

# 1310nm 系列多功能集成光波导调制器

## 1310 nm multi-functional integrated optical device



ASE 宽带多功能集成光波导调制器 (Y 波导) 具有起偏与检偏、分束与合束以及电光相位调制等功能。

具有插入损耗低、偏振消光比高、电光相位调制线性度高的特点。采用微电子工艺和微光学工艺制作、保偏光纤对准耦合封装技术生产，也可以按照客户的要求定制不同工作波长、不同封装形式等特殊规格的器件。

Multi-Functional Integrated Optics Chip (MIOC) includes a linear polarizer, acts as polarizer and depolarizer; a Y-branch waveguide, acts as optical power splitter and combiner.

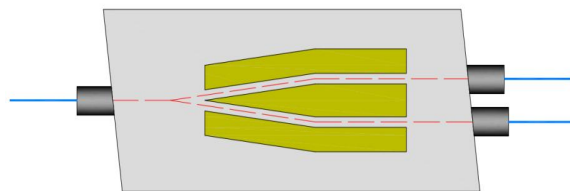
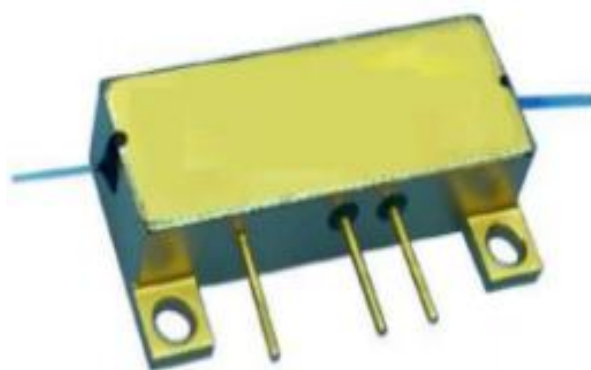
Multi-Functional Integrated Optics Chip (MIOC) has the characteristics of high reliability, low insertion loss, high polarization extinction ratio. Micro-electronic and micro-optical processes, and fiber pigtail precision alignment are taken in the MIOC. Other wavelength band or package type can also be customized.

### 主要特点 Features

- 插入损耗低 Low Insertion Loss
- 偏振消光比高 High Polarization Extinction Ratio
- 温度相关损耗变化小 Small Temperature Dependent Loss
- 电光相位调制线性度高 High Electro-optic Phase Modulation Linearity
- 可靠性高 High Reliability

### 应用领域 Applications

- 光纤陀螺 Fiber Optic Gyroscope (FOG)
- 光纤电流传感 Fiber Optic Current Transformer (FOCT)
- 其它光纤传感 Other Fiber Optic Sensing



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性能参数：

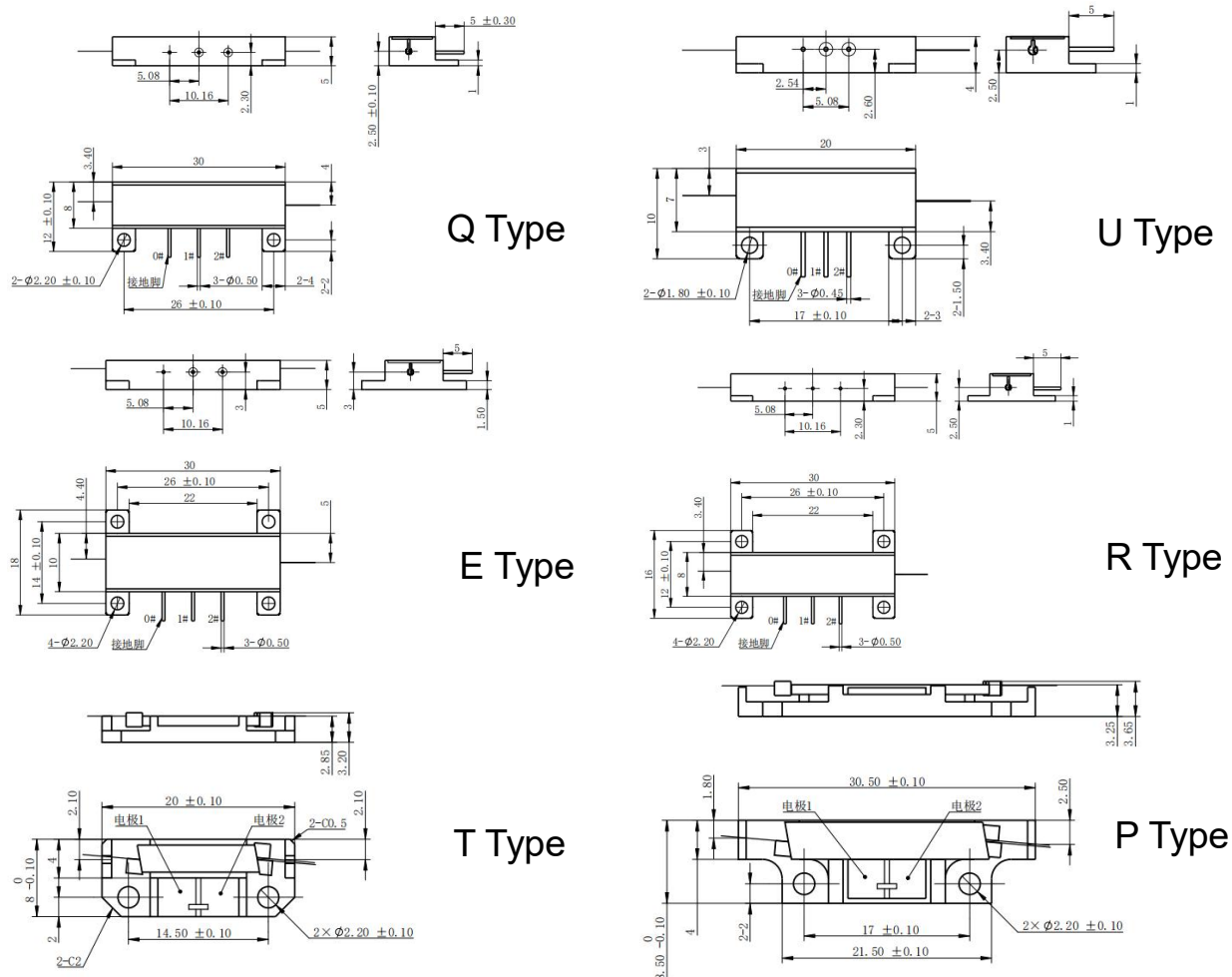
| 类别<br>Type      | 参数<br>Parameter                                                  | 符号<br>Symbol | 单位<br>Unit | 性能指标 (典型值)<br>Typical Value |               |
|-----------------|------------------------------------------------------------------|--------------|------------|-----------------------------|---------------|
|                 |                                                                  |              |            | Perfect                     | General       |
| 光学性能<br>Optical | 工作波段<br>Operating Wavelength Band                                | $\lambda_c$  | nm         | 1290~1330                   |               |
|                 | 插入损耗<br>Insertion Loss                                           | IL           | dB         | $\leq 3.5$                  | $\leq 4.0$    |
|                 | 全温损耗变化<br>Insertion Loss Change @ Full Working Temperature Range | $\Delta IL$  | dB         | $\leq 0.35$                 | $\leq 0.5$    |
|                 | 分光比<br>Splitter Ratio                                            | D            | %          | $50 \pm 2$                  | $50 \pm 3.0$  |
|                 | 全温分光比<br>Splitter Ratio Change @ Full Working Temperature Range  | $\Delta D$   | %          | $\leq 3$                    | $\leq 5$      |
|                 | 回损<br>Return Loss                                                | RL           | dB         | $\leq -55$                  |               |
|                 | 残余强度调制<br>Remain Intensity Modulate                              | RIM          | -          | $\leq 5/10000$              | $\leq 2/1000$ |
|                 | 尾纤偏振串音<br>Pigtail Polarization Extinction Ratio                  | PER          | dB         | $\leq -30$                  | $\leq -28$    |
|                 | 全温尾纤偏振串音<br>Pigtail Polarization Extinction Ratio @ Full         | $PER_T$      | dB         | $\leq -25$                  | $\leq -23$    |

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|                     |                                    |           |                    |                                         |              |
|---------------------|------------------------------------|-----------|--------------------|-----------------------------------------|--------------|
|                     | Working Temperature Range          |           |                    |                                         |              |
| 电学性能<br>Electrical  | 半波电压<br>Half Wave Voltage          | $V_{\pi}$ | V                  | $\leq 3.5$                              | $\leq 4.5$   |
|                     | 波形斜率<br>Slope of Modulate Waveform | S         | -                  | $\leq 1/250$                            | $\leq 1/250$ |
|                     | 调制带宽<br>Bandwidth                  | BW        | MHz                | $\geq 300$                              |              |
| 封装结构<br>Package     | 封装形式<br>Package Type               | -         | -                  | 见产品图纸<br>See package shape structure    |              |
|                     | 器件尺寸(不含引脚)<br>Mechanical Size      | -         | mm                 | 见产品图纸<br>See package shape structure    |              |
|                     | 尾纤类型<br>Fiber Pigtail Type         | -         | -                  | PM, $\phi 125\mu\text{m}/80\mu\text{m}$ |              |
|                     | 尾纤长度<br>Fiber Length               | L         | m                  | 1.2                                     |              |
| 环境指标<br>Environment | 工作温度<br>Working Temperature Range  | $T_w$     | $^{\circ}\text{C}$ | $-45\sim+70$                            |              |
|                     | 储存温度<br>Storage Temperature Range  | $T_s$     | $^{\circ}\text{C}$ | $-55\sim+85$                            |              |

## 结构尺寸图：



## 选型列表：

| Product code | Wavelength [nm] | Input pigtail | Output pigtail | Axis Alignment | Package Type |
|--------------|-----------------|---------------|----------------|----------------|--------------|
| YQCL01       | 1310            | 125/250 PM    | 80/165 PM      | Fast           | Q 型          |
| YQCL02       | 1310            | 125/250 PM    | 80/165 PM      | Slow           | Q 型          |
| YQLL01       | 1310            | 80/165 PM     | 80/165 PM      | Fast           | Q 型          |
| YECL01       | 1310            | 125/250 PM    | 80/165 PM      | Fast           | E 型          |
| YECL02       | 1310            | 125/250 PM    | 80/165 PM      | Slow           | E 型          |
| YECL05       | 1310 Perfect    | 125/250 PM    | 80/165 PM      | Slow           | E 型          |
| YTCL01       | 1310            | 80/165 PM     | 80/165 PM      | Fast           | T 型          |
| YUCL01       | 1310            | 80/165 PM     | 80/165 PM      | Fast           | U 型          |

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