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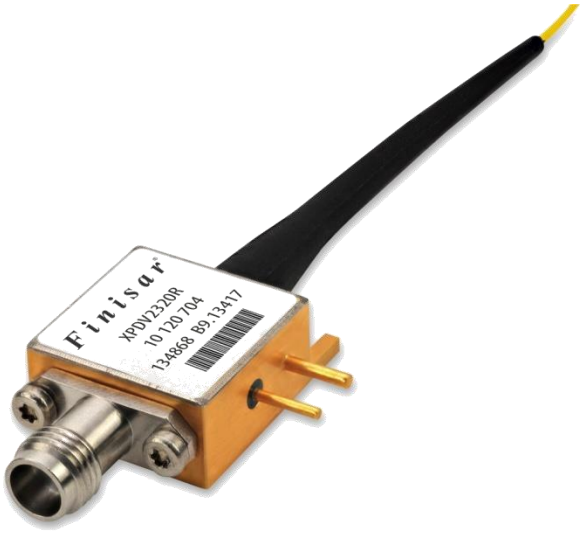
Product Specification

50 GHz dual-window Photodetector

XPDV2320R

PRODUCT FEATURES

- 50 GHz electrical 3 dB bandwidth
- Excellent flat response within 3 dB bandwidth
- Support of 1310 and 1550nm
- Well matched 50 Ω output
- Unique on-chip integrated bias network



APPLICATIONS

- Communication system at 40 Gb/s
- High-speed lightwave characterization
- Microwave photonics up to 60 GHz

The XPDV23x0R platform exhibits an optimized frequency response in both, power and phase. It is ideally suited for OC-768/STM-256 long haul systems. The on-chip integrated bias network with optimized design ensures an undisturbed frequency response to the 3dB cut-off frequency and saves costs for internal bias-tees. The module is especially designed for both optical windows at 1310nm and 1550nm. Further advantage of the waveguide structure is the unbeatable RF high-power behavior. The photodetector shows a linear response up to an optical input power of 10dBm, resulting in a high output voltage swing avoiding the need for electrical amplification

ORDERING INFORMATION

XPDV2320R-Vx-yy

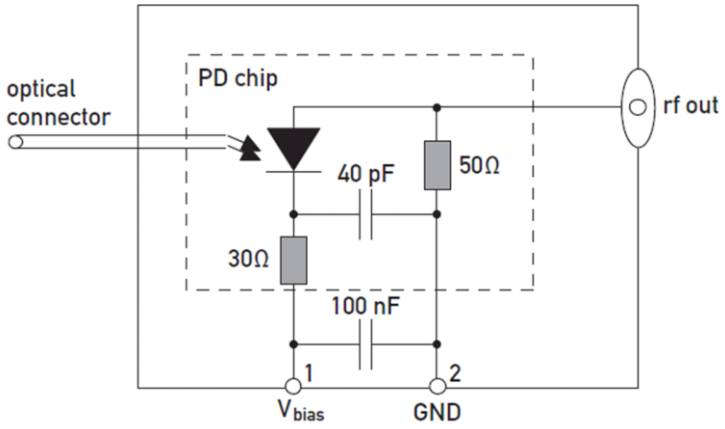
Vx:	F	= V connector® female (standard)
	M	= V connector® male
yy:	FP	= FC/PC (standard)
		other connectors available upon request

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I. Pin Description

# Pin	Symbol	Description
1	V_{bias}	PD bias supply, typical 2.8 V
2	GND	case ground

II. Block Diagram



III. Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photodiode Bias Voltage	V_{PD}		0		3.5	V
Average Optical Input Power	P_{opt}	CW or NRZ			13	dBm
Max. Output peak voltage	V_{peak}				1.5	V
Electro Static Discharge	V_{ESD}	C=100 pF, R= 1.5 kΩ HBM	-250		250	V
Fiber Bend Radius			16			mm



Notice

Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.

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IV. Environmental Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Relative Humidity	RH	non condensing	5		85	%
Storage Temperature	T_{sto}		-40		85	°C

V. Operating Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{Case}		0		75	°C
Operating Wavelength Range	λ		1300		1330	nm
			1530		1620	
Avg. Optical Input Power Range	P_{OPT}				10	dBm
Photodiode Bias Voltage	V_{PD}		2.0	2.8	3.3	V

VI. Electro-Optical Specifications

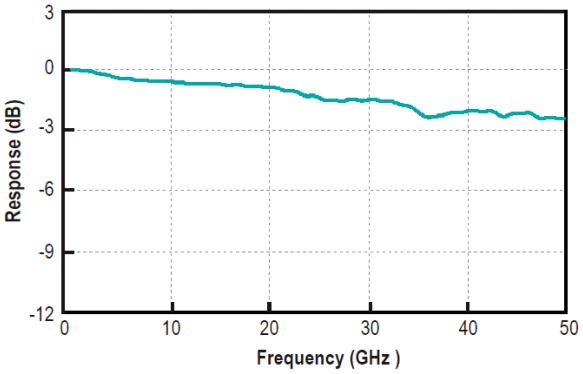
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photodiode DC Responsivity	R	1310nm		0.45		A/W
		1550nm		0.65		
Polarization Dependent Loss	PDL	1310nm		0.4	0.7	dB
		1550nm		0.3	0.5	
Optical Return Loss[1]	ORL	1310nm	24			dB
		1550nm	27			
3dB Cut-off Frequency[2]	f_{3dB}		45	50		GHz
Output Reflection Coefficient	S_{22}	0.05 … 50GHz		-10	-8	dB
Photodiode Dark Current	I_{dark}			5	200	nA
Pulse Width				9	10	ps

Notes:
1. λ = 1550 nm or 1310nm, T_{case} = 25 °C
2. measured using Agilent 86030A 50 GHz Lightwave component analyzer

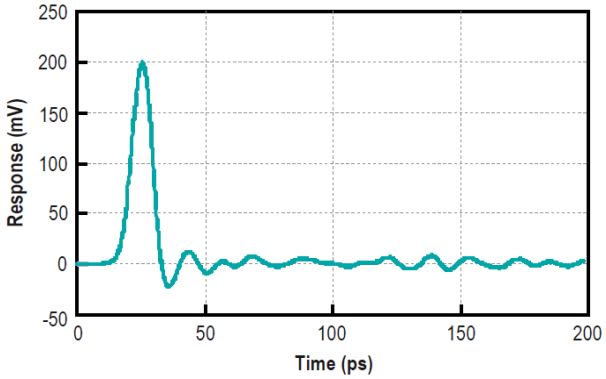
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VII. Typical Performance Curves

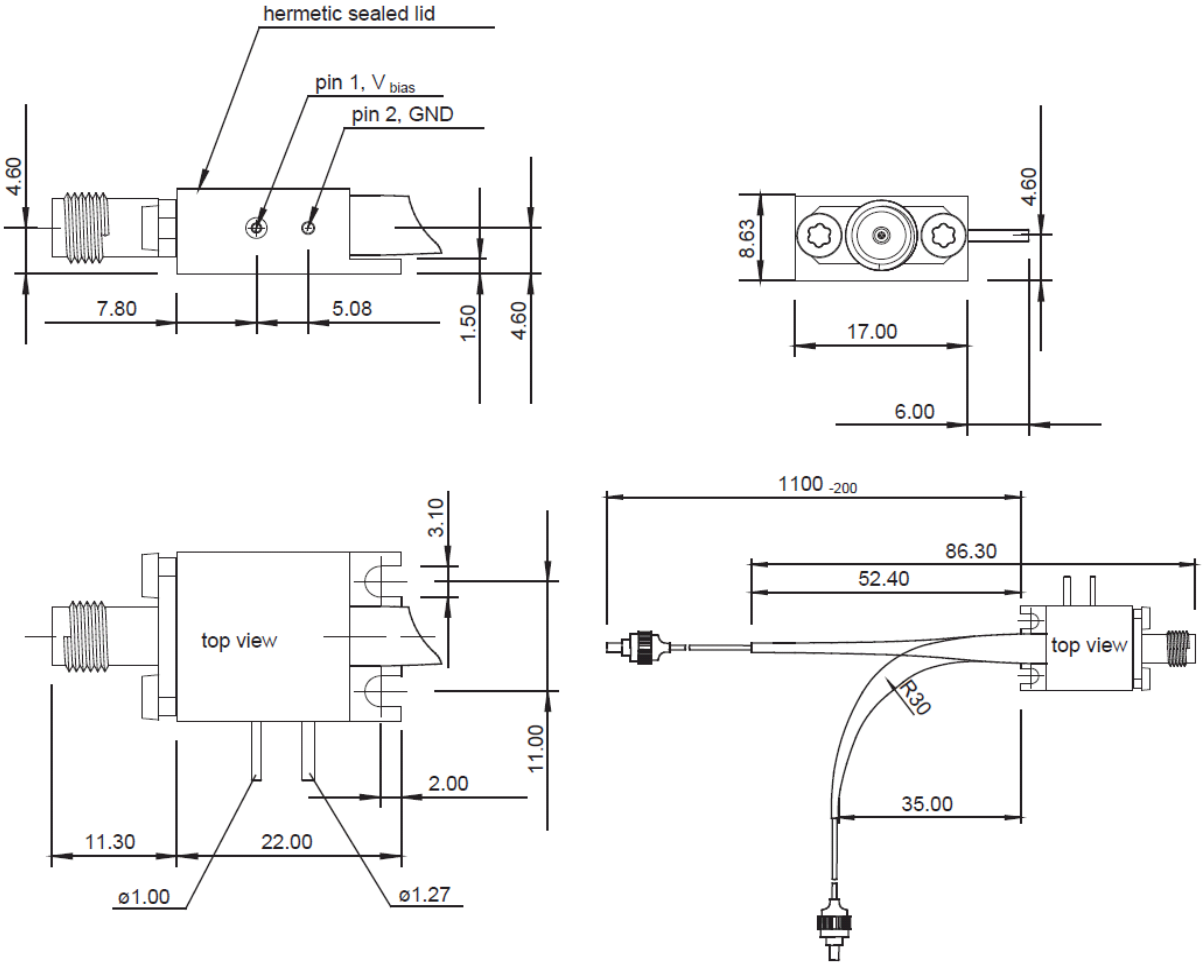
Frequency Response



Pulse Response



VIII. Mechanical Specifications



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IX. Accessories

We recommend usage of our individually accessible photodetector power supply (PPS), in particular for optimized performance at high optical input levels. As portable device it provides stable biasing voltage supply and a front display for review on photocurrent.

ORDERING INFORMATION

PPS-03-X

X: Power supply for XPDV21xxR series
Consists of 1x PPS and 1x cable X-type, all PPS versions include two 1.5 V batteries and a BNC-to-female connector plug cable





X. Revision History

Revision	Date	Description
A1	07/24/2014	• Document created
A2	12/15/2014	• Block diagram revised

Notes

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- Finisar Corporation reserves the right to make changes without notice.

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