

# PDI-60-P10-4G-G

Preliminary

## OVERVIEW

PDI-60-P10-4G-G is the InGaAs PIN photodiode coupled to an optical fiber and packaged into a hermetic case

## MAIN FEATURES

- Maximum optical input power: 10 mW
- Broad spectral range 500 - 1700 nm
- 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 0.15 nA

## APPLICATIONS

- Optical fiber communication systems

## ORDERING INFORMATION

# PDI-60-P10-4G-G - X-X-X-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

### Pinout type

**7**: pinout #7

### Fiber type

**SM06**: SM, [Corning Hi-1060](#), furcation tubing Ø0.9 mm

**SMT**: SM, [Corning Titania-Clad](#), furcation tubing Ø0.9 mm, ultrasmall bending radius 2.5 mm

**SM1**: SM, G.657.A1, [Corning SMF-28 Ultra](#), furcation tubing Ø0.9 mm or **BSM1** Ø0.25mm

**SM3**: SM, G.657.B3, [Corning ClearCurve ZBL](#), furcation tubing Ø0.9 mm or **BSM3** Ø0.25mm

**MM5**: MM, [50/125.OM2](#), furcation tubing Ø0.9 mm

**MM6**: MM, [62.5/125.OM1](#), furcation tubing Ø0.9 mm

Other type: on request

### Connector type

**FA**: FC/APC (SM1, SM3, SMT)

**FU**: FC/UPC (SM1, SM3, SMT, MM5, MM6)

**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

Version 22.1

# PDI-60-P10-4G-G

## 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
Spectral range		500		1700	nm	
Responsivity	RM	0.95	1.05		A/W	$\lambda = 1550$ nm
	R50, R30	0.90	1.00			$\lambda = 1550$ nm
	R50, R30	0.85	0.95			$\lambda = 1310$ nm
	R50, R30	0.58	0.65			$\lambda = 980$ nm
	R50, R30	0.32	0.36			$\lambda = 850$ nm
	R50, R30	0.12	0.15			$\lambda = 660$ nm
	R50, R30	0.08	0.10			$\lambda = 520$ nm
Return loss	R50	45	50		dB	SM1, SM3, SMT, SM06
	R30	25	30			MM5, MM6
	RM	25	30			
Operating voltage	$V_{op}$		3	5		
Dark current	$I_d$		0.15	1	nA	$V_R = 5$ V
Total capacitance	$C_t$		0.4	0.6	pF	$V_R = 5$ V, $f = 1$ MHz
Bandwidth	BW	2	4		GHz	$V_R = 5$ V, $R_L = 50$ $\Omega$ , Small signal modulation
Forward voltage	$V_f$		0.6		V	$I_f = 1$ mA
Second Order Intermodulation Distortion	IMD2			-65	dBc	$P_0 = 1$ mW, OMI = 40%, $V_r = 5$ V, $R_L = 50$ Ohm, $\lambda = 1550$ nm
Third Order Intermodulation Distortion	IMD3			-75	dBc	$P_0 = 1$ mW, OMI = 40%, $V_r = 5$ V, $R_L = 50$ Ohm, $\lambda = 1550$ nm

# PDI-60-P10-4G-G

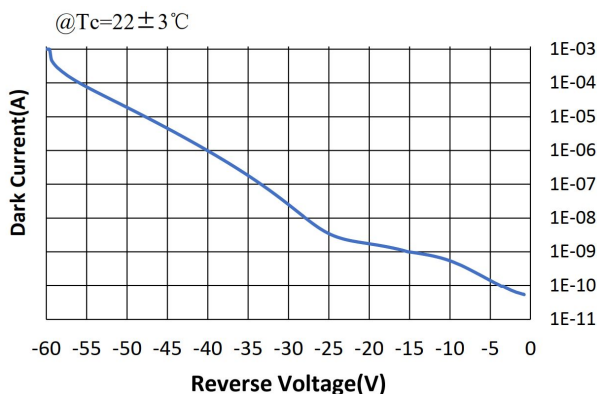


Figure 1 Dark Current vs. Reverse Voltage

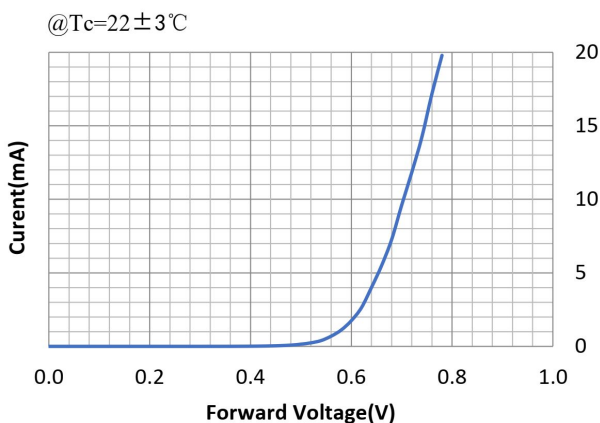


Figure 2 Current vs. Forward Voltage

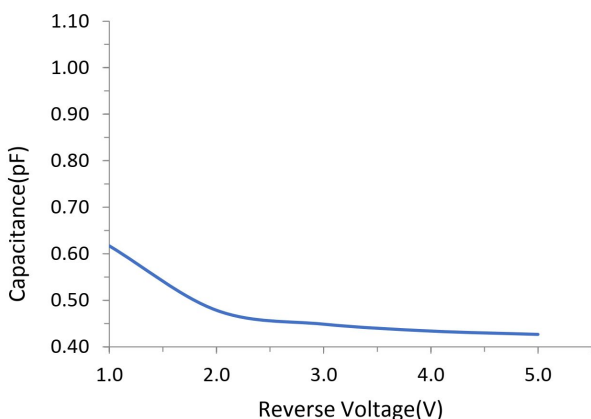
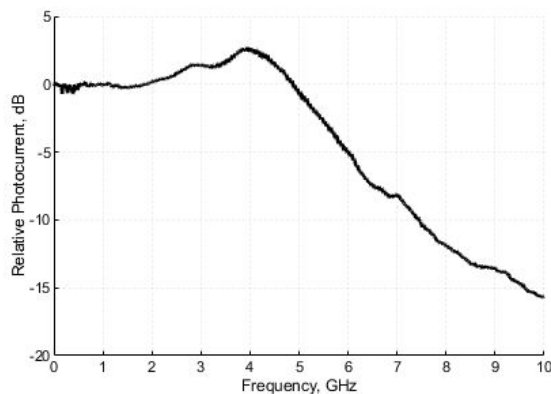
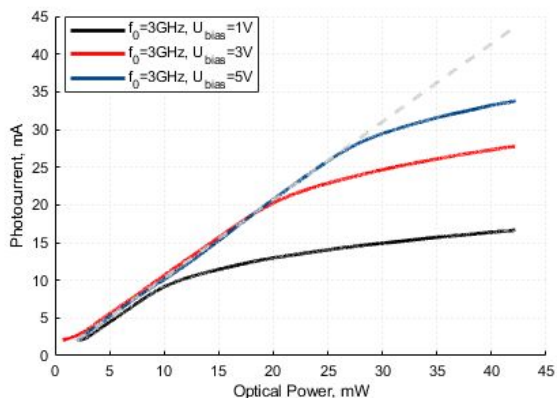
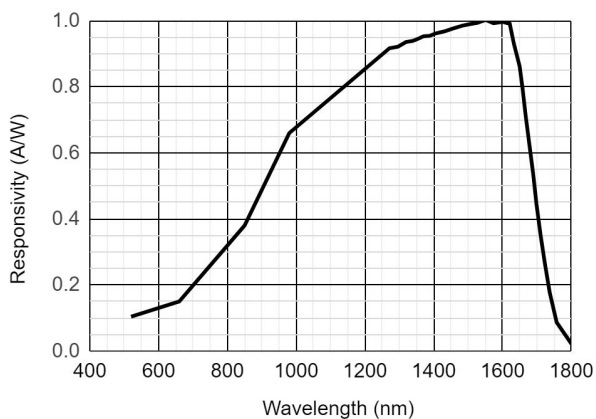
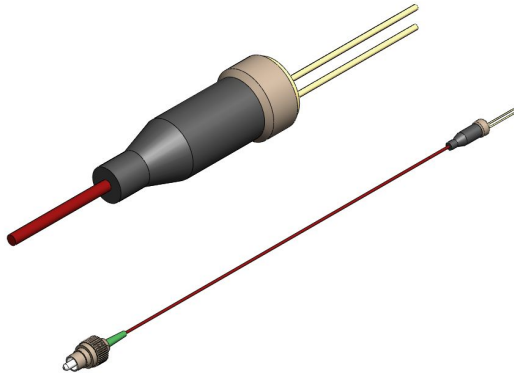


Figure 3 Capacitance vs. Reverse Voltage

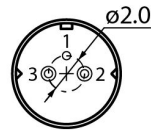


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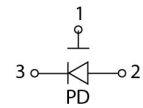


## PACKAGE U

BACK VIEW



PINOUT  
#7

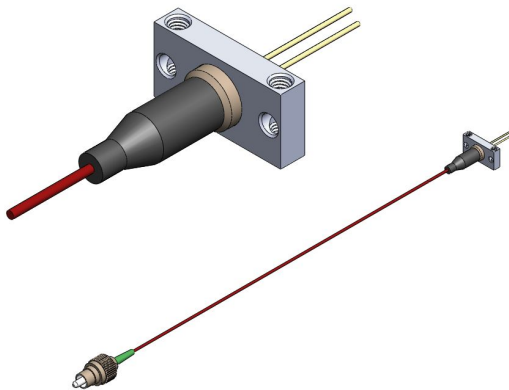


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Drawing

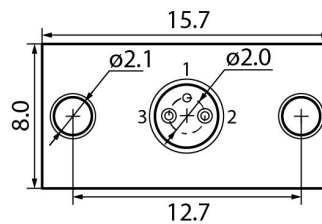
3D model

Application Notes

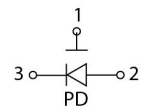


## PACKAGE B

BACK VIEW



PINOUT  
#7



Download more information

Drawing

3D model

Application Notes

# PDI-60-P10-4G-G

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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.