PD-LD Inc. offers a variety of standard and custom PIN Photodiodes and APDs in fiber coupled packages. The semiconductors offered are of proven manufacture and design. Our PDINP Series are 75um diameter InGaAs PIN photodiodes that are optimal from 1100 to 1650nm. These devices are available in fiber pigtailed coaxial packages or in connector style receptacle packages.

**Pigtailing**

These 75um diameter devices can be pigtailed with any size optical fiber that is compatible with its active area size. Pigtails may range in core size from 3um to 62.5micron. One meter is the standard length, but any length or connector termination may be specified. Pigtails may be terminated with ST, FC, SC and LC connectors with either PC or APC polish.

**Receptacles**

Standard ST, FC, SC as well as SMA housings are available in both panel and board mountable versions. These receptacles can be optimized for use with both single mode and multimode optical fibers.

**Low Back Reflection Assemblies**

For those applications requiring low optical back reflection, PD-LD offers a series of fiber pigtailed InGaAs detectors. Typically, 55 um or 75um InGaAs detectors are aligned to angle-polished, radially tuned fiber pig-tails, in order to minimize incident reflected light. With this process, back reflection values from –40 to –50dB maybe specified. Such devices are ideal for CATV, tap manufacturing.

**Manufacturing**

PD-LD Inc. maintains a large inventory of the most popular detector sizes and pin-outs. Efficient package designs and manufacturing processes allow PD-LD to rapidly support both small and large volume requirements. Complete 100% testing of all critical parametric device values ensure optimal performance and quality.

Not all receptacle packaging styles are represented on this data sheet, so please contact PD-LD Inc. for further information.

<table>
<thead>
<tr>
<th>PD-LD Part Number</th>
<th>Zarlink X-Ref</th>
<th>Connector or Receptacle Type</th>
<th>Fiber Type Core/Cladding (um)</th>
<th>Lead Orientation</th>
<th>Bandwidth -3dB (GHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDINP075FC13-W-0</td>
<td>MF432FC</td>
<td>FC Panel Mount</td>
<td>62.5/125</td>
<td>“W”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075SC23-W-0</td>
<td>MF432-SC</td>
<td>SC Board or Panel Mount</td>
<td>62.5/125</td>
<td>“W”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075SC63-Q-0</td>
<td>MF432-SC special</td>
<td>SC Board Mount Narrow body</td>
<td>62.5/125</td>
<td>“Q”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075ST73-Q-0</td>
<td>MF432ST</td>
<td>ST Low Profile</td>
<td>62.5/125</td>
<td>“Q”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075ST83-Q-0</td>
<td>N/A</td>
<td>ST High Profile</td>
<td>62.5/125</td>
<td>“Q”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075ST83-W-0</td>
<td>N/A</td>
<td>ST High Profile</td>
<td>62.5/125</td>
<td>“W”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075SM13-Q-0</td>
<td>MF432SMA</td>
<td>SMA Board Mount</td>
<td>62.5/125</td>
<td>“Q”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075SAD-V-0-01</td>
<td>N/A</td>
<td>Pigtailed LBR SC/ APC</td>
<td>9/125</td>
<td>“V”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP0751SCA-0-01</td>
<td>MF432PT</td>
<td>Pigtailed SC/PC</td>
<td>9/125</td>
<td>—</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP075FC11-W-0</td>
<td>N/A</td>
<td>FC Panel Mount</td>
<td>9/125</td>
<td>“W”</td>
<td>2.5</td>
</tr>
<tr>
<td>PDINP0751LCD-V-0-01</td>
<td>N/A</td>
<td>Pigtailed LC w/flange</td>
<td>9/125</td>
<td>“V”</td>
<td>2.5</td>
</tr>
</tbody>
</table>

InGaAs (@ 5V bias, 1300nm Laser Source, 25°C. Maximum Input power 10mW, 50/125um test fiber. 0.9pF maximum capacitance. 0.8A/W min responsivity.

PD-LD Inc. reserves the right to make modifications to or discontinue products without prior notice.

5-09 PDINP Series Rev.C
**PDINP Series**  
InGaAs Detectors for Fiber Optics

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**Pinout & Mechanical Dimensions (mm)**

PD-LD aligns then secures each TO-Packaged photodiode within a universal alignment sleeve. This assembly may then be incorporated into a connector receptacle assembly (FC, SC, ST, etc) or into a fiber pigtailed assembly. Some examples of housings are listed here, but other packages are available upon request, including board mountable SC and FC styles. The standard pin-out rotation is to have the TO can tab at 1:00 when the assembly is viewed from the rear and the key slot is up (12:00).

---

**Pigtailed**

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Device Code</th>
<th>Active Area</th>
<th>Fiber Size</th>
<th>Connector CC (Pigtail Only)</th>
<th>Receptacle CCC (Pigtail Only)</th>
<th>Bracket B</th>
<th>Orientation O</th>
<th>Pigtail Length M</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN=InGaAs PIN</td>
<td>XX</td>
<td>055=55microns</td>
<td>1=9/125/900</td>
<td>FC=FC/PC</td>
<td>FC1=Panel Mount</td>
<td>A=None</td>
<td>TBD</td>
<td>10=10m</td>
</tr>
<tr>
<td>SI=Silicon PIN</td>
<td>XX</td>
<td>075=75microns</td>
<td>2=50/125/900</td>
<td>FA=FC/APC</td>
<td>FC2=Board Mount</td>
<td>B=102-10112 Panel</td>
<td>V=Gnd at 9:00</td>
<td>03=3m</td>
</tr>
<tr>
<td>SA=Silicon APD</td>
<td>XX</td>
<td>100=100microns</td>
<td>3=62.5/125/900</td>
<td>FU=FC/UPC</td>
<td>SC1=Panel Mount</td>
<td>C=102-10181 BdMt</td>
<td>01=1m</td>
<td></td>
</tr>
<tr>
<td>GE=Germanium PIN</td>
<td>XX</td>
<td>300=300microns</td>
<td>4=100/140/900</td>
<td>SC=SC/PC</td>
<td>SC2=Panel or Board Mount</td>
<td>D=102-10198 BdMt</td>
<td>.5=.5m</td>
<td></td>
</tr>
<tr>
<td>GA=Germanium APD</td>
<td>XX</td>
<td>500=500microns</td>
<td>5=9/125/900</td>
<td>SA=SC/APC</td>
<td>SC6=Board Mount receptacle without “ears”</td>
<td>W=Bracket Shipped Separately</td>
<td>.1=.1m</td>
<td></td>
</tr>
</tbody>
</table>

- **Low Back Reflection -40dB max**
- **8=7/125/900 Flexcore**
- **9=Customer Supplied**
- **ST=ST/PC**
- **ST7=Low Profile**
- **X=Customer Supplied**
- **A=200 micron core fiber**
- **LC=LC/PC**
- **ST8=Board/Panel Mount**

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Mechanical Drawing for Coaxial Fiber Pigtailed PIN Photodiode
Low Back Reflection Model  PDINP075500A-0-0-01
Standard Model  PDINP075100A-0-0-01
Flexcore 5.9µm core at 980nm  PDINP075800A-0-0-01

PDINP0755SAD-V-0-01  Pin 1= PD Anode
Pin 2= PD Cathode
Pin 3= Ground

PD-LD Inc. reserves the right to make modifications to or discontinue products without prior notice. 5-09 PDINP Series Rev.C
FC Panel Mount Receptacle with “W” Lead Orientation

NOTES:
1. THESE DEVICES ARE ESD SENSITIVE. ESD PRECAUTIONS ARE ADVISED.
2. ALL DEVICES ARE SHIPPED WITH ESD LEAD PROTECTORS AND DUST COVERS.
3. ALL DEVICES WILL BE MARKED WITH A PD-LD SERIAL NUMBER.

PDINP Series       InGaAs Detectors for Fiber Optics

FC Board Mount Receptacle Housing
SC2 Style Board / Panel Mount
Receptacle with “W” Lead Orientation

SC6 Style Board Mountable Receptacle with “W” Lead Orientation
ST Receptacle style Housings
Low and High Profile Heights
With “Q” or “W” Lead Orientation

NOTES:
1. THESE DEVICES ARE ESD SENSITIVE.
   ESD PRECAUTIONS ARE ADVISED.
2. ALL DEVICES ARE SHIPPED WITH ESD LEAD
   PROTECTORS AND DUST COVERS.
3. ALL DEVICES WILL BE MARKED
   WITH A PD-LD SERIAL NUMBER.

PD-LD Inc. reserves the right to make modifications to or discontinue products without prior notice.
SMA Board Mount Housing with “Q” Lead Orientation

NOTES:

1. THESE DEVICES ARE ESD SENSITIVE. ESD PRECAUTIONS ARE ADVISED.
2. ALL DEVICES ARE SHIPPED WITH ESD LEAD PROTECTORS AND DUST COVERS.
3. ALL DEVICES WILL BE MARKED WITH A PD-LD SERIAL NUMBER.
### InGaAs Absolute Maximum Ratings (Tc=25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Current</td>
<td>$I_R$</td>
<td>2</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>$V_R$</td>
<td>20</td>
<td>V</td>
</tr>
<tr>
<td>Forward Current</td>
<td>$I_F$</td>
<td>5.0</td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>$T_{OPR}$</td>
<td>-40 to 85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>$T_{STR}$</td>
<td>-40 to 95</td>
<td>°C</td>
</tr>
</tbody>
</table>

### Plots for 75μm Diameter InGaAs PIN Photodiodes, INP and INR Series

1. **Typical Spectral Response at 23°C**
   - Graph showing response vs. wavelength in nm.
2. **Dark Current**
   - Graph showing reverse current vs. reverse voltage.
3. **Capacitance vs. Voltage**
   - Graph showing capacitance vs. reverse voltage.
4. **Bandwidth**
   - Graph showing normalized response vs. frequency in MHz.