O- / C-BAND
MACH-ZEHNDER MODULATOR

Fraunhofer
Heinrich Hertz Institute

AT A GLANCE

Indium phosphide Mach-Zehnder Modulators (MZM) for 100 Gbaud/s applications. Monolithic integration with laser source and/or SOA possible, as well as on-chip terminations.

Please ask for special costumer options and developments.

Features

- High electro-optic bandwidth (>67 GHz available)
- Efficient fiber coupling due to optical spot size converter
- High bandwidth and Low V_{pi} voltage with travelling wave electrode design
- serial push-pull drive, zero chirp, single drive, low power consumption

Applications

- Standard OOK modulation formats
- Advanced modulation formats (DPSK, Duobinary, PAM, DQPSK, QAM)

Mach-Zehnder Module

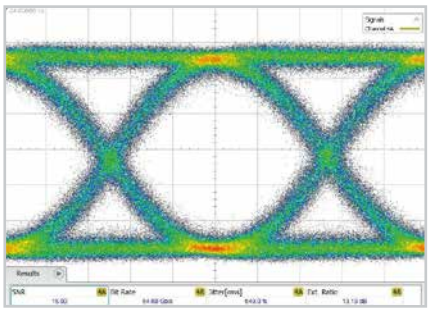
Modules are available with bandwidth up to 35 GHz. These modules have SM or PM fibers and V-connectors. In addition we provide evaluation boards with TEC and TEC Controller.

Fraunhofer
Heinrich Hertz Institute

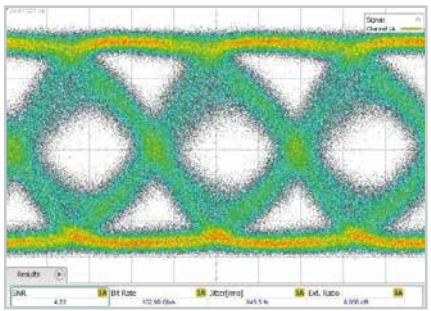
Technical Specifications – MZM Module

3 dB electro-optical bandwidth	35 GHz
Extinction (DC)	> 20 dB
Extinction (dynamic, Module)	>13 dB at 64 Gbit/s
RF-drive voltage	V_{pp} = 3 V
Insertion loss (fiber-fiber)	7.5 dB
Max. optical input power	16 dBm
Optical bandwidth	40 nm
Zero chirp design	α < -0.1

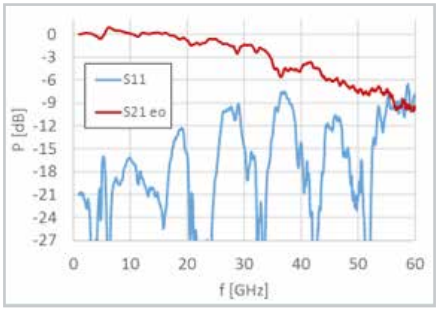
Performance – MZM Module



MZM-Module at 64 Gbit/s



MZM-Module at 100 Gbit/s



MZM-Module small-signal-performance

Klemens Janiak
Photonic Components

Phone +49 30 31002-574
klemens.janiak@hhi.fraunhofer.de

Fraunhofer Heinrich Hertz Institute
Einsteinufer 37, 10587 Berlin
Germany

www.hhi.fraunhofer.de/pc

© Fraunhofer Heinrich Hertz Institute, Berlin 2018