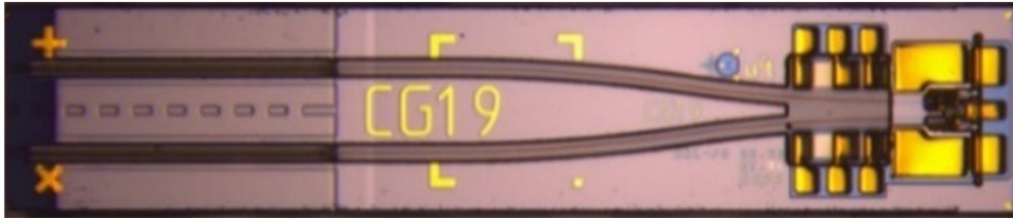


70 GHz BALANCED PHOTODETECTOR

CBPDV3x20R

The CBPDV3x20R consists of two optimized waveguide integrated photodiodes on a single chip and is optimized to operate at the O- and C- bands. The chip provides a low PDL and integrated on chip biasing. The $50\ \Omega$ termination provides an excellent matching of the electrical output signal. Due to the optimized combination of the waveguide and the active photodiode design, the CBPDV3x20R achieves excellent linearity, high responsivity, and superior flatness of RF response and therefore ensures superb performance, even at high optical powers.



Picture shows product example, actual product might differ

FEATURES

- High 3 dB bandwidth of 70 GHz
- Optical window at 1310/1550 nm
- Excellent linearity
- High responsivity of $>0.5\ \text{A/W}$ (typ.)
- Low PDL of $<0.4\ \text{dB}$ (typ.)

APPLICATIONS

- Optical Communication components
- Advanced component R&D
- Microwave Photonics

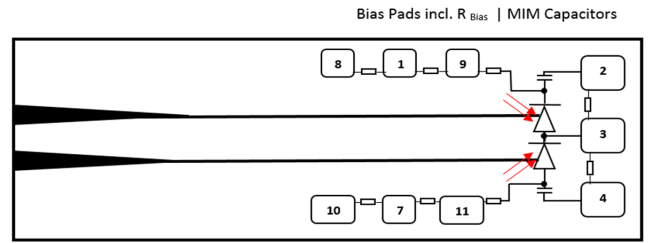
70 GHz BALANCED PHOTODETECTOR

Product Selection

CBPDV3x20R

x	1	= C-band version
	3	= Dual window version (C- and O-band)

Block Diagram

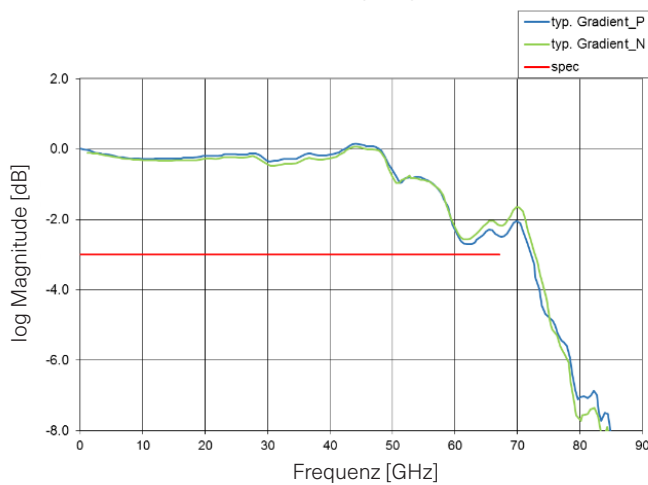


Spot-size converter | optical waveguide | Pin PD | RF out - CPW
incl. 2x 100Ω
(eff. 50 Ω)

Key Specifications

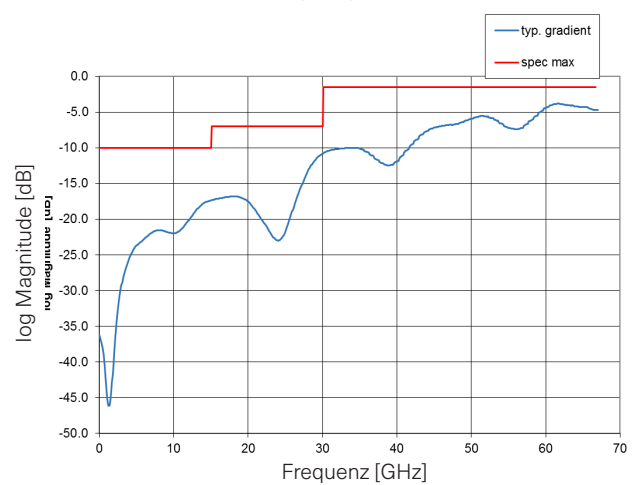
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{CASE}		0		75	°C
Storage Temperature	T_{STORE}		-40		125	°C
Wavelength Range	λ	O-band C-band		1310 1550		nm
Photodiode Supply Voltage	V_{PD1} V_{PD2}			2.8 -2.8		V
Average Optical Input Power	P_{OPT_avg}				13	dBm
Photodiode DC Responsivity	R	C-band		0.6		A/W
Polarization-Dependent Loss	PDL	C-band		0.4		dB
Imbalance of Responsivity	Imb	$Imb = 10 \cdot \log_{10}(R_{PD1}/R_{PD2}) $		0.15	0.5	dB
Photodiode Dark Current	I_{DARK}	$T_{CASE} = 25\text{ °C}$		5		nA
3 dB Cut-off Frequency	f_{3dB}	C-band		69		GHz
Output Reflection Coefficient	S_{22}				-1.5	dB

O/E Bandwidth Log Magnitude Plot



Typical frequency response s_{21}

S22 Log Magnitude Plot



Typical backreflection s_{22}