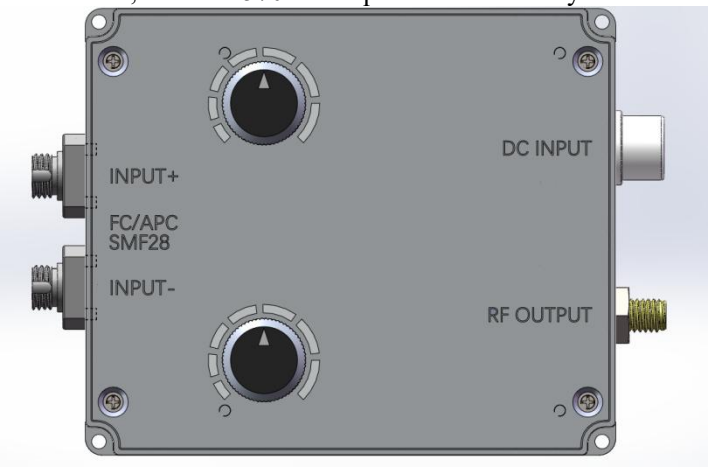
BPD570 APD Balanced Photodetector

Overview

The Avalanche Photodiode (APD) Balanced Detector is a balanced receiver that eliminates common-mode noise by subtracting two input signals. Utilizing two matched avalanche photodiodes (APD) and an ultra-low-noise, ultra-low-distortion, high-speed transimpedance amplifier, this detector is an ideal choice for applications requiring low optical input power. Each APD is coupled via a length-matched FC/APC fiber connector to prevent optical path length differences between the input and the active region of the photodiode. Compared to other balanced detectors that use silicon or InGaAs PIN photodiodes, the BPD570 is unique in its extremely low NEP and optical gain control.



Features

Optical gain control

- Low NEP
- Excellent common-mode rejection rat
- Low noise

Applications

- OCT
- DAS
- Heterodyne detection
- Optical delay measurement

Specifications

Model	BPD570A-10M	BPD570A-75M	BPD570A-200M	BPD570A-400M
Material	Si APD			
Wavelength Range	400-1100nm			
Input Interface	FC/APC（62.5/125 multimode fiber）			
Sensitivity	0.6A/W @905nm			
Common-Mode Rejection Ratio	>30dB			
Bandwidth [a]	DC-10MHz	DC-75MHz	DC-200MHz	DC-400MHz
Rise Time [a]	35ns	4.5ns	1.8ns	1ns
Transimpedance Gain [b]	165kV/A	26kV/A	6kV/A	2.6kV/A
M-Factor	50-100	50-100	50-100	50-100
Saturation Power [c]	270nw	1.8uw	9.5uw	22uw

Offset Voltage [a]	±1mV	±1mV	±1mV	±1mV
Noise Voltage a	2mV RMS	2mV RMS	1mV RMS	1mV RMS
Equivalent Noise Power	0.07pW/ √ Hz	0.21pW/ √ Hz	0.68pW/ √ Hz	1.02pW/ √ Hz

Model	**BPD570C-10M**	**BPD570C-75M**	**BPD570C-200M**	**BPD570C-400M**
Material	InGaAs APD			
Wavelength Range	1000-1700nm			
Input Interface	FC/APC（Internal SMF28e+ fiber）			
Sensitivity	0.9A/W @1550nm			
Common-Mode Rejection Ratio	>35dB			
Bandwidth [a]	DC-10MHz	DC-75MHz	DC-200MHz	DC-400MHz
Rise Time [a]	35ns	4.5ns	1.8ns	1ns
Transimpedance Gain [b]	165kV/A	26kV/A	6kV/A	2.6kV/A
M-Factor	8-18	8-18	8-18	8-18
Saturation Power [c]	1.5uw	9.5uw	37uw	95uw
Offset Voltage [a]	±1mV	±1mV	±1mV	±1mV
Noise Voltage [a]	2mV RMS	2mV RMS	1mV RMS	1mV RMS
Equivalent Noise Power	0.67pW/ √ Hz	0.95pW/ √ Hz	1.28pW/ √ Hz	1.5pW/ √ Hz

General Detector Parameters	**Typical value**
Maximum Output Amplitude [a]	±2.0V
Operating Voltage	±12V
Operating Current	<200mA
Output Impedance	50Ω
Output Coupling Mode	DC
Output Connector	SMA female
Operating Temperature	0~55℃
Storage Temperature	-40~85℃

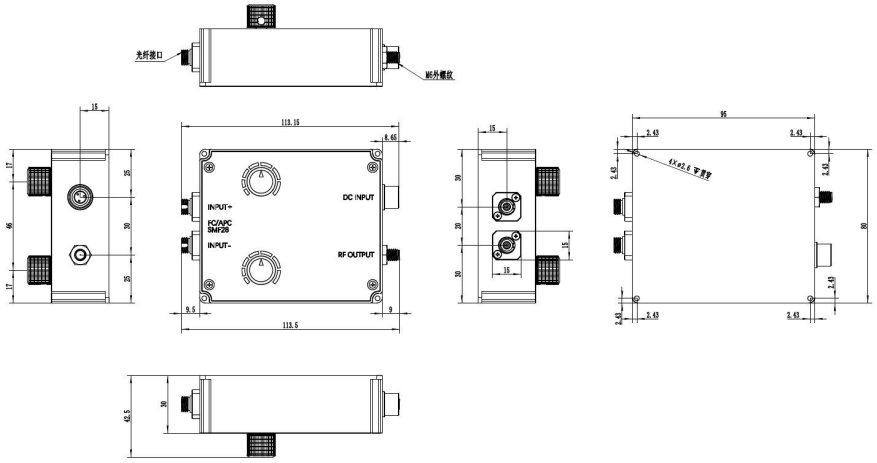
Notes:

a For a 50 Ω load

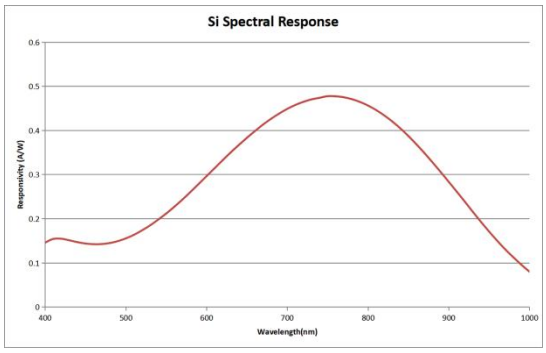
b For a high-impedance load

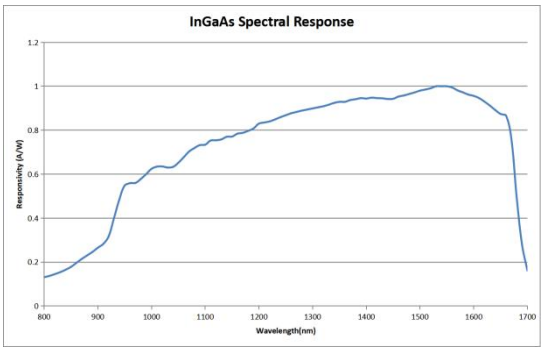
c When M is at its maximum

Mechanical Dimensions



Response Curve





Note: The response curve represents typical values and is provided for reference only.

Packing List

NO	Item Name	Quantity	Unit	Notes
1	Photoelectric Detector	1	Piece	
2	±12V Linear Power Supply	1	Piece	
3	SMA-to-BNC RF Cable	1	Stick	