The optical fuse is a passive component designed to protect expensive equipment and fiber cables from becoming damaged during power spikes and surges. This compact device has a single input and a single output fiber port. When the input power is lower than a designated threshold level, the fuse remains transparent. However, the fuse becomes permanently opaque when the power exceeds the specified threshold level.

To protect against power spikes and surges, the optical fuse is placed either at the input port of an optical device, such as a detector, or at the output port of a high power device, such as a laser or optical amplifier. The typical operation of a fuse protected optical system is approximately 3dB (50%) below the threshold power. At these operating conditions, the insertion loss of the fuse is between 0.5 and 1dB (80-90%) transmission.

By introducing an optical fuse into test set-ups in laboratories or networks, one is assured protection against inevitable spikes and excessive power levels that can damage equipment and installed fiber. An activated (burnt) fuse blocks the forward power without increasing the reflected power, preventing damage to its surroundings.

**OpticalFuse**

- **Threshold power**: 30dBm
- **Wavelength Range**: C and L bands
- **Response Time**: <50μsec
- **Insertion Loss**: <1dB
- **Polarization Dependent Loss**: <0.1dB
- **Wavelength Dependent Loss**: <0.15dB
- **Return Loss**: >40dB
- **Power Drop at Threshold**: >10dB
- **Operating Power**: Up to 3dB below threshold

*Other threshold powers between 25dBm and 32dBm are available*
OPTICAL FUSE RESPONSE TIME

Time [microseconds]

0.00 0.20 0.40 0.60 0.80 1.00

0 10 20 30 40 50 60 70 80 90 100

Input and output pulses

RED-input pulse, BLUE-output pulse  Response time in the graph is approx. 5μsec

PACKAGING DIMENSIONS

<table>
<thead>
<tr>
<th>Fiber Style</th>
<th>Connector style</th>
<th>Input/output Lead length</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>L</td>
<td>Diameter/W</td>
</tr>
<tr>
<td>250μm fiber</td>
<td>Any, none</td>
<td>0.5, 1.0 meter</td>
<td>40 mm</td>
</tr>
<tr>
<td>900μm buffered fiber</td>
<td>Any, none</td>
<td>0.5, 1.0 meter</td>
<td>40 mm</td>
</tr>
<tr>
<td>1.6/2.0mm jacketed cable</td>
<td>Any, none</td>
<td>0.5, 1.0 meter</td>
<td>64 mm</td>
</tr>
</tbody>
</table>

All proprietary and intellectual property rights in and to the Optical Fuse are the exclusive property of KiloLambda IP Limited.

ORDERING INFORMATION

Order Number Description
86560-XXXX Contact Inside Sales for Ordering Information