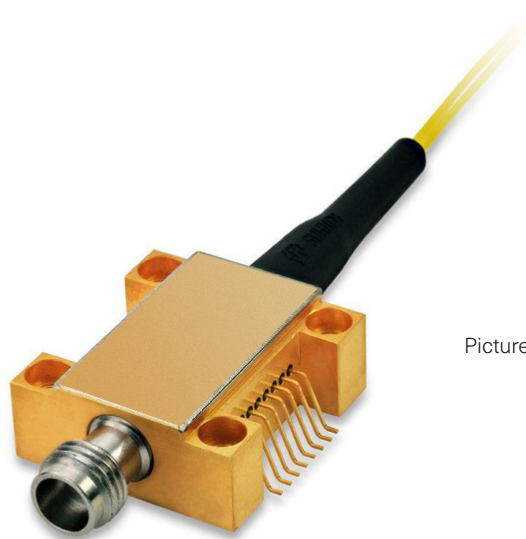


# 70 GHz BALANCED PHOTODETECTOR

## BPDV3x20Rv

The BPDV3x20Rv consists of two optimized 70 GHz waveguide-integrated photodiodes on a single chip that show an extremely flat frequency response, both in power and in phase. Coherent's on-chip integrated bias network with an optimized RF design ensures an undisturbed frequency response from DC to the 3 dB cut-off frequency and saves costs for an external bias tee. The hermetic module is especially designed for use in the optical window at 1550 nm and optimal RF performance. The pulse response reveals virtually no ringing. A dual window version supports use in O- and C-band. Tailored configurations are available, such as BPDV dual pair and quad sets, including connector customization and fiber-matching to enable coherent detection.



Picture shows product example, actual product might differ

## FEATURES

- High 3 dB bandwidth of 70 GHz
- Optical window at 1550 nm or dual band
- Excellent linearity
- High responsivity of 0.6 A/W (typ.)
- Low PDL of 0.4 dB (typ.)

## APPLICATIONS

- Optical Communication systems
- Advanced component R&D

## Product Selection

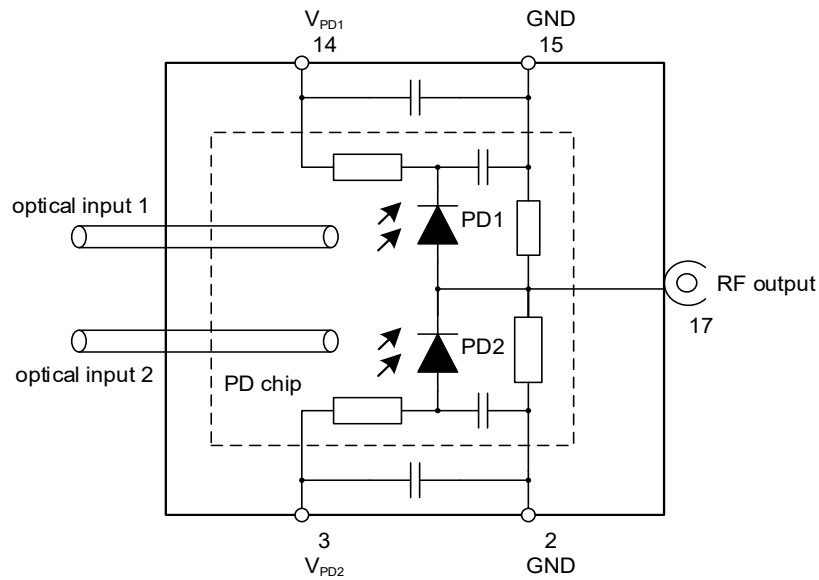
### BPDV3x20Rv-Vy-zz

x	1	= C-band version
	3	= Dual window version (C- and O-band)
v	M	= Matched pair 10 ps skew
	Q	= Quadset skew 10 ps
y	VF	= Female V <sup>®</sup> connector
	VM	= Male V <sup>®</sup> connector
zz	FP	= FC/PC connector (standard)
	FA	= FC/APC connector

## Notes

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## Block Diagram

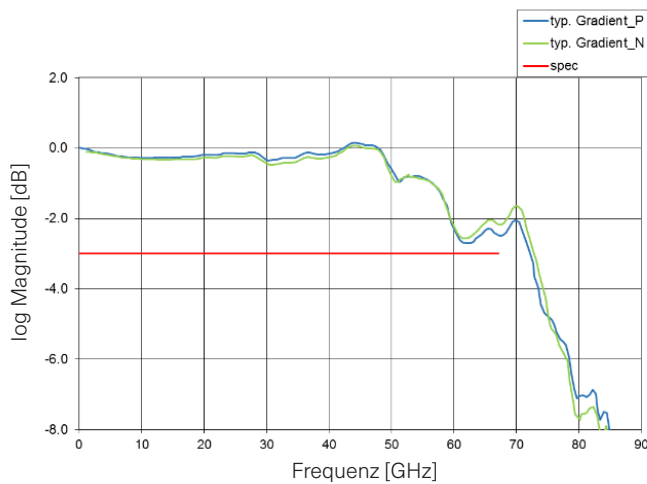


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## Key Specifications

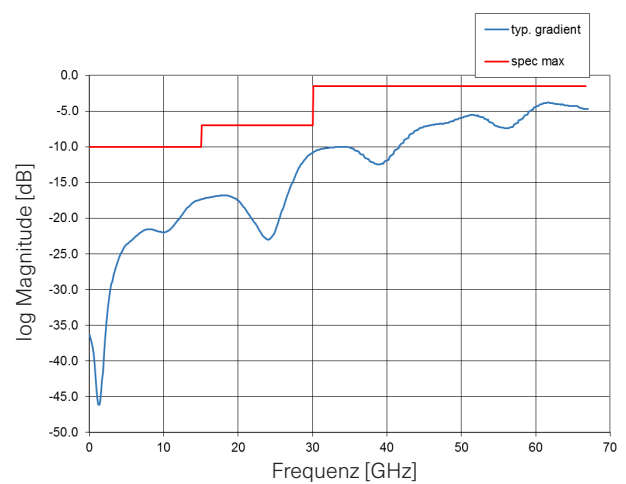
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	$T_{CASE}$		0		75	°C
Storage Temperature	$T_{STORE}$		-40		85	°C
Wavelength Range	$\lambda$	O-band C-band	1300 1525	1310 1550	1330 1575	nm
Photodiode Supply Voltage	$V_{PD}$		0 -4.0	3.3	4.0 0	V
Average Optical Input Power	$P_{OPT\_avg}$				13	dBm
Photodiode DC Responsivity	R	C-band		0.6		A/W
Polarization-Dependent Loss	PDL	C-band		0.4		
Imbalance of Responsivity	Imb	$Imb =  10 \cdot \log_{10}(R_{PD1}/R_{PD2}) $		0.15	0.5	dB
Photodiode Dark Current	$I_{DARK}$	$T_{CASE} = 25\text{ °C}$		$\pm 5$	$\pm 200$	nA
3 dB Cut-off Frequency	$f_{3dB}$	C-band	59	69		GHz
Output Reflection Coefficient	$s_{22}$				-1.5	dB
Skew					2	ps

O/E Bandwidth Log Magnitude Plot



Typical frequency response  $s_{21}$

S22 Log Magnitude Plot



Typical backreflection  $s_{22}$