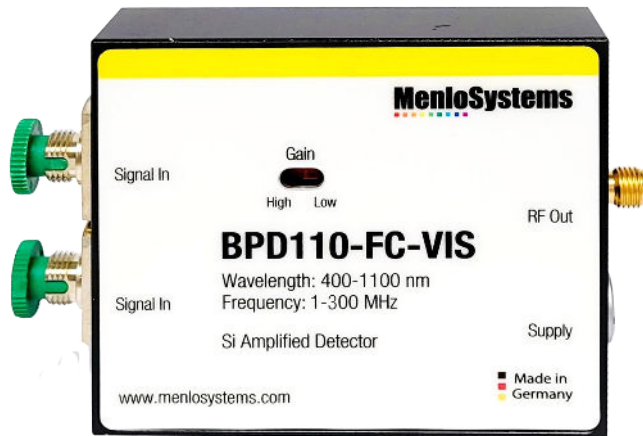


BPD110

Balanced Photodetector

MenloSystems



KEY SPECIFICATIONS

- Excellent Signal-to-noise Ratio
- Adjustable Gain
- 3 dB Bandwidth of up to 100 MHz
- CMRR of up to 20 dB
- Wide Wavelength Range from 320 nm to 2600 nm

APPLICATIONS

- Beat Detection Unit
- Detection of Low Light Level Signals
- Heterodyne Laser Beat Signal Detection

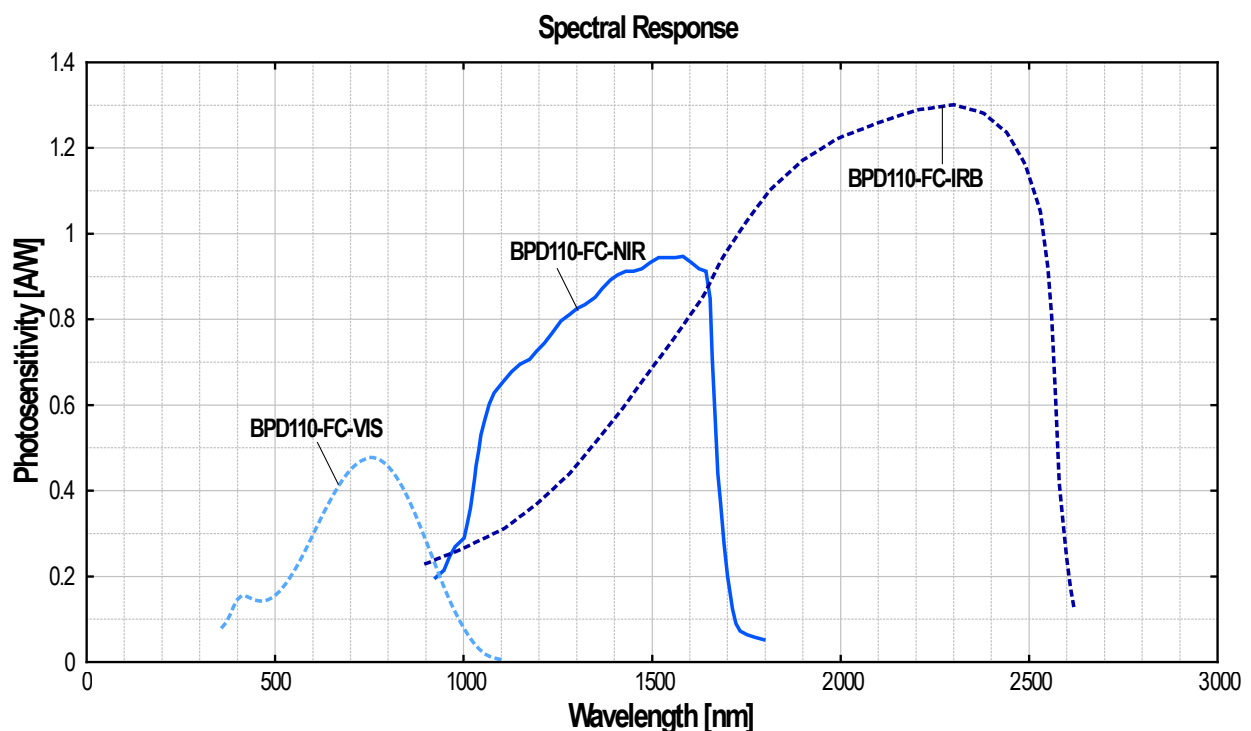
FEATURES

- OEM Integration
- Fiber-coupled Optical Input
- Two Switchable Gain Settings
- Integrated Low-noise Amplifier
- Easy-to-use Package
- Low-noise Power Supply Included

The BPD110 balanced photodetector from Menlo Systems functions as a balanced receiver by subtracting two optical input signals and effectively cancelling common-mode noise, allowing for the precise detection of subtle signal variations. It integrates Two carefully matched photodiodes are integrated with an ultra-low-noise, high-speed to achieve a high common mode rejection ratio (CMRR) and superior noise suppression. It offers an excellent signal-to-noise ratio and is adjustable gain, a 3 dB bandwidth of up to 100 MHz, and a broad wavelength range from 320 nm to 2600 nm, the BPD110 is ideal for a variety of high-precision optical applications.

SPECTRAL RESPONSE

Spectral response characteristics of the photodiodes built into the various detector models.



BPD110

Balanced Photodetector



SPECIFICATIONS

BPD110	-FC-VIS	-FC-NIR	-FC-IRB
Detector Type	Si	InGaAs	InGaAs
Optical Input	FC/PC receptacle	FC/PC receptacle	FC/PC receptacle
Spectral Range	400–1100 nm	950–1650 nm	1000–2600 nm
Frequency Range	1–300 MHz	1–300 MHz	1–100 MHz
Common mode rejection ratio (CMRR)	typ. 20	typ. 25	typ. 15
Damage Threshold	18 mW	3 mW	5 mW
Detector Diameter	250 μm	120 μm	300 μm
Lambda Peak Sensitivity	750 nm	1550 nm	2300 nm
Peak Sensitivity	typ. 0.48 A/W	typ. 0.85 A/W	typ. 1.30 A/W
High Gain Setting			
Saturation Limit (calculated)	46 $\mu\text{W AC}$	22 $\mu\text{W AC}$	17 $\mu\text{W AC}$
3 dB Bandwidth	1–100 MHz	1–100 MHz	1–50 MHz
Gain	typ. 90 kV/A	typ. 90 kV/A	typ. 90 kV/A
Dark State Noise Level	-115 dBm/Hz	-120 dBm/Hz	-115 dBm/Hz
NEP (calculated)	<5 pA/ $\sqrt{\text{Hz}}$	<2.5 pA/ $\sqrt{\text{Hz}}$	<5 pA/ $\sqrt{\text{Hz}}$
Low Gain Setting			
Saturation Limit (calculated)	165 $\mu\text{W AC}$	79 $\mu\text{W AC}$	61 $\mu\text{W AC}$
3 dB Bandwidth	1–110 MHz	1–110 MHz	1–60 MHz
Gain	typ. 25 kV/A	typ. 25 kV/A	typ. 25 kV/A
Dark State Noise Level	-125 dBm/Hz	-130 dBm/Hz	-120 dBm/Hz
NEP (calculated)	<6 pA/ $\sqrt{\text{Hz}}$	<3 pA/ $\sqrt{\text{Hz}}$	<10 pA/ $\sqrt{\text{Hz}}$
Output Impedance	50 Ω	50 Ω	50 Ω
Output Coupling	AC	AC	AC
Output Signal	0–2 V	0–2 V	0–2 V
Output Connector	SMA female	SMA female	SMA female
Supply Voltage	+12 V	+12 V	+12 V
Current Consumption	<60 mA	<60 mA	<60 mA
Operating Temperature	10–40 $^{\circ}\text{C}$	10–40 $^{\circ}\text{C}$	10–40 $^{\circ}\text{C}$
Storage Temperature	-20–80 $^{\circ}\text{C}$	-20–80 $^{\circ}\text{C}$	-20–80 $^{\circ}\text{C}$
Storage Humidity	10–90 % RH	10–90 % RH	10–90 % RH
Device Dimensions	20×60×70 mm ³	20×60×70 mm ³	20×60×70 mm ³

ORDERING INFORMATION

Product Code	BPD110-FC-VIS	BPD110-FC-NIR	BPD110-FC-IRB
Price	2250 €	2250 €	2850 €

Prices and specifications are subject to change without notice. Custom modifications are available, please inquire.



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