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# PDI-40-P10-4G-K

## OVERVIEW

PDI-40-P10-4G-K is the InGaAs PIN photodiode coupled to an optical fiber and packaged into a hermetic case

## MAIN FEATURES

- Maximum optical input power: 10 mW
- Bandwidth: 4 GHz
- Typical responsivity: 1.0 A/W at 1550 nm
- Package types: coaxial with or without bracket
- Low back reflection, return loss RL > 50 dB
- Low dark current 0.02 nA

## APPLICATIONS

- Optical fiber communication systems

## ORDERING INFORMATION

PDI-40-P10-4G-K-X-X-7-X-X-X

**Optical matching**
**R50**: back reflection -50 dB (SM1 or SM3 fiber, FA, SA or N connector)
**RM**: back reflection -30 dB, optical matching, +5% higher responsivity

**Case type**
**U**: compact coaxial
**B**: compact coaxial with double-sided bracket

**Fiber type**
**SM06**: SM, Corning Hi-1060, furcation tubing ∅0.9 mm
**SMT**: SM, Corning Titania-Clad, furcation tubing ∅0.9 mm, ultrasmall bending radius 2.5 mm
**SM1**: SM, G.657.A1, Corning SMF-28 Ultra, furcation tubing ∅0.9 mm or **BSM1** ∅0.25mm
**SM3**: SM, G.657.B3, Corning ClearCurve ZBL, furcation tubing ∅0.9 mm or **BSM3** ∅0.25mm
Other type: on request

**Connector type**
**FA**: FC/APC (SM1,SM3, SMT)
**FU**: FC/UPC (SM1, SM3, SMT)
**SA**: SC/APC (SM1)
**SU**: SC/UPC (SM1)
**N**: no connector
Other type: on request

**Fiber length**
**0.5**: 500+/-50 mm
**1.0**: 1000+/-100 mm
Other length: on request



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## ABSOLUTE MAXIMUM RATINGS

| Parameter | | Value | Unit | Conditions |
|---|---|---|---|---|
| Maximum optical input power | $P_{max}$ | 10 | mW | |
| Reverse voltage | $V_R$ | 20 | V | |
| Forward current | $I_F$ | 10 | mA | |
| Operating temperature | $T_{op}$ | -40 ÷ +85 | °C | |
| Storage temperature | $T_{stg}$ | -40 ÷ +85 | °C | |
| Soldering temperature | $T_{sold}$ | 260 | °C | Max. 5 seconds |

## ELECTRICAL-OPTICAL CHARACTERISTICS (T = 25 °C)

| Parameter | | | Min | Typ | Max | Unit | Conditions |
|---|---|---|---|---|---|---|---|
| Responsivity | RM | R | 1.00 | 1.10 | | A/W | λ = 1550 nm |
| | R50 | | 0.95 | 1.05 | | | λ = 1550 nm |
| Return loss | R50 | RL | 45 | 50 | | dB | |
| | RM | | 25 | 30 | | | |
| Operating voltage | | $V_{op}$ | | 3 | 5 | | |
| Dark current | | $I_d$ | | 0.02 | 0.08 | nA | $V_R$ = 3 V |
| Total capacitance | | $C_t$ | | 0.55 | 0.80 | pF | $V_R$ = 3 V, f = 1 MHz |
| Chip capacitance | | $C_{chip}$ | | 0.35 | 0.50 | pF | $V_R$ = 3 V, f = 1 MHz |
| Bandwidth | | BW | | 4 | | GHz | Pi = -10 dBm, $V_R$ = 3 V, $R_L$ = 50 Ω, Small signal modulation |

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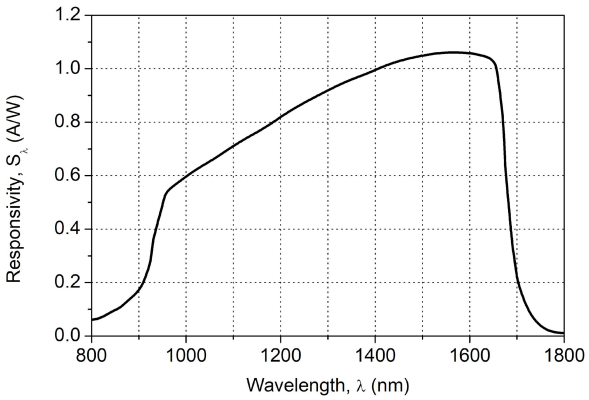
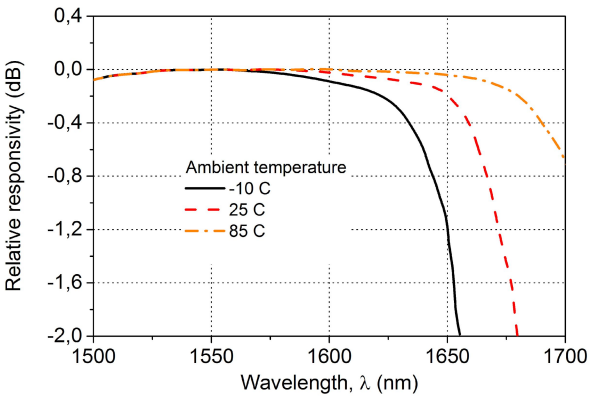
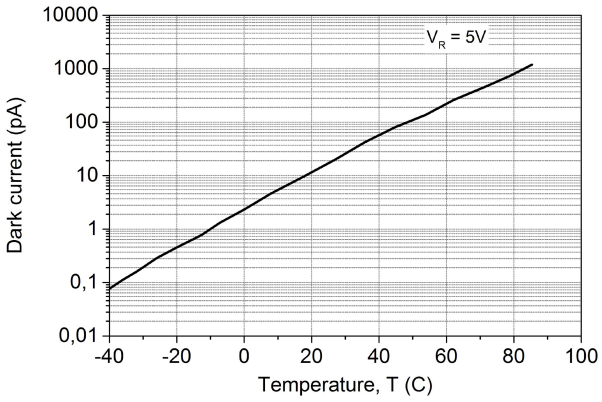
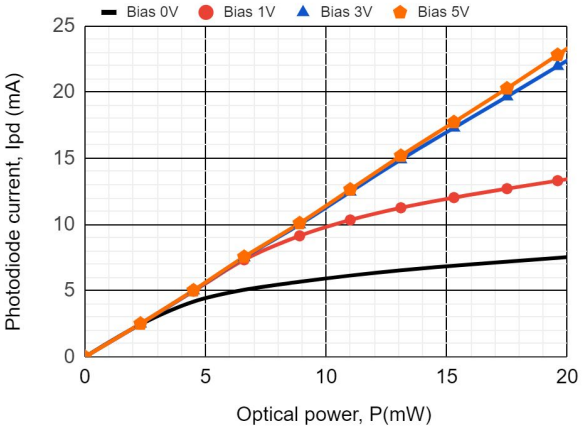
## CHARACTERISTICS (T = 25 °C)



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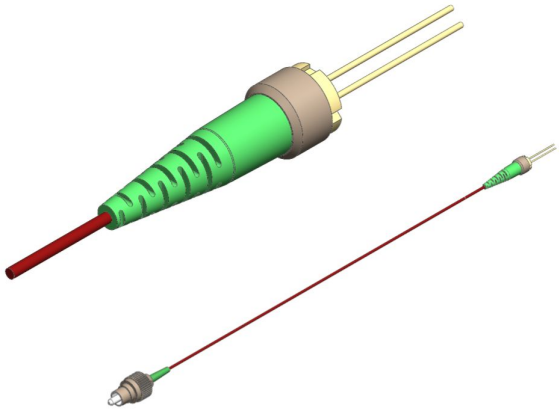
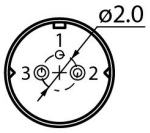


## PACKAGE U

BACK VIEW




PINOUT
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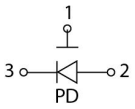
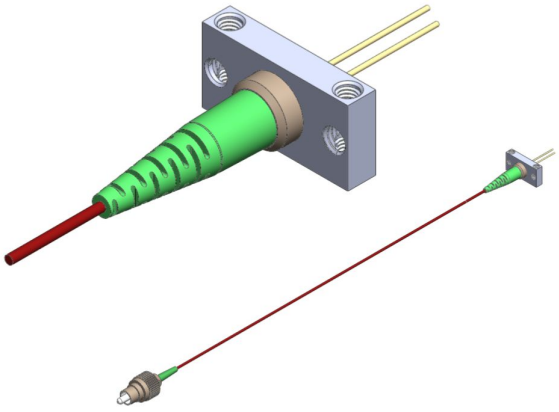


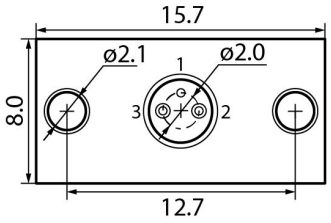

Download more information

Drawing | 3D model | Application Notes



## PACKAGE B

BACK VIEW

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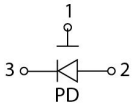


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Characteristics, data, materials and structures specified in this datasheet are subject to change without notice. Please refer to the latest specification before use of the products.

**Safety and handling cautions**

1. Avoid smashing and burning of the module. Avoid storing and using the module in conditions where water, organic solvents or aggressive acids or bases may contact the module or where there is a possibility of exposure to corrosive gases, explosive gases, dust, salinity or other harsh conditions. The module should be disposed as special industrial waste.

2. Exceeding absolute maximal ratings even for a short time can cause permanent damage of the module.

3. The module is sensitive to and can be broken by ESD (static electricity).

**Conflict Minerals Policy Statement**

LasersCom LLC achieves business objectives and customer needs with social responsibility. We do not support or contribute to the violence and human rights violations associated with the mining of conflict minerals coming from Conflict Regions according to US "Dodd-Frank Act". When possible, our suppliers' conflict mineral statements are reviewed. We do not directly purchase Conflict Minerals from any source and do not knowingly procure any parts and products containing Conflict Minerals from Conflict Regions.

**RoHS Compliance Statement**

Restriction of Hazardous Substances (RoHS) directive (Directive 2011/65/EC amended with Directive (EU) 2015/863) is the directive aimed at reducing the harmful environmental impact of waste electrical equipment by restricting the use of known dangerous substances. Based on information received from our supply sources, LasersCom LLC hereby states that the banned substances listed in the RoHS directive are not found in the parts and materials used above the threshold level listed other than exceptions approved by the European Commission.

**REACH Compliance Statement**

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation 1907/2006/EC that addresses the production and use of chemical substances, and their potential impacts on human health and the environment. Based on information received from our supply sources, LasersCom LLC hereby states compliance of the parts and materials used in manufacturing to REACH regulation. LasersCom LLC does not manufacture or import any substances or preparations as defined under REACH.