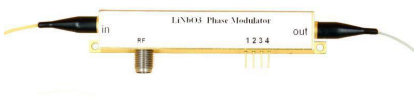
# R-PM Series Phase Modulator




## Description

The $LiNbO_3$ phase modulator is widely used in high-speed optical communication system, laser sensing and ROF systems because of well electro-optic effect. The R-PM series based on Ti-diffused and APE technology, has stable physical and chemical characteristics, which can meet requirement of the most applications in laboratory experiments and industrial systems.

### Features
- Low insertion loss
- Polarization-maintaining
- Low half-wave voltage
- Dual-polarization option

### Applications
- Optical communication
- Quantum key distribution
- Laser sensing systems
- Frequency shifting

### Wavelength
- 850nm
- 1064nm
- 1310nm
- 1550nm

### Bandwidth
- 300MHz
- 2.5GHz
- 10GHz

| Operating wavelength | 780nm | 850nm | 1064nm | 1310nm | 1550nm | | |
|---|---|---|---|---|---|---|---|
| 3dB Bandwidth | ~10GHz | ~10GHz | ~10GHz | ~10GHz | ~300MHz | ~10GHz | ~18GHz |
| Insertion Loss | ＜3dB | ＜3.5dB | < 3.5dB | < 3.5dB | < 3.5dB | < 3.5dB | < 3.5dB |
| Polarization extinction ratio | > 20dB | > 20dB | > 20dB | > 20dB | > 20dB | | |
| $V_{\Pi}$@RF (50KHz) | < 3V | < 3V | <4.0V | < 3V | < 4V | <3.5V | < 4.5V |

***Ordering Information***

| R | AM | 15 | 10G | XX | XX |
|---|---|---|---|---|---|
| | Type：<br>PM---Phase Modulator | Wavelength：<br>07---780nm<br>08---850nm<br>10---1060nm<br>13---1310nm<br>15---1550nm | 工作带宽：<br>300M---300MHz<br>10G---10GHz<br>20G---10GHz | In-Out Fiber type：<br>PP---PM/PM<br>PS---PM/SMF | Optical connector：<br>FA---FC/APC<br>FP---FC/PC<br>SP---Customization |

## R-PM-10-10G

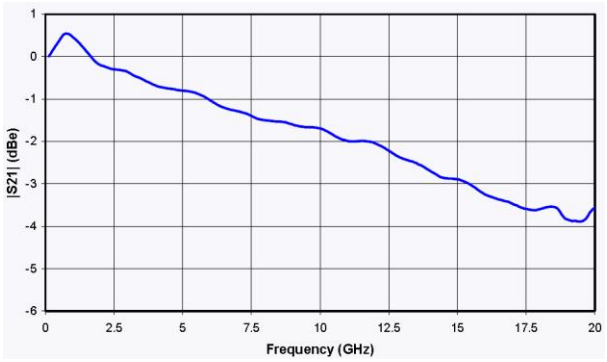
## Wavalength 1064nm 10GHz Phase modulator

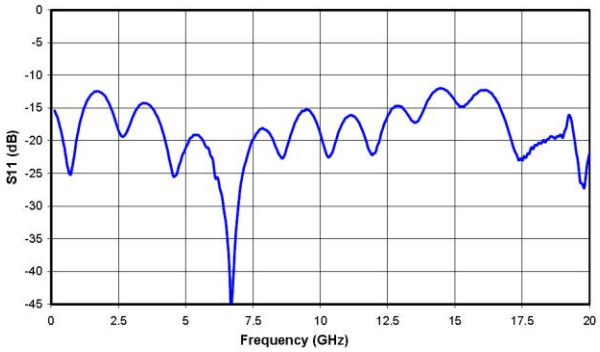
| Parameter | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Optical parameters** | | | | | | |
| Operating wavelength | | λ | 980 | 1060 | 1150 | nm |
| Insertion loss | | IL | | 3 | 3.5 | dB |
| Optical return loss | | ORL | | | -45 | dB |
| Polarization extinction ratio | | PER | 20 | | | dB |
| Optical fiber | Input port | | 980nm PM fiber(125/250μm) | | | |
| | output port | | 980nm PM fiber(125/250μm) | | | |
| Optical fiber interface | | | FC/PC、FC/APC Or Customization | | | |
| **Electrical parameters** | | | | | | |
| Operating bandwidth （-3dB） | | $S_{21}$ | 10 | 12 | | GHz |
| Half-wave voltage @50KHz | | $V_{\Pi}$ | | 3.5 | 4.0 | V |
| Electrical return loss | | $S_{11}$ | | -12 | -10 | dB |
| Input impedance | | $Z_{RF}$ | 50 | | | Ω |
| Electrical interface | | | SMA(f) | | | |

## Limit Conditions

| Parameter | Symbol | Unit | Min | Typ | Max |
|---|---|---|---|---|---|
| Input optical power | $P_{in,Max}$ | dBm | | | 20 |
| Input RF power | | dBm | | | 28 |
| Operating temperature | Top | ℃ | -10 | | 60 |
| Storage temperature | Tst | ℃ | -40 | | 85 |
| Humidity | RH | % | 5 | | 90 |

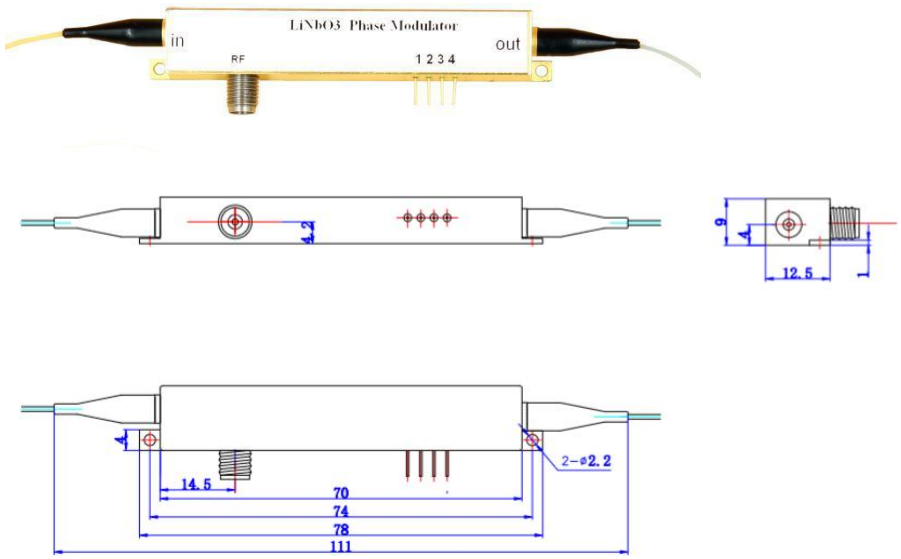
## S21 Curve &S11 Curve




**S21 Curve** **S11 Curve**

## Mechanical Diagram




| PORT | Symbol | Note |
|---|---|---|
| In | Optical input port | PM Fiber (125μm/250μm) |
| Out | Optical output port | PM and SMF option |
| RF | RF input port | SMA(f) |
| Bias | Bias control port | 1,2,3,4-N/C |

RF Driver and Bias control circuit board information are provided on website (www.bjrofoc.com), you can also contact us for more information by email (bjrofoc@rof-oc.com) or WhatsApp（+86-18978968297）