MZM-P110-2024
110 GHz Plasmonic
MZM Module

110 GHz Plasmonic Mach-Zehnder Modulator

Description

The plasmonic Mach-Zehnder Modulator is an ideal solution for high-speed electro-optic conversion in the C band. Packaged in a module and featuring a bandwidth of beyond 110 GHz makes it a first choice for applications in measurement systems, radio-over-fiber (RoF) systems and for high-data-rate optical transport.

Key Features

- 3-dB electro-optical bandwidth >110 GHz
- C-band operation
- Lumped, low-capacitance RF design
- Compact form factor

Performance Data

Operating wavelength	1520 – 1570 nm
Insertion loss (IL)	< 18 dB
Static extinction ratio (ER)	> 25 dB
DC bias on/off voltage	< 1.5 V
3-dB EO bandwidth	> 110 GHz
$V_{\pi, eq}$ @ 100 kHz @ 50 Ohm*	< 5 V

Maximum Ratings

Optical input power**	0 dBm
RF input power @ 50 Ohm	18 dBm
DC voltage at RF input	0 V
DC bias voltage DC bias current	2.5 V 20 mA
Operating / storage temperature	~ 25 °C

Mechanical Specifications

Optical input	SMF/PM with FC/APC connectors
Optical output	SMF/PM with FC/APC connectors
Electrical RF interface	Single ended, 1 mm female
DC interface	2 x DC pins

* Plasmonic modulators are high-impedance devices. Twice the voltage provided by a 50-Ohm signal source will drop across the plasmonic modulator. Using a DC source or a high-impedance-matched driver, double the voltage is required to switch the modulator from the on to the off state.
** Operation time of 8000 h with a V_π degradation < 2.5%.

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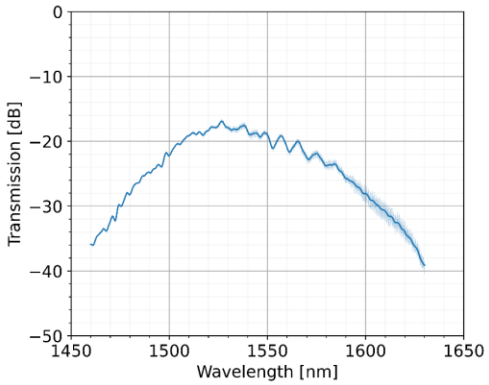
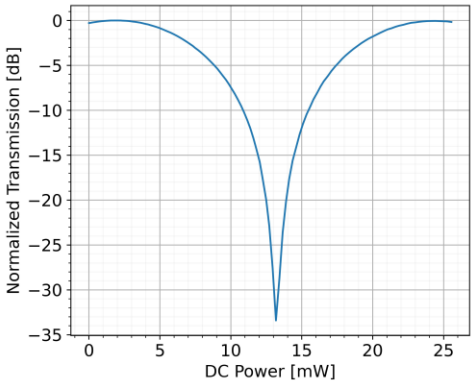
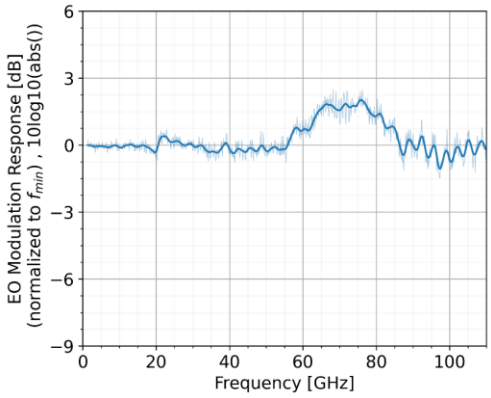
Transmission Spectrum



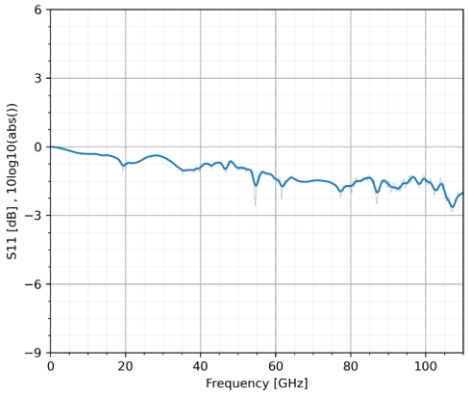
DC Bias Power



EO Modulation Response



Electrical S11



Drawing and Dimensions: