Integrated Fiber Tap Power Monitor

(Directional and Unidirectional)

(patent pending)

Product Description

The Tap Optical Power Monitor is a hybrid fiber optical passive component that integrates a thin-film tap of flat spectral response with a high sensitivity PIN photodiode for power monitoring applications. The Power Monitor minimizes component assembly costs and module footprint while increasing module design efficiency by facilitating fiber management.

The Power Monitor combines the functionality of an optical coupler and a photodiode while delivering low insertion loss and low dark current with high temperature stability over a wide wavelength range. Our directional version works well from 1260nm to 1620nm band.

Performance Specifications

<table>
<thead>
<tr>
<th>TM Series Power Monitor</th>
<th>Min</th>
<th>Typical</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>1260</td>
<td>1620</td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>Tap Ratio</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>%</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>0.5</td>
<td>0.7</td>
<td>0.8</td>
<td>dB</td>
</tr>
<tr>
<td>Responsivity</td>
<td>8</td>
<td>25</td>
<td>45</td>
<td>mA/W</td>
</tr>
<tr>
<td>Input Power</td>
<td>-45</td>
<td>27</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>WDL</td>
<td>0.02</td>
<td></td>
<td></td>
<td>dB/nm</td>
</tr>
<tr>
<td>PDL</td>
<td>0.03</td>
<td>0.05</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Polarization extinction ratio</td>
<td>18</td>
<td>23</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Tensile load</td>
<td>5</td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Return Loss</td>
<td>45</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Dark Current at 23°C</td>
<td>0.4</td>
<td>1.0</td>
<td></td>
<td>nA</td>
</tr>
<tr>
<td>Directivity</td>
<td>None</td>
<td>&gt;25</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Capacitance</td>
<td>0.7</td>
<td>0.9</td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5</td>
<td>20</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Rise/Fall Time</td>
<td>0.3</td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Cut-Off Frequency</td>
<td>2</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-5</td>
<td>75</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40</td>
<td>85</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Reliability</td>
<td>Telcordia 1209 and 1221</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package Dimension</td>
<td>Φ 6.0 x L 18</td>
<td></td>
<td></td>
<td>mm</td>
</tr>
</tbody>
</table>

Notes:
1. Insertion Loss excluding connectors.
2. The net responsivity is defined as the ratio of the PD current output and optical power measured at output fiber.
3. Single Mode Fiber version only.
4. PM Fiber version only.
5. Directivity defines the responsivity contrast between the case that light power comes from input fiber port and the case that light power comes from output fiber port. From 1260 to 1620nm.
### Mechanical Footprint Dimensions (Unit:mm)

![Mechanical Footprint Diagram]

### Ordering Information

<table>
<thead>
<tr>
<th>TOPM-</th>
<th>Tap Ratio</th>
<th>Wavelength</th>
<th>Directivity</th>
<th>Package</th>
<th>Fiber Type</th>
<th>Fiber Length</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% =11 3% =33 5% =55 Special =00</td>
<td>1310 = 3 1550 = 5 13/15 =8 1260–1620=9 Special = 0</td>
<td>No = 1 Yes = 2</td>
<td>Standard =1 Special =0</td>
<td>SMF-28 = 1 Panda 400=4 Panda 250=5 Special=0</td>
<td>Bare fiber =1 900um Loose Tube=3 Special = 0</td>
<td>0.25m= 1 0.5m = 2 1.0 m= 3 Special =0</td>
</tr>
</tbody>
</table>

**Standard Package**