Finisar®

70 GHz BALANCED PHOTODETECTOR

BPDV3120R

PRODUCT BRIEF

KEY FEATURES

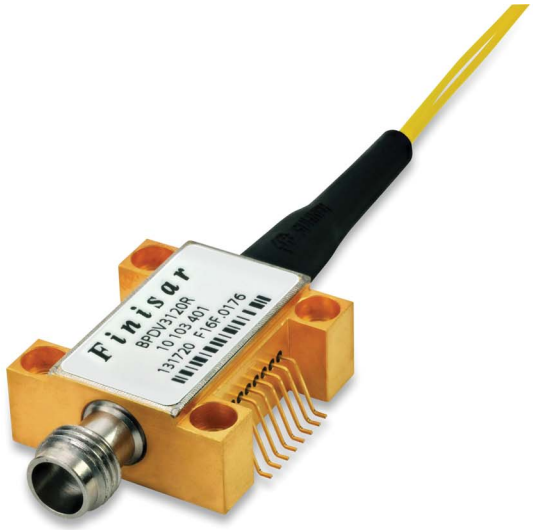
- 70 GHz bandwidth guaranteed
- Excellent uniformity of photodiodes
- Detection of 64 Gbaud x-QAM signals
- Integrated 50 Ω termination
- Unique on-chip integrated bias network

APPLICATIONS

- Next Generation Networks
- Transmission systems of 400 Gb/s through 1 Tb/s
- Coherent T&M systems
- Research and Development systems

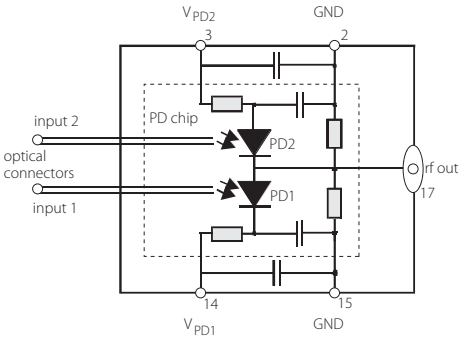
OVERVIEW

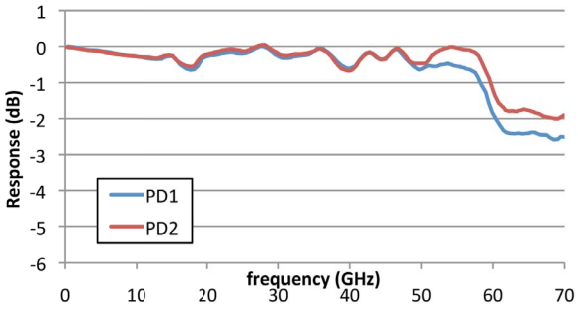
The balanced photodetector consists of two 75 GHz, waveguide-integrated photodiodes on one single chip. As a single-balanced photodetector the configuration ensures an excellent uniformity of the paired photodiodes and their integrated biasing network. Due to an optimized alignment of both waveguide and photodiodes design, a linear frequency response is guaranteed even at high optical powers. An integrated 50 Ω termination allows excellent matching with the electrical output signal. Tailored configurations are available, e.g. BPDV dual pair and quad sets, including fiber matching and optical connector customization.

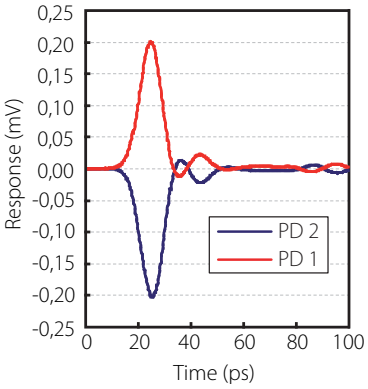


70 GHz BALANCED PHOTODETECTOR

BLOCK DIAGRAM AND TYPICAL PERFORMANCE







OPERATING CONDITIONS

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Case Temperature	T_{case}		0	+ 25	+75	°C
Relative Humidity	RH	non condensing	5		85	%
Average Optical Input Power Local Oscillator	P_{opt}	for each diode			10	dBm
Wavelength Range	λ		1480		1620	nm
Photodiode Reverse Voltage	V_{PD1} V_{PD2}		2.5 -3.8	3.3 -3.3	3.8 -2.5	V V

OPTICAL AND ELECTRICAL SPECIFICATIONS [1)]

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Photodiode DC Responsivity @ 1550 nm	R	optimum polarization	0.45			A/W
Imbalance of Responsivity	Imb	Imb = |10*log10(R_{PD1}/R_{PD2})|		0.15	0.5	dB
Polarization Dependent Loss	PDL			0.4		dB
Optical Return Loss	ORL	λ = 1550 nm	27			dB
Pulse Width				11	12	ps
3 dB cut-off Frequency	f_{3db}		65	70		GHz
Output Reflection Coefficient	S_{22}	0.05 - 50 GHz		-5	-3	dB
Photodiode Dark Current	I_{dark}	T_{case} = 25°C		5	200	nA
Skew					2	ps
Skew (Inter Detector Module)		dual pair; quad set			10	ps
RF Common Mode Rejection Ratio	CMRR	CMRR = 20*log10|(S21-S31)/(S21+S31)|		15		dB

Notes: 1) λ = 1550 nm, V_{PD} = ± 2.8 V, T = 25°C, P_{opt} = +3 dBm

Finisar®
1389 Moffett Park Drive
Sunnyvale, CA 94089
Phone: +1 408-548-1000
Sales: +1 408-541-5690
Email: sales@finisar.com
www.finisar.com

Visit our website