

18GHZ Analog High Speed InGaAs PIN Photodiode

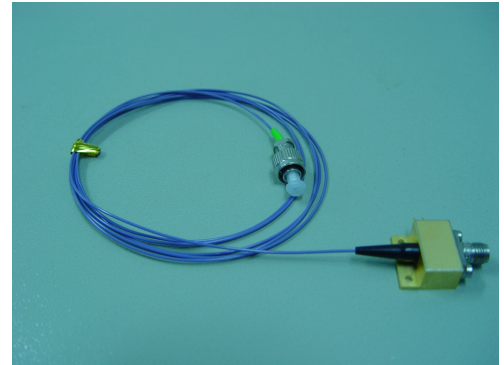
Modle: LSIHPD-A

Features

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

Applications

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



Description

The high speed detector module is designed for both digital and analog applications with 50ohm impedance matched RF connections. The module contains an InGaAs PIN photodiode and necessary matching electronics. The package is hermetically sealed with a SMA compatible RF connector. The module has a ripple free and linear response from low frequency to 18GHz.

Absolute Maximum Rating ($T_C = 22 \pm 3^\circ\text{C}$)

Parameter	Sym.	Rating	Unit
Storage temperature range	T_{STG}	-40 ~ +100	$^\circ\text{C}$
Operating case temperature range	T_C	-40 ~ +85	$^\circ\text{C}$
Bias Voltage	V_R	30	V
Optical Input Power	P_{in}	13	dBm
Lead soldering temperature	T_p	260 (10s)	$^\circ\text{C}$

Electrical/Optical Characteristics ($T_C = 22 \pm 3^\circ\text{C}$)

Parameter	Sym	Test Condition	Parameter values(Typ.)			Unit	
-3dB bandwidth	BW	$V_R = 5V, \lambda = 1550\text{nm}$ $P_{in} = 1\text{mW}, R_L = 50\Omega$	0.1~8	0.1~12	0.5~18	GHz	
wavelength range	λ	-	1000~1650			nm	
Responsivity	Re	$V_R = 5V,$ $P_{in} = 10\mu\text{W}$	$\lambda = 1310\text{nm}$	≥ 0.80	≥ 0.80	≥ 0.60	A/W
			$\lambda = 1550\text{nm}$	≥ 0.85	≥ 0.85	≥ 0.65	
Amplitude Flatness	F		± 1.5			dB	
Output VSWR	VSWR		$\leq 2.5:1$				

Output Impedance		R_L	50	Ω
Dark current	I_d	$V_R = 5V, P_{in} = 0mW$	≤ 10	nA
Saturation Optical Power	P_s	$V_R = 5V, \lambda = 1550nm$ AC Modulated	≥ 10	dBm
Optical insert loss	OIL	—	≤ 0.5	dB
Optical return loss	Lo	$\lambda = 1.55\mu m, \phi_e = 100\mu w$	≥ 40	dB

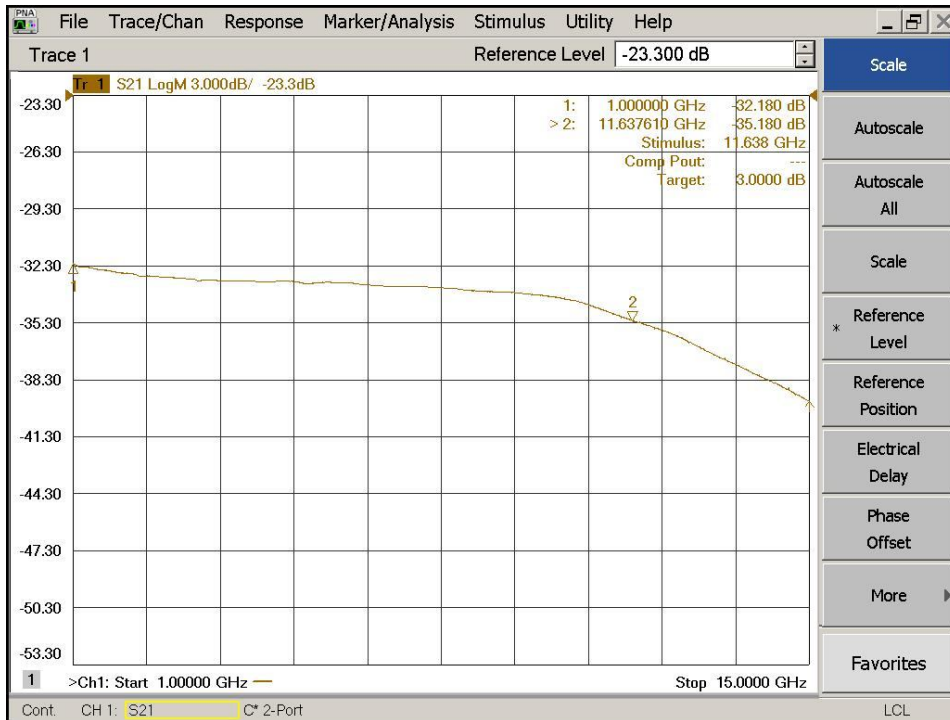


Fig.1 0.1~12GHZ Photodetector Frequency Response

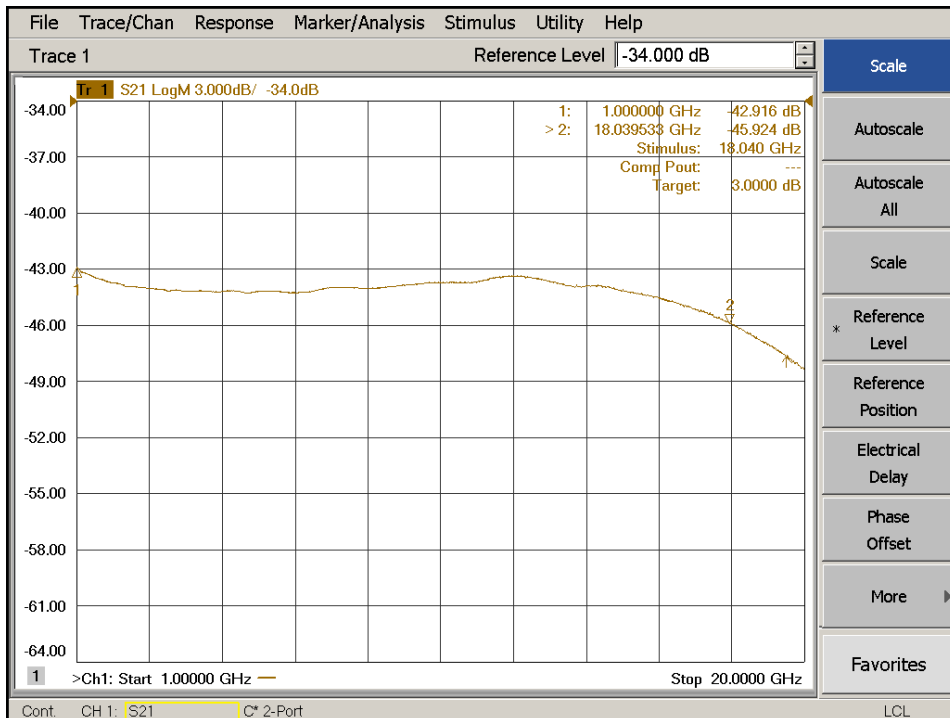
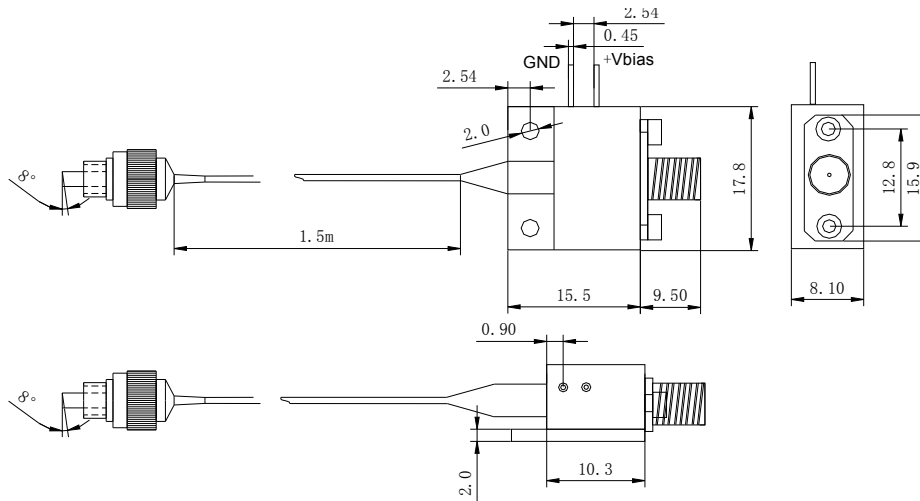


Fig.2 0.5~18GHZ Photodetector Frequency Response

The packages and the pins (Unit: mm)



Fiber type: SM 9/125um, length: 1.5m, connector: FC/APC

Order information:

1: LSHPD-A8: 0.1-8GHZ 2: LSHPD-A12: 0.1-12GHZ 3: LSHPD-A18: 0.5-18GHZ

Precautions

- 1: The fiber bending radius no less than 20mm for avoiding fiber damaged
- 2: Be sure the fiber coupling facet is clean before connecting it to opto-circuit
- 3: The suitable ESD protection is required in storage, transportation and using