InGaAs APD’s
PD-LD Inc. offers low noise, high responsivity InGaAs Avalanche Photo Diodes (APD’s) in convenient fiber coupled packages. These assemblies incorporate top-illuminated 55 micron diameter active area APD’s that responds optimally to both 1310 and 1550 nm light sources. Each module contains a semiconductor whose bandwidth is ideally suited to industry standard transmission rates from DC to 2.5 GHz. The planar fabrication techniques used to create these semiconductors make them optimal for applications demanding high reliability receivers. For optimal performance with gains on the order of 10 to 15 they should be operated at voltage biases below breakdown.

These modules are available with either bare or connectorized fiber pigtails or in receptacle style housings suitable for board or panel mounting. Receptacle mounted APDs are not available with LBR feature. These high reliability units may be operated and stored between –40 and 85°C.

### Applications
- SONET/SDH
- FTTH
- ONU Nodes
- High Frequency Test Equipment
- Low light receivers

### Features
- InGaAs APD
- High Responsivity
- Low capacitance receivers
- High Gain, low Noise
- -40 to 85°C Operating Range
- FC, ST, SC Receptacle Housing
- Pigtailed w/9/125 μm Fiber

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Symbol</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Wavelength</td>
<td>nm</td>
<td>Lambda</td>
<td>950 to 1650nm</td>
</tr>
<tr>
<td>Responsivity 1550nm fiber coupled, M=1</td>
<td>A/W</td>
<td>R</td>
<td>0.85 min</td>
</tr>
<tr>
<td>Responsivity 1310nm fiber coupled M=1</td>
<td>A/W</td>
<td>R</td>
<td>0.7 min</td>
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<tr>
<td>Analog Bandwidth (-3 dB from 130 MHz) M=10, 50 Ohm load</td>
<td>GHz</td>
<td>BW_e</td>
<td>2.5 min</td>
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<tr>
<td>Active Diameter</td>
<td>um</td>
<td>D</td>
<td>55 typ.</td>
</tr>
<tr>
<td>Total Dark Current M=10, Vr=0.9 Vb</td>
<td>nA</td>
<td>Id</td>
<td>10 typ 50 max</td>
</tr>
<tr>
<td>Breakdown Voltage Id=10uA</td>
<td>Vbr</td>
<td>V_b</td>
<td>30 min 60 max</td>
</tr>
<tr>
<td>Capacitance, V_b=0.9, M=10, f=1MHz</td>
<td>pF</td>
<td>C</td>
<td>0.38 typ 0.5 max</td>
</tr>
<tr>
<td>Temperature Coefficient</td>
<td>V / °C</td>
<td>Delta T</td>
<td>0.09 typ</td>
</tr>
<tr>
<td>APD Reverse Current</td>
<td>uA</td>
<td>Ir</td>
<td>500 max</td>
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<tr>
<td>Maximum Multiplication Factor 1310nm</td>
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<td>M_max</td>
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</tbody>
</table>

Specifications at 22°C and are subject to change without notice. Please contact PD-LD Sales.
55 um Diameter InGaAs Avalanche Photodiodes

Mechanical Specifications and PIN-OUT

- PD- [Diagram]
- PD+ [Diagram]

Fiber Pigtailed Devices

PDIABS055FCCB-O-V-MM

- D = Detector
- IA = InGaAs APD
- BS = 55 um APD
- RRR = Receptacle
- FC1 = FC Panel Mount
- FC2 = FC Board Mount
- ST1 = ST
- ST2 = ST low profile
- SC1 = SC
- F = Fiber Type
- 1 = 9/125/900 SMF
- 2 = 50/125 MMF
- 3 = 62.5/125 MMF
- 5 = 9/125/900 LBR
- CC = Connector Type
- ST = ST
- SC = SC
- SA = SC/APC
- FA = FC/APC
- 00 = No Connector

B = Bracket Type (pigtail only)
- A = None
- B = Panel Mount
- D = Board Mount
- X = Customer Supplied

- O = Lead Orientation
- 0 = N/A
- T = Grnd at 6:00
- V = Version
- 0 = Standard

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2-11 InGaAs APD Rev.1

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55 um Diameter InGaAs Avalanche Photodiodes

FC Board Mount Receptacle

FC Panel Mount Receptacle

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.

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