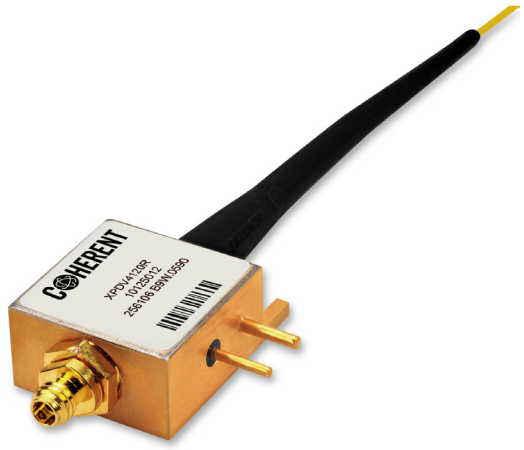
Optical Communications

100 GHz HIGH SPEED PHOTODETECTOR

XPDV412xR

The XPDV412xR comprises an optimized 100 GHz waveguide-integrated photodiode, which shows an extremely flat frequency response in both power and phase. The 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 internal bias tees. The non-hermetic module is especially designed for optimal RF performance; therefore, the pulse response reveals virtually no ringing. A further advantage of the waveguide structure is the unbeatable high-power behavior. The photodetector shows a linear response up to an optical input power of 10 dBm. The product is also offered in a cost-efficient 90 GHz version.



Picture shows product example, actual product might differ

FEATURES

- 100 GHz typical bandwidth
- High linearity
- C- band version
- Unique on-chip integrated bias network

APPLICATIONS

- High speed Lightwave characterization
- Test & Measurement applications
- Microwave Photonics

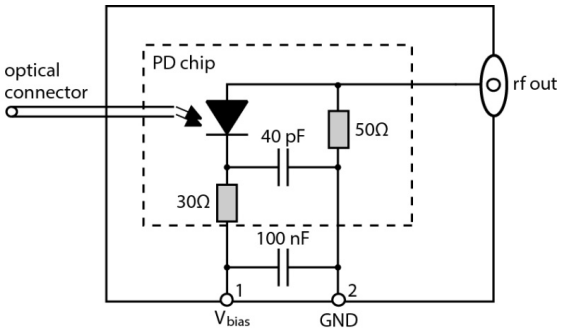
COHERENT

Product Selection

XPDV412xR -WF-zz

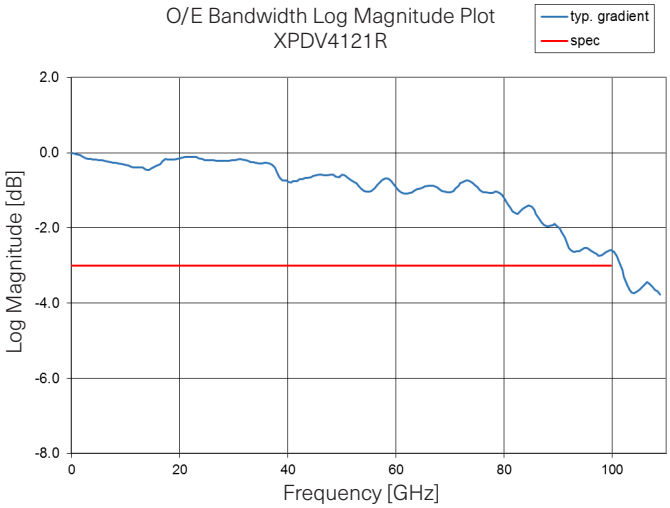
x	0	= 90 GHz version
	1	= 100 GHz version
zz	FA	= FC/APC connector (standard)
	FP	= FC/PC connector

Block Diagram

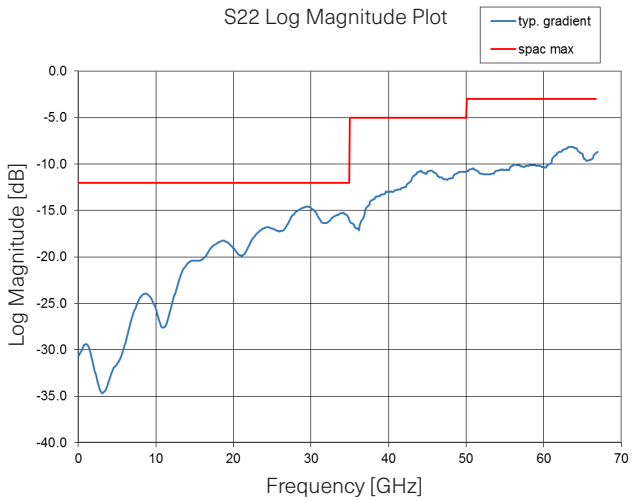


Key Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{CASE}		5		65	°C
Storage Temperature	T_{STORE}		-40		85	°C
Wavelength Range	λ			1550		nm
Photodiode Supply Voltage	V_{PD}			2.0		V
Average Optical Input Power	P_{OPT_avg}				10	dBm
Photodiode DC Responsivity	R			0.6		A/W
Polarization-Dependent Loss	PDL			0.3		dB
Photodiode Dark Current	I_{DARK}	T_{CASE} = 25 °C		5		nA
3 dB Cut-off Frequency	f_{3dB}	XPDV4121R XPDV4120R		100 93		GHz
Output Reflection Coefficient	s_{22}				-3	dB



Typical Frequency response s21



Typical backreflection s22

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