

Amplified Microwave Photonics Receiver

APRR530
Rev. V1

Features

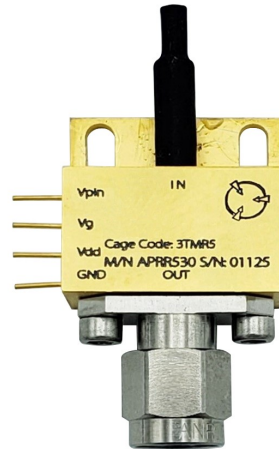
- 30 GHz microwave bandwidth
- Internal RF Amplifier
- AC coupled
- Compact lightweight design
- High responsivity
- 50Ω output impedance

Description

The APRR530 Amplified Photo Receiver consists of a broadband microwave InGaAs PIN photodiode internally matched to a low noise post amplifier, providing 14 dB gain from 0.5 to 30 GHz. The amplifier is matched directly to the diode output, improving system ripple response and noise figure.

The APRR530 enables link response to over 30 GHz via direct optical-to-analog RF conversion and amplification for signal remoting, radar communications, and information processing applications.

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.



Mechanical Characteristics

Parameter	Units
RF Connector	2.92 mm (K) female
Fiber Pigtail	G.652.D Single Mode, 900 um buffer, 1 m typ ³
Fiber Connector	FC/APC ⁴
Bias Connectors	0.018" diam. Au plated kovar pins
Max Weight (Grams)	25

Environmental Characteristics

Parameter	Units	Min.	Max.
Operating Temp. Range ²	°C	-40	85
Storage Temp. Range	°C	-40	95

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RF Characteristics

Parameter	Units	Min.	Typ.	Max.
RF -3 dB Bandwidth	GHz	0.5—30	0.25—32	-
Output Impedance	Ω	-	50	-
Output Return Loss	dB	8	-	-

Optical Characteristics

Parameter	Units	Min.	Typ.	Max.
Optical Wavelength	Nm	1300	-	1600
Output Response (1550 nm, RL= 50 Ω , T=25°C)	V/W	35	40	-
Optical Input Power ¹	mW	-	-	7
Optical Return Loss	dB	30	-	-

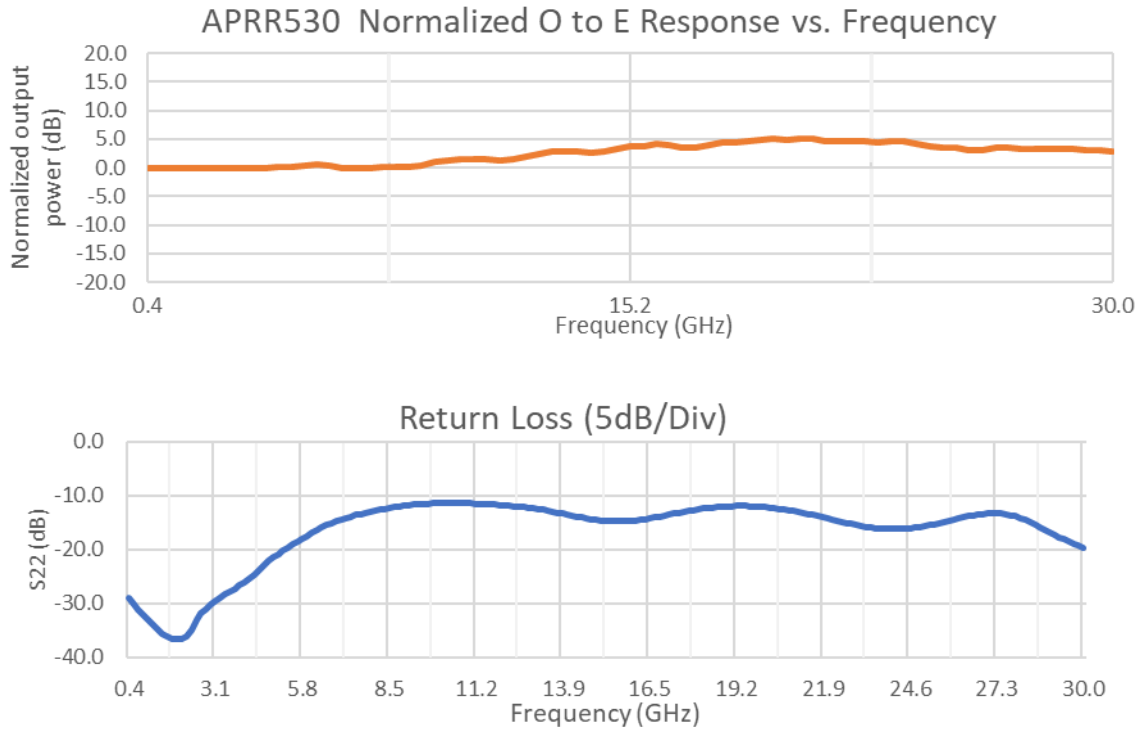
DC Characteristics

Parameter	Units	Min.	Typ.	Max.
PIN Diode Bias, Vpin	V	3	5	12
Amplifier Drain Bias, Vdd	V	4.75	5	5.25
Amplifier Gate Bias, Vg	V	-5.25	-5	-4.27
Drain Current, Idd	mA	130	160	200

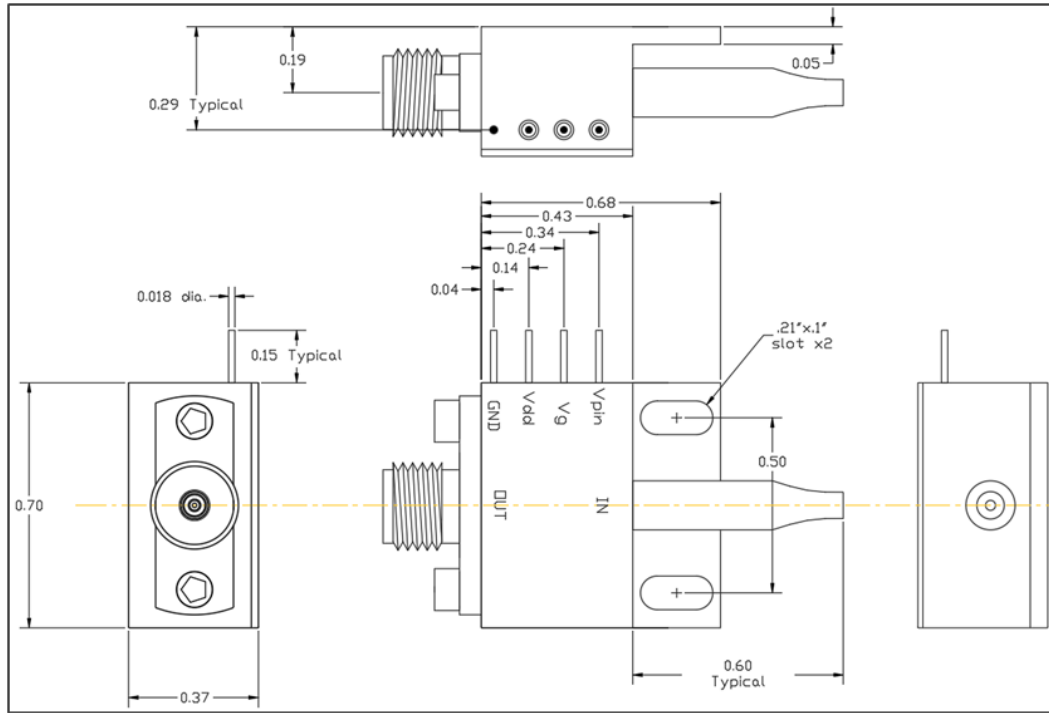
1. Exceeding Maximum Optical Input Power may damage the device
2. Military temperature range (consult factory)
3. Other fiber options available (consult factory)
4. Other connector options available (consult factory)

Typical Performance Curves

Typical E/O Response and Output Return Loss



Mechanical Outline (Inches)



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