Phase Modulator Integrated Intensity Modulator
for Controlled Chirp

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>IM part</th>
<th>PM part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating wavelength</td>
<td>1550±20nm</td>
<td></td>
</tr>
<tr>
<td>Insertion loss</td>
<td>&lt;=6.5dB(include polarizer)</td>
<td></td>
</tr>
<tr>
<td>ON/OFF extinction ratio</td>
<td>&gt;=20dB (@dc)</td>
<td></td>
</tr>
<tr>
<td>Polarization extinction ratio</td>
<td>&gt;=20dB</td>
<td></td>
</tr>
<tr>
<td>Optical return loss</td>
<td>&gt;=30dB</td>
<td></td>
</tr>
<tr>
<td>Optical bandwidth</td>
<td>&gt;=8.0GHz NOTE1</td>
<td></td>
</tr>
<tr>
<td>Drive Voltage(Vπ)</td>
<td>&lt;=6.5V@5GHz</td>
<td>&lt;=10.5V@10GHz</td>
</tr>
<tr>
<td>Parasitic intensity modulation</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>RF input max</td>
<td>+27dBm</td>
<td>+27dBm</td>
</tr>
<tr>
<td>Termination</td>
<td>AC coupled</td>
<td>DC coupled</td>
</tr>
<tr>
<td>Electrical return loss (S11)</td>
<td>&lt;= -12dB(@5GHz)</td>
<td>&lt;= -10dB(@10GHz)</td>
</tr>
<tr>
<td>α Parameter</td>
<td>&lt;=0.2</td>
<td>-</td>
</tr>
<tr>
<td>RF connector</td>
<td>K(SMA)</td>
<td></td>
</tr>
<tr>
<td>Optical fiber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input</td>
<td>0.4mmΦ PMF</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>0.4mmΦ PMF</td>
<td></td>
</tr>
<tr>
<td>Fiber lead length</td>
<td>at each port 1.0~2.0m</td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0~60°C</td>
<td></td>
</tr>
</tbody>
</table>

NOTE1: 130MHz ref
NOTE2: @1kHz Vpp=15V

● Ordering Information

T-MPXH1.5-10-R = Y = Z

Y: Output Optical fiber *1
- 0.4mmΦ PMF P
- Other O

Z: Connector *1,2
- FC/SPC without key ring FN
- FC/SPC with key ring FK
- SC/SPC SC
- SC/APC(Angled PC) FA
- Other O

*1: When Other O is selected in the above ordering code, please specify your requirements with as much detail as possible.
*2: The Polarization state of input and/or output PMF is slow axis aligned.

● Package size (Hermetically-sealed)

[Dimension:mm]
Phase Modulator Integrated Intensity Modulator for Controlled Chirp

Typical Data
1. Optical Bandwidth of Phase modulator Integrated Intensity modulator

2. Electrical Characteristics of Phase modulator Integrated Intensity modulator (S11, S21)
   (Intensity Part) (Phase Part)

3. Eye Pattern of Phase modulator Integrated Intensity modulator
Phase Modulator Integrated Intensity Modulator for Controlled Chirp

Recommended configuration

* This recommended configuration is only for giving general ideas. Please refer to the operation manual which is included with the product when you use the product. The operation manual shows you the appropriate way to use with any note.

(1) For proper adjustment, make optical connection prior to electrical connection otherwise the product may get damage.

The optical connection between the product and a power meter, or between the product and a laser source should be made when laser source is off.

Any risk of making connection while laser source is working, such as loss of eye-sight, should be at the user.

(2) The input fiber of the modulator must be optically adjusted with an optical laser source.

The schematic diagram is illustrated below.

(3) The output fiber of the modulator must be optically adjusted with a power meter.

The schematic diagram is illustrated below.

(4) You can work the laser source.

(5) Adjust the input side connector appropriately so that the input light power to the module is maximized.

The internal polarizer will get damage by improper adjustment and cause unexpected optical loss.

(6) DC Supply, Bias T, Driver are connected to RF input connector.

The schematic diagram is illustrated below.

*This product is internally terminated, thus you do not need DC Block and Termination.

*Addendum

Electrical RZ signal from MZ part, and the same electrical signal from PM part aer entered.

Both electrical signals should be synchronized each other by phase shifter.

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OPTOELECTRONICS BUSINESS DIVISION