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THORLABS

FPD310-V - Nov 17, 2017

Item # FPD310-V was discontinued on Nov 17, 2017. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

SI FAST PIN (RF) AMPLIFIED PHOTODETECTOR

- High Signal-to-Noise Ratio
- Ultrafast up to 1.5 GHz
- Free-Space Coupled Si Photodetector
- Wavelength Range from 400 - 1000 nm

FPD510-V

FPD310-FV

Hide Overview

OVERVIEW

FPD310-V and FPD310-FV High Sensitivity Si PIN Photodetectors: 1 MHz to 1.5 GHz

Features

- Ultrafast Reponse (1.5 GHz)
- 3 dB bandwidth from 10 - 1000 MHz
- OEM Package with Fiber-Coupled or Free-Space Input
- Spectral Sensitivity from 400 - 1000 nm
- Two Gain Settings

Applications

- Detection of Fast Laser Pulses
- Detection of Fiber-Coupled or Free-Space Low-Light Level Signals

Jason Reeves
Sales Engineer
Menlo Systems

Feedback?
Questions?
Need a Quote?

Contact Us

Please note that the FPD310-V and FPD510-V Amplified Photodetectors are available directly from Menlo Systems, Inc. within the United States and from Menlo Systems GmbH outside the United States.

United States
Phone: +1-973-300-4490
Email: ussales@menlosystems.com

Outside United States
Phone: +49-89-189166-0
Email: sales@menlosystems.com

For experiments requiring high bandwidths and extremely short rise times, choose Menlo Systems' FPD310-V series Si photodetector. It is an easy-to-use photodiode package with an integrated high-gain, low-noise, RF amplifier. The FPD310-V series detects light from 400 to 1000 nm and has a rise time of less than a nanosecond. The compact housing facilitates OEM integration.

The FPD310-V series is not suitable for pulses longer than 30 ns or continuous light levels. For more details, please consult the Specs tab or contact Menlo

Systems at sales@menlosystems.com.

FPD510-V and FPD510-FV High Sensitivity PIN Photodetectors: DC to 250 MHz

Features

- High Signal-to-Noise Ratio
- Flat Spectral Response (Less than 3 dB up to 200 MHz)
- OEM Package with Fiber-Coupled or Free-Space Input

Applications

- Detection of Chopped Light Sources
- Fiber-Coupled or Free-Space Low-Light Level Signals

Menlo Systems' FPD510-V high sensitivity Si PIN photodetector is optimized for the highest signal-to-noise ratio when detecting low-level optical beat signals at frequencies up to 250 MHz. The unit is recommended, in particular, for applications in metrology when beat signals of weak power have to be detected in a highly efficient way. The FPD510-V photodetector features an ultrafast free-space photoreceiver with an integrated low-noise transimpedance amplifier. The 3 dB bandwidth of the DC-coupled device is 200 MHz. The compact design of these detectors allows for easy OEM integration.

Power Supply

The FPD310-V and FPD510-V do not come with a power supply. These detectors require a customer-supplied power supply between +8 and +20 VDC. For best performance, we recommend using a linear regulated power supply or a battery. Thorlabs' LDS9 is a suitable power supply that can be wired by the customer to operate these detectors. As can be seen in the drawings for these detectors, a pin and ground are provided for soldering a power supply to the detector. When connecting a power supply, please note the polarity of the supply. A switched power supply is not recommended as it may introduce switching noise in the output signal.

Hide Specs

SPECS

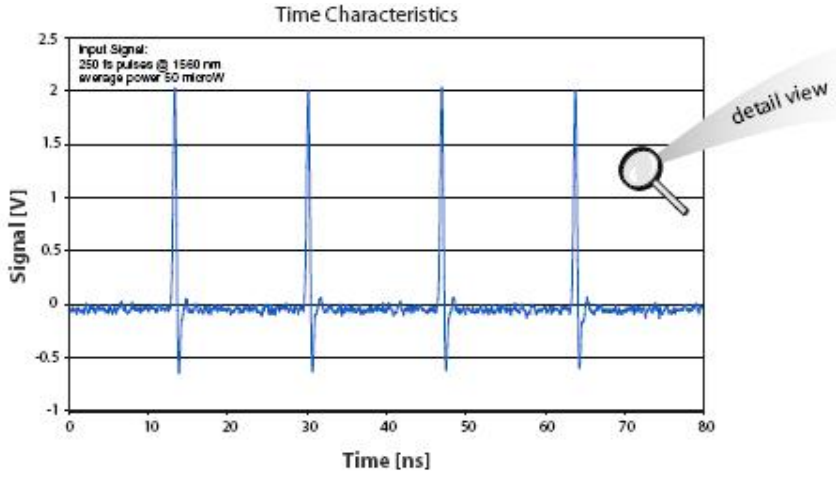
Item #	FPD310-V	FPD310-FV	FPD510-V	FPD510-FV
Optical Input	Fiber-Coupled[a]	Free-Space	Fiber-Coupled[a]	Free-Space
Supply Voltage[b]	+8 to +20 V			
Current Consumption	250 mA		50 mA	
Max. Incident Power	2 mW		10 mW	
Operating Temperature	10 - 40 °C			
Spectral Range[c]	400 - 1000 nm			
Detector Diameter	0.4 mm			
Frequency Range	1 to 1500 MHz		0 to 250 MHz	
3 dB Bandwidth	10 to 900 MHz		0 to 200 MHz	
Rise Time	0.5 ns		2 ns	
Gain Setting 1	5×10^3 V/W		4×10^4 V/W	
Gain Setting 2	5×10^1 V/W			
Dark State Noise Level	-90 dBm		-120 dBm	
NEP (Calculated)	31.5 pW/($Hz^{1/2}$)	30.0 pW/($Hz^{1/2}$)	6.38 pW/($Hz^{1/2}$)	6.0 pW/($Hz^{1/2}$)
Output Connector	SMA			
Output Impedance	50 Ω			
Device Dimensions	60 mm x 50 mm x 27 mm			
Output Coupling	AC		DC	

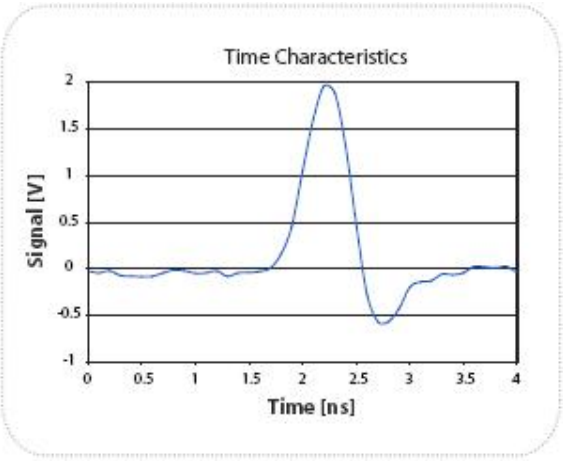
- FC/PC Connector
- Power Supply Not Included
- Other Spectral Ranges on Request

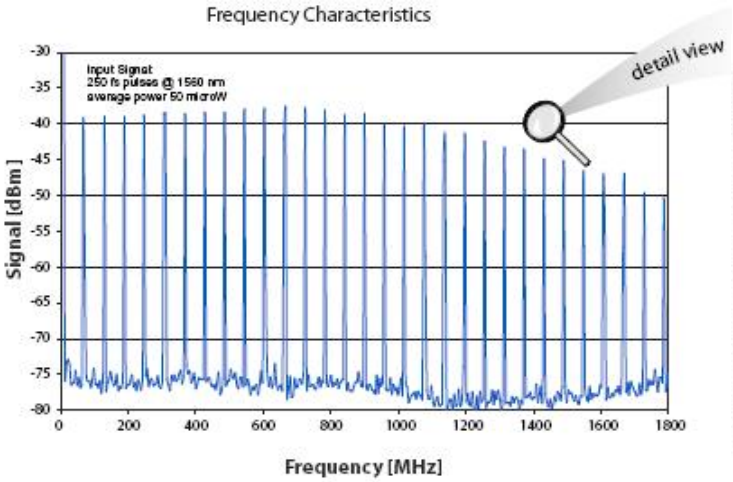
Hide Graphs

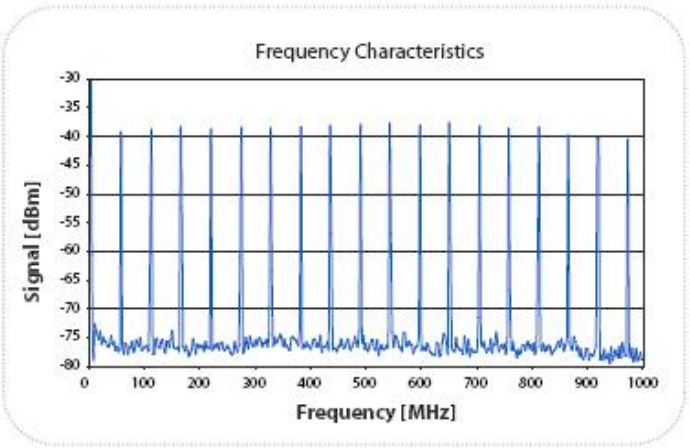
GRAPHS

FPD310-FV and FPD310-V Graphs

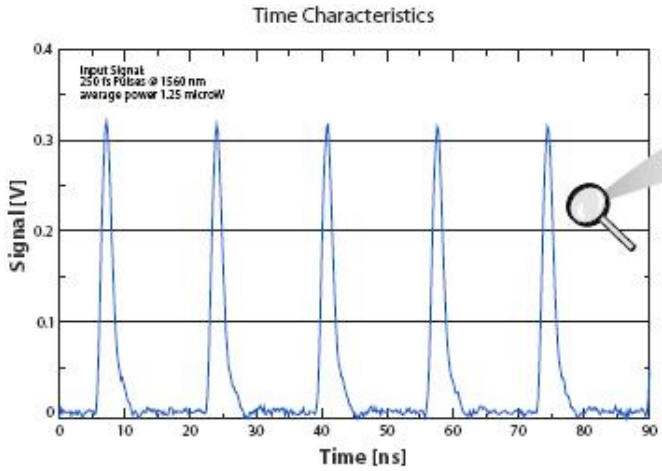


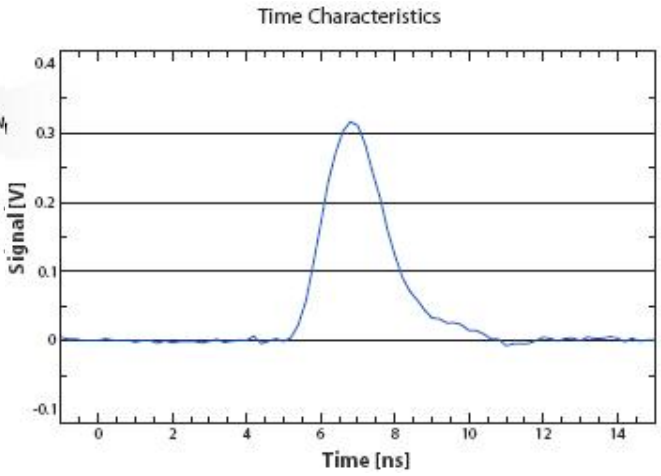


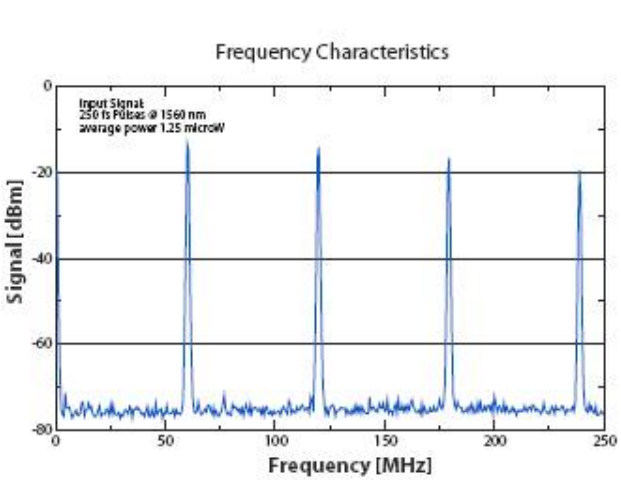


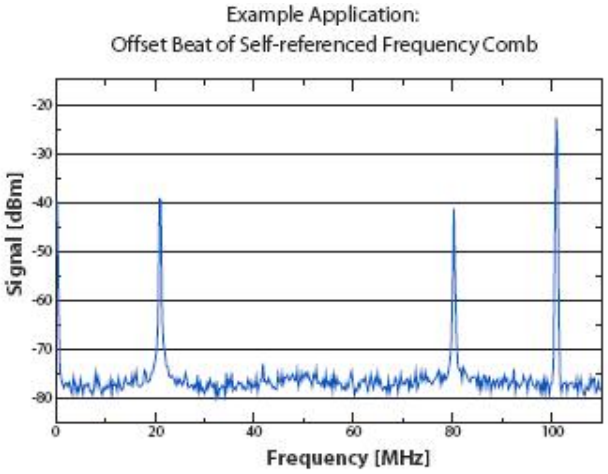


FPD510-FV and FPD510-V Grpahs





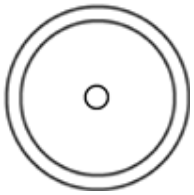




Hide Pin Diagram

PIN DIAGRAM

Signal Out - SMA Female



For connection to a suitable monitoring device, e.g. oscilloscope or RF-spectrum-analyzer, with 50Ω impedance.

Hide Si Fast PIN (RF) Amplified Photodetector

Si Fast PIN (RF) Amplified Photodetector

Part Number	Description	Price	Availability
FPD310-FV	High Sensitivity Si PIN Detector, 400 to 1000 nm, Free Space, 1 MHz to 1.5 GHz	$1,074.00	Today
FPD310-V	High Sensitivity Si PIN Detector, 400 to 1000 nm, Fiber Coupled, 1 MHz to 1.5 GHz	$1,074.00	Lead Time
FPD510-FV	High Sensitivity Si PIN Detector, 400 to 1000 nm, Free Space, DC to 250 MHz	$1,442.00	Today
FPD510-V	High Sensitivity Si PIN Detector, 400 to 1000 nm, Fiber Coupled, DC to 250 MHz	$1,442.00	Today

Visit the *Si Fast PIN (RF) Amplified Photodetector* page for pricing and availability information:
https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=6685