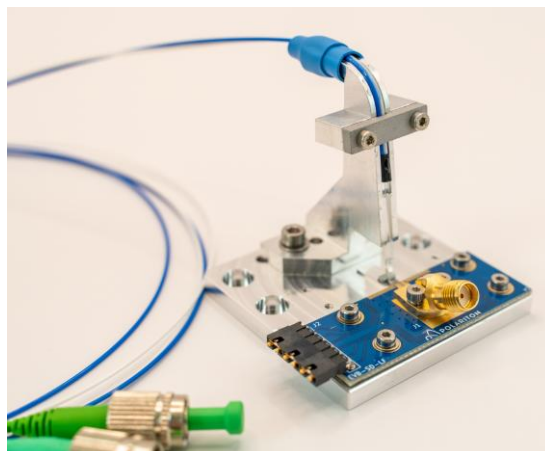


## C Band 70 GHz Mach-Zehnder Modulator

### Key Features

- 3-dB electro-optical bandwidth >70 GHz
- Lumped, low-capacitance RF design
- C band operation
- Compact form factor



### Performance Data

|                                     |         |
|-------------------------------------|---------|
| Peak wavelength                     | 1550 nm |
| Insertion loss (IL)                 | <17 dB  |
| Static extinction ratio (ER)        | >25 dB  |
| DC bias on/off voltage              | <1.5 V  |
| 3-dB EO bandwidth                   | >70 GHz |
| $V_{\pi,eq}$ @ 100 kHz<br>@ 50 Ohm* | <5 V    |

### Maximum Ratings

|                                 |        |
|---------------------------------|--------|
| Optical input power**           | 3 dBm  |
| RF input power @ 50 Ohm         | 18 dBm |
| DC voltage at RF input          | 0 V    |
| DC bias voltage                 | 2.5 V  |
| DC bias current                 | 15 mA  |
| Operating / storage temperature | ~25 °C |

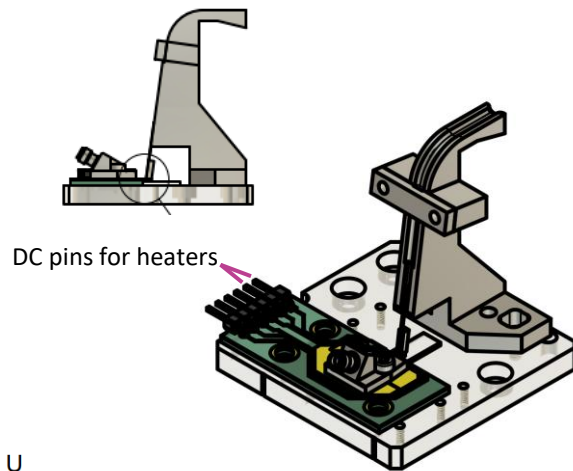
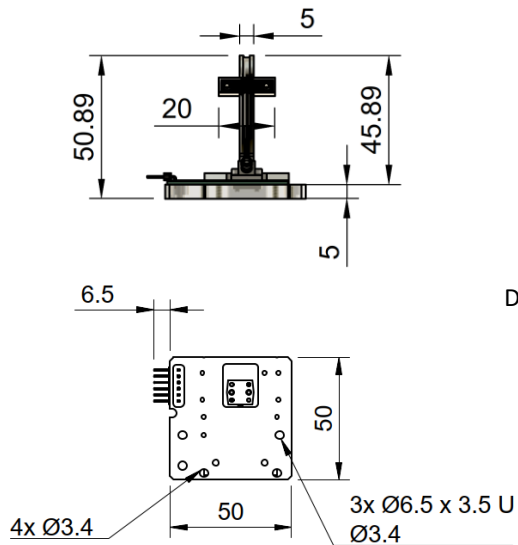
### Mechanical and Optical Specifications

|                         |                                   |
|-------------------------|-----------------------------------|
| Optical input           | SMF or PMF with FC/APC connectors |
| Optical output          | SMF or PMF with FC/APC connectors |
| Electrical RF interface | Single ended, 1 mm female         |
| Electrical DC interface | 2 x DC pins (0.1"), pins 1 and 2  |

\* 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.

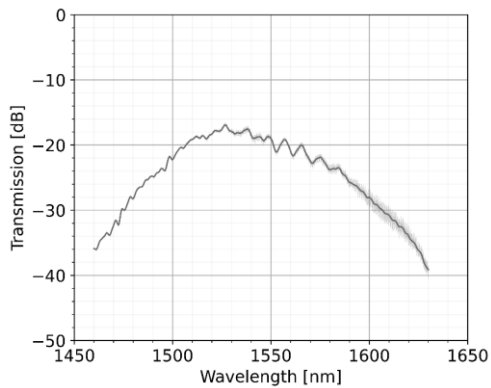
\*\* 3-dB operation point. Based on reliability data for 500 h operation at 50°C and 9 dBm input power with a  $V_{\pi}$  degradation < 10%.

## Drawings and Dimensions

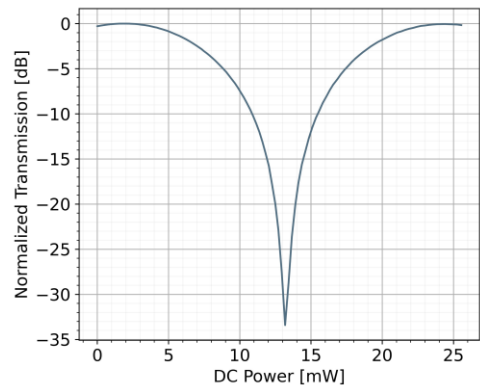


## Key Plots

Transmission Spectrum



DC Bias Power



EO Modulation Response

