110 GHz Microwave Photonics Receiver



Description

LD-PD manufactures a wide range of component photoreceivers with wide bandwidths up to 110 GHz. The MPR0110 Microwave Photonics Receiver extends link response to greater than 110 GHz via direct optical-to-analog RF conversion for signal remoting, communications, radar and information processing applications.

The unit consists of a high speed InGaAs PIN photodiode coupled to the RF output connector. It includes internal bias decoupling and can operate over a wide range of supply voltages (+3 to +15V). The detector response covers 1300 to 1600 nm. It is pigtailed with 900µm jacketed, single mode (ITU-T G.652.D compliant) fiber and can be terminated with a variety of optical connector options.The entire unit is contained in a sealed housing and weighs less than 25 grams.

Features

- Greater than 110GHz RF bandwidth
- DC Coupled
- Compact lightweigth design
- High responsivity
- Positive supply voltage
- 50Ω output impedance

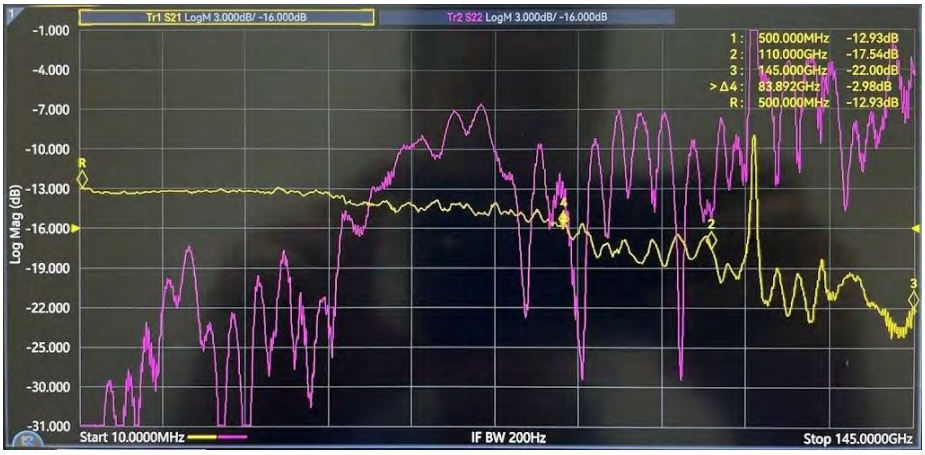
Specifications

Test values (Ta = 22 ± 3°C, Vbias = +2 V)

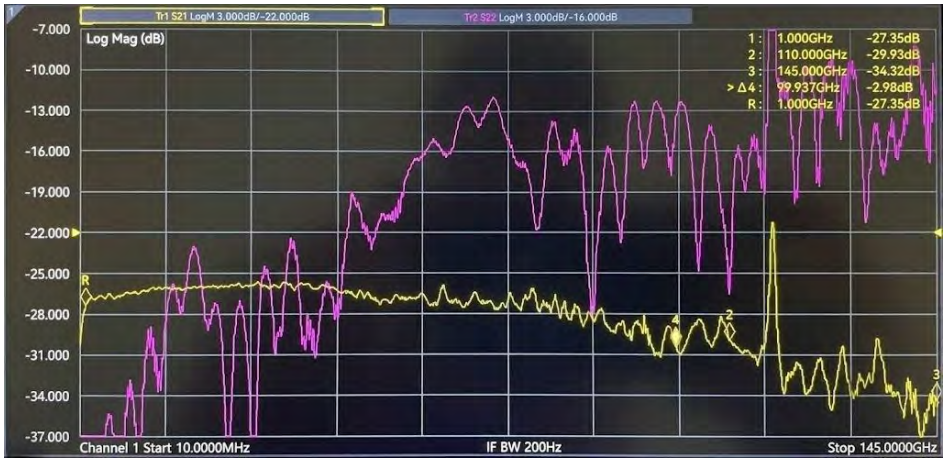
Parameter Name	Agreement Indicator			test value	unit	remarks
	Least value	Representative value	Crest value			
Responsiveness at 1550 nm, Pop = 0 dBm		0.5		0.62	A/W	
Responsiveness at 1310 nm, Pop = 0 dBm		/		0.181	A/W	
dark current		20	60	8.6	nA	
Polarization Correlation @1550 nm		/		＜1	dB	
3 dB bandwidth at 1550 nm, Pop = 0 dBm, PRF = -10 dBm		90		See the test curve	GHz	
6 dB bandwidth at 1550 nm, Pop = 0 dBm, PRF = -10 dBm	110			See the test curve	GHz	
Radio frequency echo reflection at 1550 nm, Pop = 0 dBm, PRF = -10 dBm		-10		See the test curve	dB	
Saturation optical power at 1550 nm, PRF = -10 dBm		6		＞4.8	dBm	

1 Test value under the optimal polarization state.

Radio Frequency Response Testing



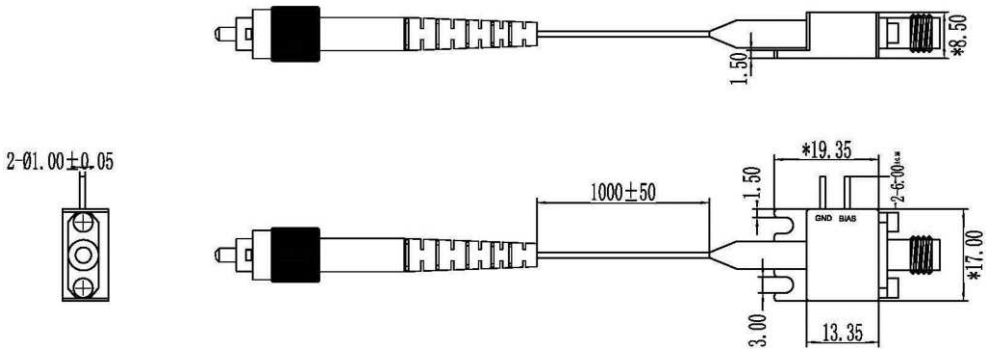
S-parameter test curve at a wavelength of 1550 nm (including the 1.0-to-0.8 converter)



S-parameter test curve at a wavelength of 1310 nm (including the 1.0-to-0.8 converter)

Package Size

External Dimensions and Pin Definitions



Pin Name	Interface Definition	remarks
BIAS	DC Bias Voltage	+1–+3 V; recommended: +2 V
GND	landing	0V
RF	Radio Frequency Output	1.0 mm (Male)
light	optical input	9um SMF, FC/APC interface

Application

- Signal remoting,
- Communications,
- Radar and information processing