

FP1015a

22 GHz High-Power Photodetector

Product Brief

FEATURES

- 22 GHz bandwidth
- Capable of delivering over 100 mW RF output power
- Compact, low-profile package
- Single-mode fiber input

APPLICATIONS

- RF Photonic Links
- Photonic RF Generation
- Sensing
- Communications

Notes

1. Device is unterminated for high power applications.
2. This design requires an external bias tee.
3. Measurements taken for specification were performed at 20°C and -5 V bias into a 50 Ω load, at a 1550nm wavelength.

OVERVIEW

The FP1015a high-power photodetector is designed for high-power, wide-bandwidth applications. This device has a compact, low-profile package with a single-mode SMF-28 fiber connection and a 1.85 mm “V” type female RF connector. This product has been developed for high optical power applications such as RF photonic links, sensing, and photonic generation of RF signals up to 20 dBm RF power and a 22 GHz bandwidth.

The specifications shown below describe the FP1015a model. Options are available to customize our high-power photodiode product to your specific application that may demand responsivity, RF power, or bandwidth performance to be optimized. An option for an integrated bias tee is in development, but currently an external bias tee is required.

SPECIFICATIONS

Parameter		Value	Unit
Wavelength Range (Optimum)	min	1280	nm
	max	1620	nm
Responsivity	min	0.4	A/W
Bandwidth	min	22	GHz
Output RF power (1-dB compression point)	min	20	dBm
Photocurrent (1-dB compression point)	min	90	mA
Dark Current	max	100	nA
Operating Temperature	min	-5	°C
	max	75	°C

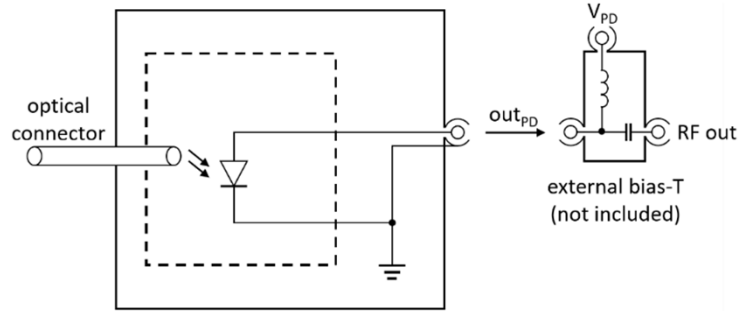


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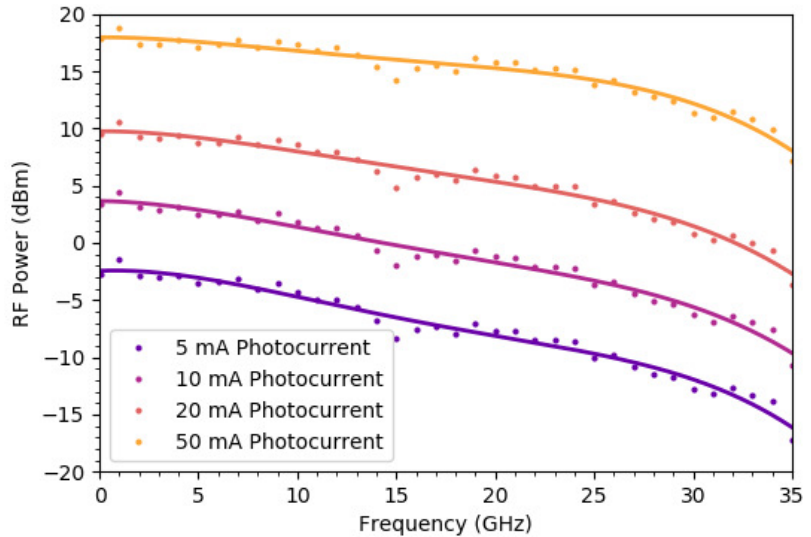
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BLOCK DIAGRAM

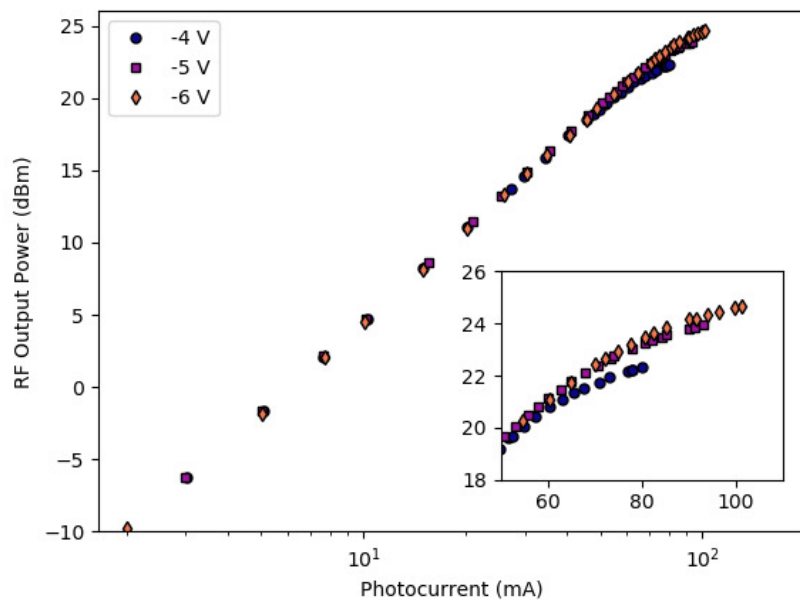


Block diagram of FP1015a. An external bias-T of ≥ 30 GHz (-3-dB) is required.

TYPICAL PERFORMANCE CURVES



RF Power vs. Frequency at several different photocurrents.



RF Output Power vs. Photocurrent. Data collected at 10 GHz and -4, -5, and -6 biases.