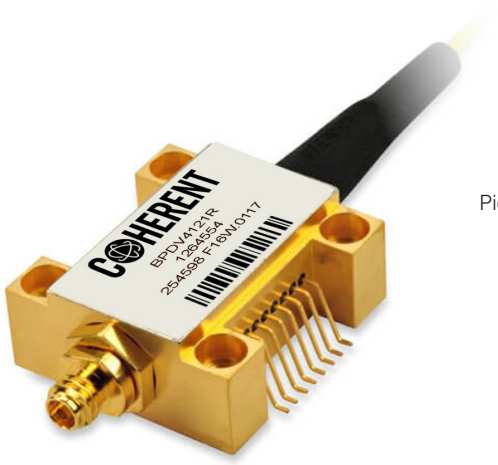
100 GHz BALANCED PHOTODETECTOR

BPDV412xRv

The BPDV412xRv balanced photodetector is a compact, non-hermetic module consisting of two optimized 100 GHz waveguide-integrated photodiodes on a single chip. As a single device, this configuration ensures excellent uniformity of the paired photodiode performance; biasing is achieved via an integrated biasing network. Due to the optimized design of waveguide and photodiode, even at high optical power, a linear frequency response can be guaranteed. The integrated termination allows an excellent match of the electrical output signal. Custom configurations are available, such as BPDV matched pairs and quad sets, including connector customization and fiber-matching to enable coherent detection. A 90 GHz version of this module is also available.



Picture shows product example, actual product might differ

FEATURES

- High 3 dB bandwidth of 100 GHz
- Optical window at 1550 nm
- Excellent linearity
- High responsivity of 0.25 A/W
- Low PDL of 0.75 dB

APPLICATIONS

- Optical Communication systems
- Advanced component R&D

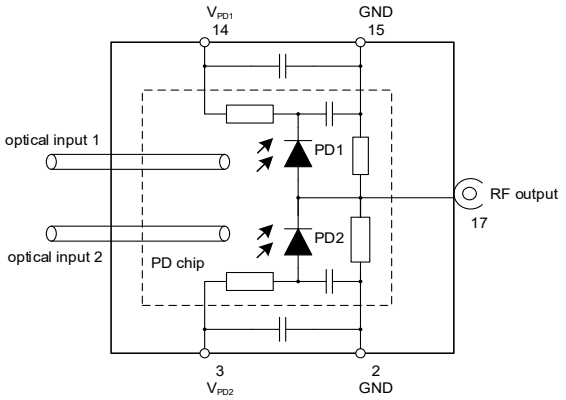
COHERENT

Product Selection

BPDV412xRv-WF-zz

x	1	= 100 GHz bandwidth version
	0	= 90 GHz bandwidth version
v	M	= Matched pair 4 ps skew
	Q	= Quadset skew 4 ps
zz	SA	= SC/APC (standard)
		= other connectors on request

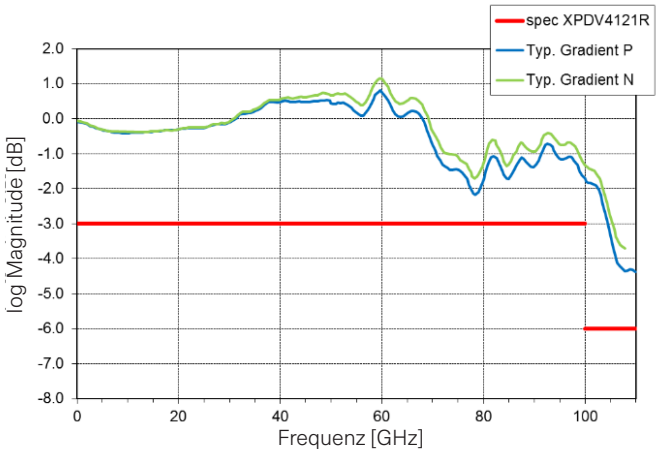
Block Diagram



Key Specifications

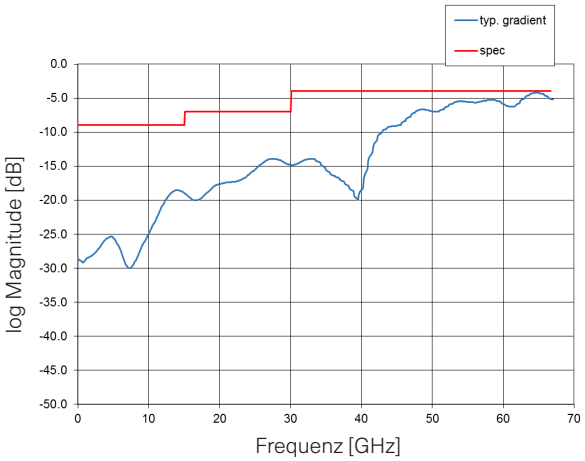
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{CASE}		0		75	°C
Storage Temperature	T_{STORE}		-40		85	°C
Wavelength Range	λ	C-band		1550		nm
Photodiode Supply Voltage	V_{PD}			3.3 -3.3		V
Average Optical Input Power	P_{OPT_avg}				16	dBm
Photodiode DC Responsivity	R	C-band		0.25		A/W
Polarization-Dependent Loss	PDL	C-band		0.75		dB
Imbalance of Responsivity	Imb	Imb= $\|10*\log10(R_{PD1}/R_{PD2})\|$		0.15		dB
Photodiode Dark Current	I_{DARK}	T_{CASE} = 25 °C		5		nA
3 dB Cut-off Frequency	f_{3dB}	BPDV4121R PDV4120R		105 95		GHz
Output Reflection Coefficient	s_{22}				-3.5	dB
Skew					1	ps

O/E Bandwidth Log Magnitude Plot



Typical frequency response s_{21}

S22 Log Magnitude Plot



Typical backreflection s_{22}

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