

AMPD-S High Speed Amplified Microwave InGaAs Photodetector

✧ Features

- Wide Bandwidth
- Incorporated Bias-T
- O/E Hybrid Integrated
- High Gain, Low Noise, Broadband
- Hermetically Sealed, SMA connector



✧ Applications

- Radar Information Processing
- Electronic Warfare
- Antenna Measurement



✧ Introduce of AMPD-S

The AMPD-S is optoelectronic hybrid integrated by broadband InGaAs photodiode and low noise amplifier. The response wavelength of InGaAs PIN photodiode is 1000 to 1650nm. The RF gain of low noise amplifier is 15 dB.

AMPD-S can provide the bandwidth of 12GHz and 18GHz . The module operates on +5V supply voltages. It complies with a standard single-mode 9/125 μ m fiber input. The RF output port is an SMA compatible connector matched by 50 ohm impedance .

APMD-S is hermetically sealed, and weighs less than 23 grams.

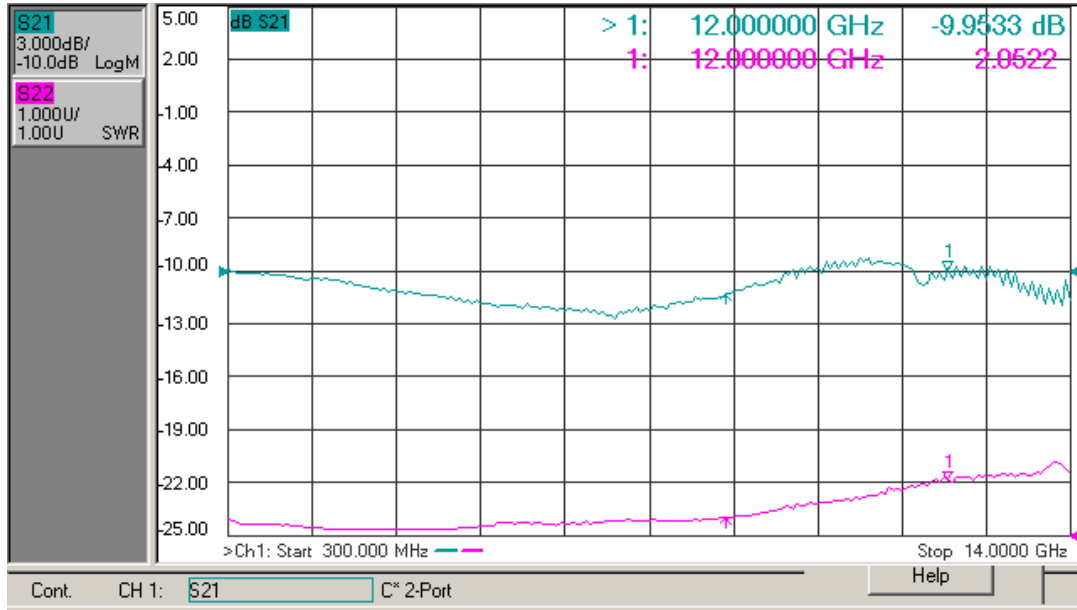
ROHS 2.0 certificated .

✧ Product Selection

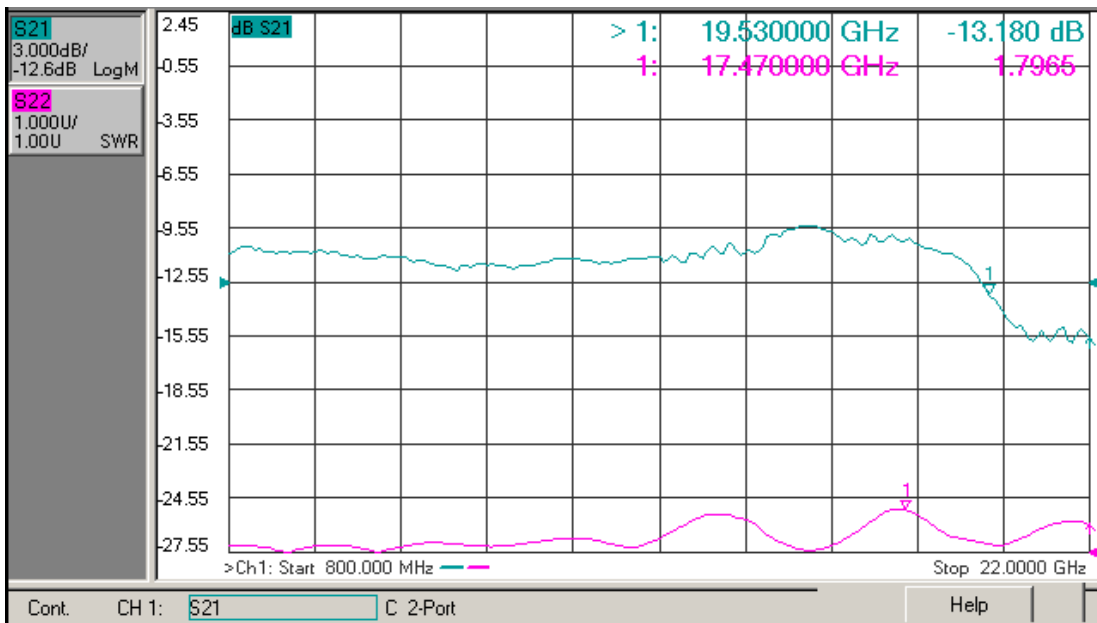
Typical & Absolute Maximum Rating				
Parameter	Sym.	Typ	Rating	Unit
Storage temperature range	T _{STG}	-45 ~ +85	-55 ~ +100	°C
Operating case temperature range	T _C	25	-40 ~ +85	°C
Bias Voltage	V _R	+5	+5 ~ +9	V
Optical Input Power	P _{in}	0	+10	dBm
Burn-out Optical Power	P _B	-	+13	dBm
Lead soldering temperature	T _p	280 (10s)	330 (10s)	°C

Electrical / Optical Characteristics (T _C = 22 ± 3 °C)						
Parameter	Sym	Test Condition		Parameter Values		Unit
Wavelength Range	λ	—		1000 ~ 1650		nm
Frequency Range	—	—		X - Band	Ku - Band	—
Small Signal Bandwidth	f _{3dB}	T _C = 22 ± 3°C		0.3 ~ 12	0.8 ~ 19.5	GHz
Responsivity	R _e	V _R = +5V, P _{in} = 10mW	λ = 1310 nm	≥ 0.8	≥ 0.85	A/W
			λ = 1550 nm	≥ 0.85	≥ 0.8	
Amplitude Flatness	A	T _C = -45 ~ +85 °C		≤ ± 2		dB
Saturation Optical Power	P _s	V _R = + 5 V, λ = 1550 nm AC Modulated		10		dBm
RF Signal Gain (Typical)	G	—		15 ± 1		dB
Saturation RF Output Power	P _{out}	—		+3		dBm
Output VSWR	VSWR	—		≤ 2		—
Output Impedance	R _L	—		50		Ω

✧ Typical Response Curves

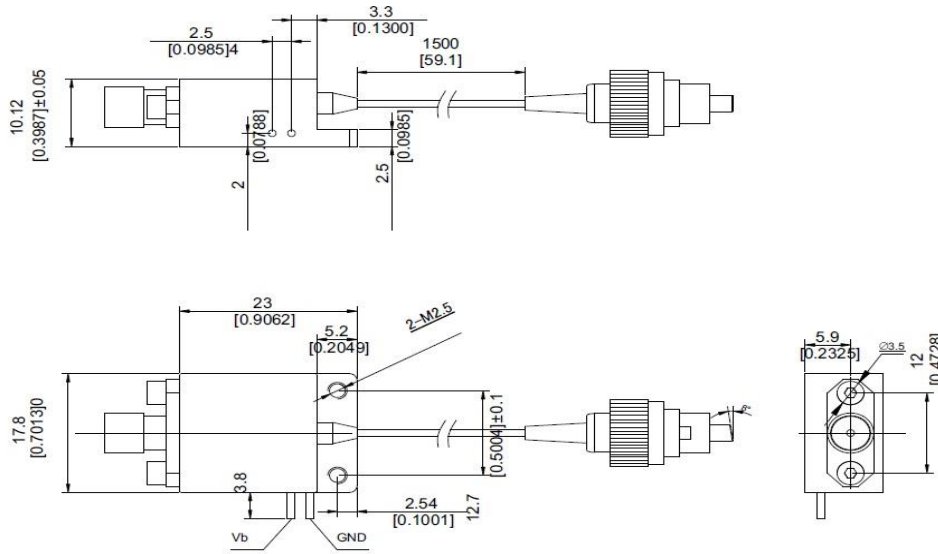


(Fig . 1 X - Band Photodetector Frequency Response)



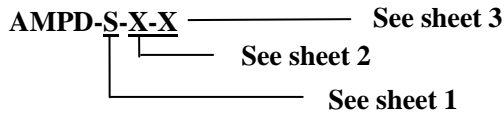
(Fig . 2 Ku - Band Photodetector Frequency Response)

✧ Dimension and Pins (Unit: inch)



RF Connector: SMA

✧ Ordering Information



Sheet 1:

Code	RF Signal Gain	Remark
S	15 dB	Typical & Center Frequency

Sheet 2:

Code	Analog Bandwidth
X	0.3 ~ 12 GHz
Ku	0.8 ~ 19.5 GHz

Sheet 3:

Code	Connector Type	Remark
N	No Connector	Single-mode 9 / 125 μm fiber pigtail
A	FC / APC	
P	FC / PC	

✧ Precautions

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