18GHz Microwave Photonics Receiver



Description:

LD-PD manufactures a wide range of component photoreceivers with wide bandwidths up to 18 GHz. The MPR0018 Microwave Photonics Receiver extends link response to greater than 18 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:

- Wide Bandwidth
- Internal Bias-T
- DC Coupled
- Hermetically sealed, SMA connector

Application:

- High Speed Optical-fiber Communication
- Microwave Photonic Link
- High speed Test and Measurement

Electrical/Optical Characteristics (@TC = 22±3°C):

Parameter	Sym	Test Condition	Parameter values			Unit
Wavelength range	λ	-	1000-1650			nm
Frequency range	-	-	C Band	X band	Ku band	-
Small signal bandwidth	f-3dB	V R =5V, λ = 1.55μm P in =0dBm, R L =50Ω	DC~8	DC~12	DC~18	GHz
Responsivity	Re	V R =5V, P in =0dBm λ = 1.55μm	≥0.85	≥0.80	≥0.80	A/W
Amplitude Flatness	F	-	≤±1.5			dB
Output VSWR	VSWR	-	≤2.0:1	≤2.0:1	≤2.5:1	-
Dark current	ID	V R =5V, P in =0mW	≤20			nA
1dB compression point saturation Input Optical Power	Ps	VR =5 V, λ=1.55μm, Central Frequency fc=9.5GHz, RFin =-10dBm, Pin =1mW	≥10			dBm
Optical return loss	Lo	λ=1.55μm	≥27			dB

Absolute Maximum Rating (@T C = 22±3°C):

Parameter	Sym	Rating	Unit
Storage temperature range	TSTG	-45~+85	°C
Operating case temperature range	TC	-40~+70	°C
Bias Voltage	VR	12	V
Optical Input Power	Pin	13	dBm
Lead soldering temperature	TP	260 (10s)	°C

Typical Response Curves:

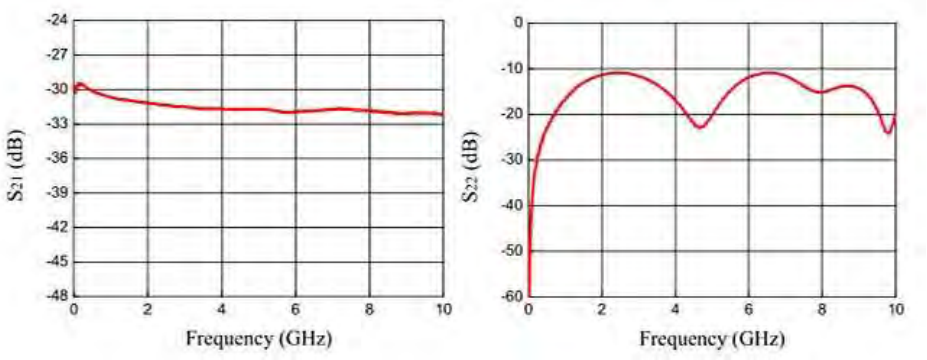


Fig.1 C-Band Photodetector Frequency Response Cruve

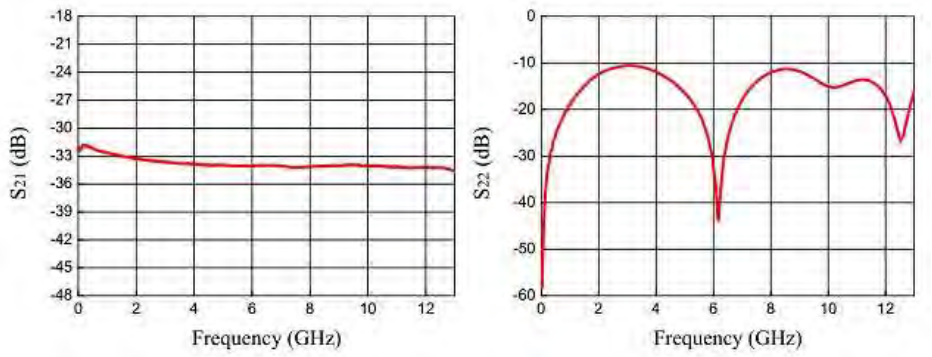


Fig.2 X-Band Photodetector Frequency Response Cruve

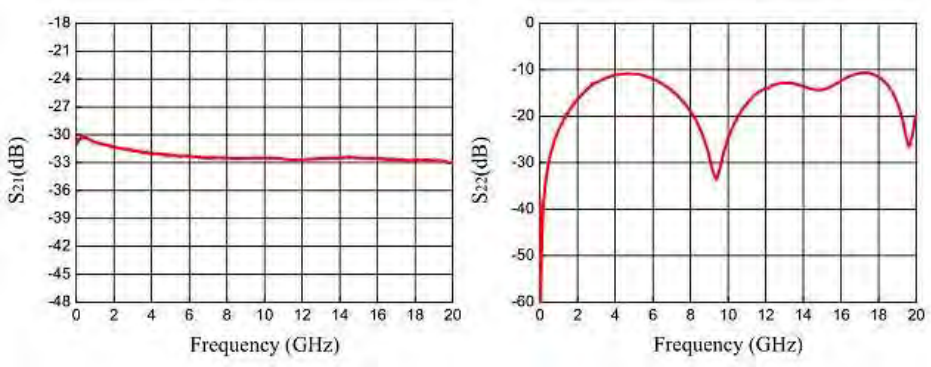


Fig.3 Ku-Band Photodetector Frequency Response Cruve

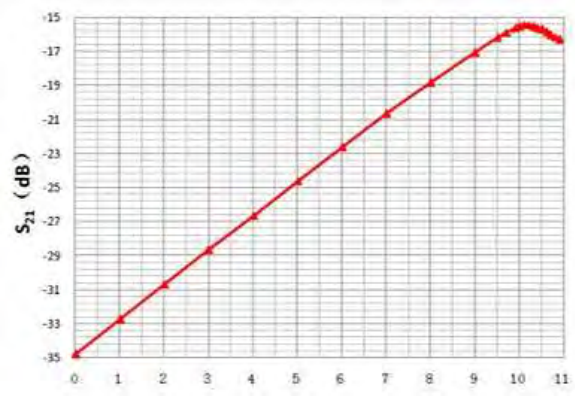
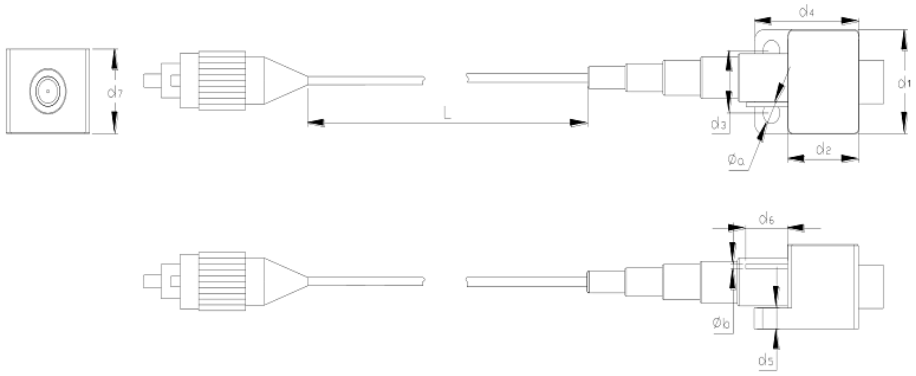


Fig.4 1dB Compression Point Saturation Input Optical Power Cruve

Package Size:

The packages and the pins (Unit: mm)



Size	Sym.									
-	d1	d2	d3	e	d4	d5	d6	φa	φb	L
Min	17.8	12.5	12.5	2.4	2.5	9.0	7.5	2.0	0.4	1000.0
Max	18.2	13.0	13.0	2.6	3.5	9.4	7.7	2.2	0.5	-

Ordering Info:

LDPD45220R	X	x
	Tabel2	Table3

Table 2 Analog Bandwidth

C	CBand	DC~8GHz
X	XBand	DC~12GHz
Ku	KuBand	DC~18GHz

Table 3 Fiber Connector

Code	Connector Type	Remark
0	No Connector	single-mode 9/125 μm fiber pigtail
1	FC/PC	
2	FC/APC	