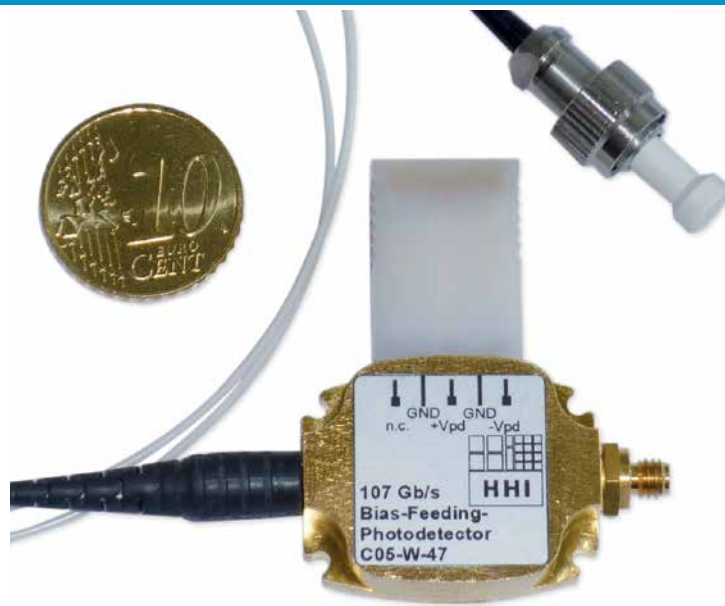


# NOVEL 107 Gbit/s BIAS-FEEDING PHOTODETECTOR

## AT A GLANCE

- High sensitivity receivers
- Direct DC-coupling to DEMUX
- 107 Gbit/s operation



## Features

- Two integrated biasing networks
- DC-coupling with e.g. post-amplifiers or demux-ICs possible
- Better overall insertion loss
- O/E RZ conversion up to 107 Gbit/s
- Wavelength range 1480 – 1620 nm
- packaged into modules with fibre pigtail (FC/PC) and a female 1mm connector

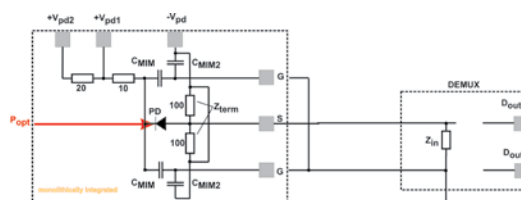
## Applications

- Telecom
- Datacom
- DEMUX driving w/o bias-T
- Input biasing of subsequent electronics via this detector

## Specifications

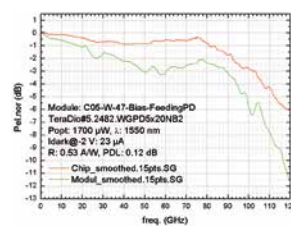
Responsivity	> 0.53 A/W
3 dB bandwidth	90 GHz
PDL	< 0.4 dB
Power linearity	12 dBm (at 1 dB compression)
Pulse width	7.3 ps
50 $\Omega$ termination	integrated
Optical return loss	> 27 dB

## Equivalent circuit



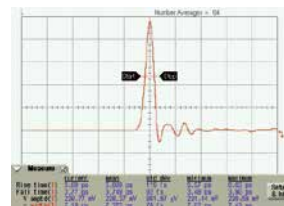
Circuit and chip of novel bias-feeding photodetector OEIC, suitable for direct dc-coupling to subsequent electronics, and capable of feed-through of input bias control of e.g. TWAs or DEMUX-ICs.

## Bandwidth



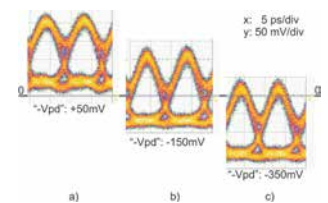
Red line: Chip  
Green line: Module

## Pulse Behaviour



FWHM: 7.2 ps

## Eye pattern at different bias offsets



OTDM MUXed input pulse  
RZ: 2.6 ps, 107 Gbit/s, 2<sup>31</sup>-1

## The Fraunhofer HHI

One of the prime research and development foci of the Fraunhofer Heinrich Hertz Institute lies in photonic networks, components and systems and their application in fields such as digital media.

## Contact

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