100 GHz BALANCED PHOTODETECTOR MODULE

AT A GLANCE
high-speed balanced photodetector module for > 1 T/bs coherent telecom applications

Features
- up to 100 GHz 3 dB-bandwidth
- detection of 128 GBaud x-QAM signals with optical 90° hybrid
- integrated bias network
- low bias operation
- 1 mm RF connector

Technical Background
High-speed balanced photodetector modules are of interest for the development of next-generation telecom coherent optical communication links. Since these R&D links are always a step ahead in terms of symbol rates, photodetector modules with a RF bandwidth beyond state-of-the-art are needed at the receiver side. In combination with a 90° optical hybrid, the balanced photodetectors provide the functionality of a coherent receiver for detecting dual-polarization higher order QAM signals.

Applications
- telecommunication
- coherent test- & measurement systems
- microwave photonics

The photodetector chips inside the modules are based on mature InP technology and are fabricated at the wafer process line of Fraunhofer HHI, offering Telcordia and space-qualified processes. The chips are packaged at Fraunhofer HHI facilities.
Technical Specifications

- 3 dB-bandwidth: up to 100 GHz
- wavelength: 1480 nm - 1620 nm
- low dark current: < 100 nA @ 3 V
- bias voltage: +2 V and -2 V
- 1 mm female RF connector
- RF output matched to 50 Ω
- optical input: SC/APC PM SMF fibre