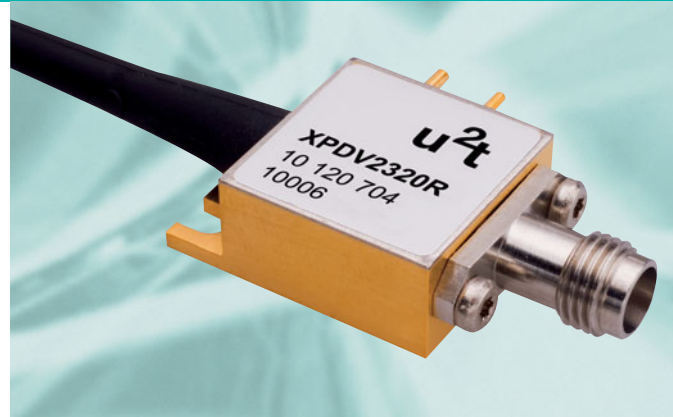


Dual window 50 GHz Photodetector

Product Code: XPDV2320R



Product Description

The Photodetector XPDV2320R platform is designed to exhibit an optimized frequency response in both, power and phase. It is ideally suited for OC-768/STM-256 long haul systems. The high power capability of up to 13dBm allows for use of optical amplification at the detector input resulting in a high output voltage swing of up to 1V avoiding the need for electrical amplification.

A waveguide integrated pin diode provides an excellent linearity, high responsivity and a superior flatness of the rf response. An integrated biasing and a hermetic package guarantees a very robust and highly reliable component.

Features

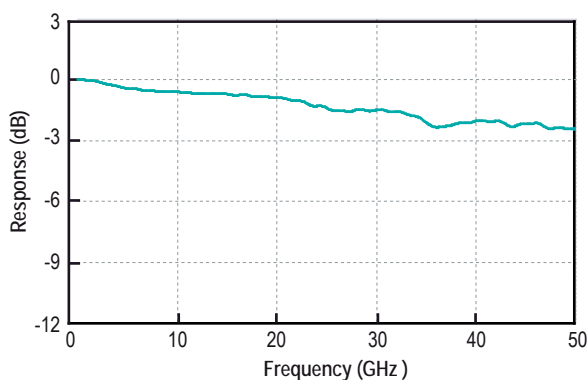
- Highest bandwidth with flat response
- Excellent pulse behavior
- Unsurpassed high-power handling capability
- High responsivity
- Support of 1300 and 1550 nm
- Unique on-chip integrated bias network
- Well matched to 50 Ω
- Hermetically sealed package

Applications

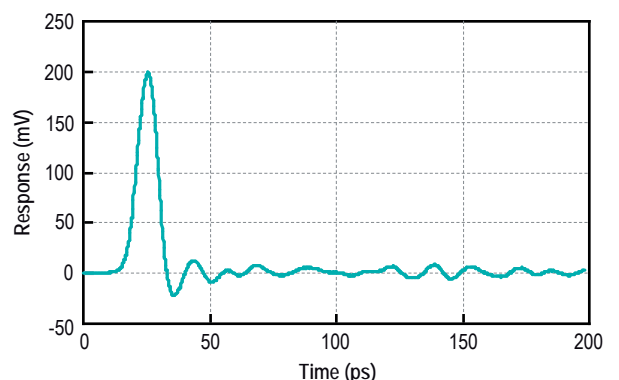
- Communication systems at 40 Gbit/s (OC-768) and beyond
- Microwave photonics up to 60 GHz
- High speed lightwave characterization

Typical Performance

Frequency Response



Pulse Response



Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Storage temperature	T_{stg}	non condensing	-40		+85	°C
Photo diode reverse voltage	V_{PD}		0		3.5	V
Maximum average optical input power	P_{opt}	NRZ			16	dBm
Maximum output peak voltage	V_{Peak}				1.5	V
Electro static discharge	V_{ESD}	C= 100 pF, R= 1.5 kΩ HBM	-250		250	V
Fiber bend radius			16			mm

Operation Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating case temperature range	T_{case}		0		+75	°C
Relative humidity range	RH	non condensing	5		85	%
Operating wavelength range	λ		1300 1530		1330 1620	nm
Average optical input power range	P_{opt}		-20		13	dBm
Photodiode reverse voltage	V_{PD}		2.0	2.8	3.3	V

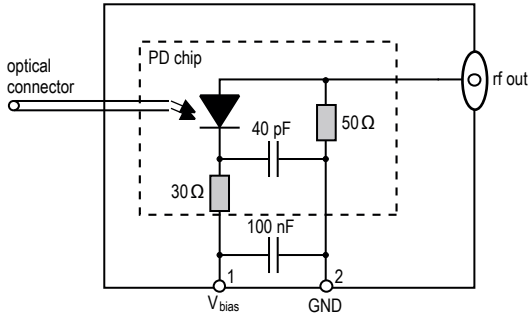
Optical and Electrical Specifications 1)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photodiode DC responsivity @ 1550 nm	R	optimum polarization	0.55	0.65		A/W
Photodiode DC responsivity @ 1310 nm				0.45		
Polarization dependent loss @ 1550 nm	PDL			0.3	0.5	dB
Polarization dependent loss @ 1310 nm				0.4	0.7	
Optical return loss @ 1550 nm	ORL	1)	27			dB
Optical return loss @ 1310 nm			24			
3dB cut-off frequency	f_{3dB}	2)	45	50		GHz
Output reflection coefficient	S_{22}	0.05 - 50 GHz		-10	-8	dB
Photodiode dark current	I_{dark}	$T_{case} = 25^{\circ}C$		5	200	nA
Pulse width		3)		9	10	ps

Notes: 1) $\lambda = 1550$ nm, $V_{bias} = 2.8$ V, $T = 25^{\circ}C$
3) Measured using Tektronix oscilloscope with 50 GHz sampling head

2) Measured using Agilent 86030A 50 GHz Lightwave component analyzer

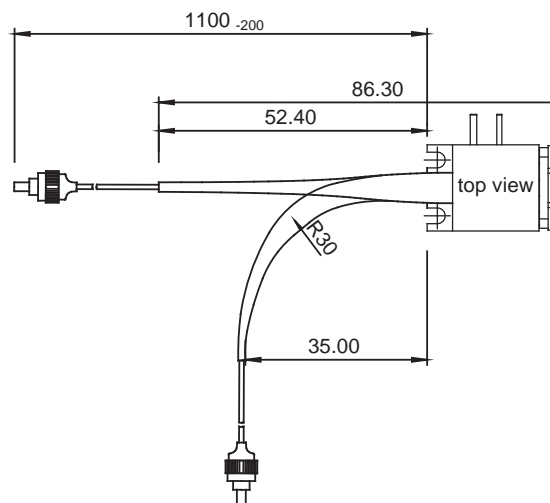
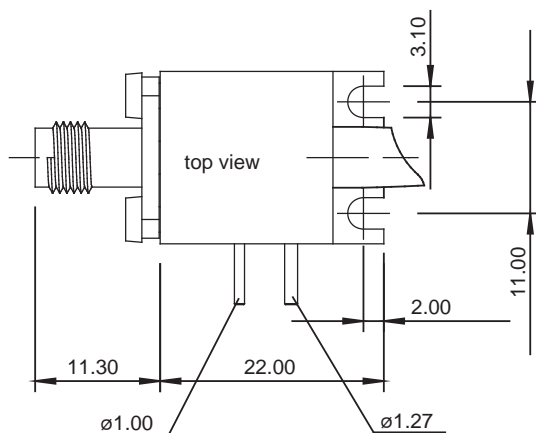
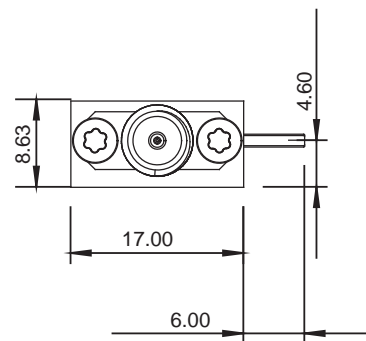
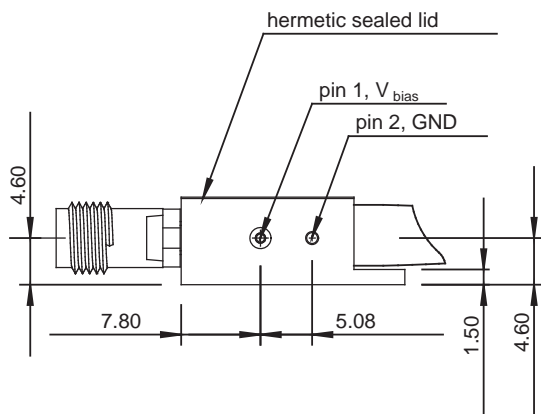
Block Diagram



Pin Description

Pin#	Symbol	Description
1	V_{bias}	bias supply, typ. 2.8 V
2	GND	Case ground

Mechanical Dimensions



All dimensions in mm.

Accessories

BPB-02

All photodetectors are delivered with an easy-to-use battery powered bias-supply - BPB-02. It comes free of charge with each XPDV photodetector. The maximum quantity per order is 5 pcs.

PPS-03

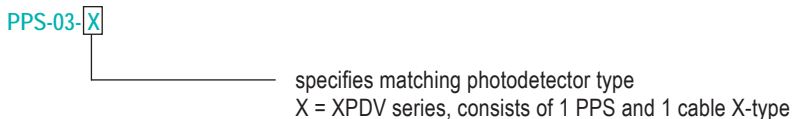
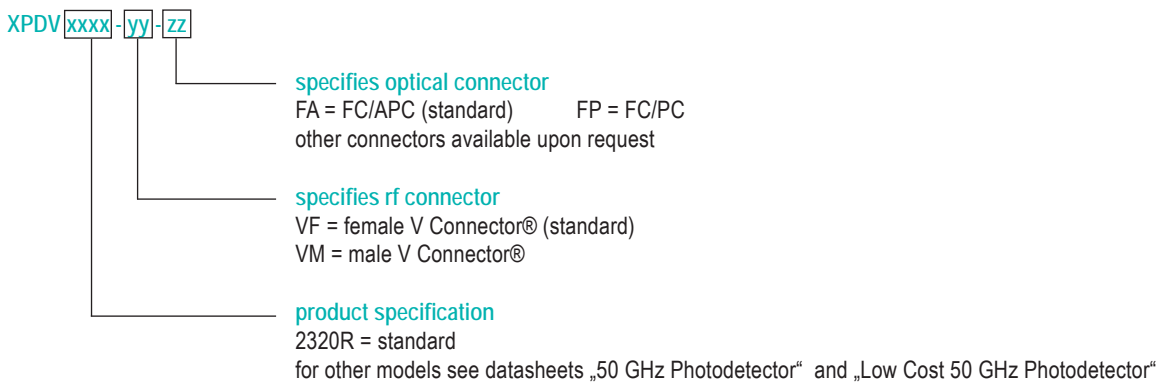
For optimum performance, in particular at high optical input levels, we recommend the use of our separately available photodetector power supply - PPS-03.

Further information can be found in the separate datasheet „Photodetector Power Supply“.



Ordering Information

Please use the following table to select your required configuration of the photoreceiver.



All Photodetector Power Supply versions include two 1.5 V batteries and a BNC-to-female connector plug cable.

V Connector® is a registered trademark of Anritsu Company.

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