

## PDA-1300-3

### 3 GHz InGaAs PIN Photodiode Module for CATV/Wireless/SAT Receiver

#### DESCRIPTION

PDA-1300-3 InGaAs PIN Photodiode series are high quality 3 GHz analog photodetectors designed for CATV, CDMA / W-CDMA, and Satellite receiver applications. These coaxial modules are optically aligned to optimize performance and balance the parameters of responsivity, distortion and back reflection.

#### FEATURES

##### Electro-Optical

- Low Inter-modulation Distortion
- High Responsivity
- Low Back Reflection

##### Packaging

- Single mode 900  $\mu\text{m}$  fiber with or without a connector
- Single mode 250  $\mu\text{m}$  fiber with or without a connector

#### ABSOLUTE MAXIMUM RATINGS

Stress in excess of the absolute maximum rating can cause permanent damage to the device. These are absolute stress rating only. Functional operation of the device is not implied at these or any other conditions in excess of these given in the operational sections of the datasheet. Exposure to absolute ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Forward Current			10	mA
Reverse Current			10	mA
Reverse Voltage			25	V
Power Dissipation	$P_{DISS}$		100	mW
Soldering Temperature	$T_{solder}$		260/10	$^{\circ}\text{C}/\text{sec}$
Operating Temperature Range	$T_{op}$	-40	85	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-40	85	$^{\circ}\text{C}$

#### CHARACTERISTICS

ELECTRICAL AND OPTICAL CHARACTERISTICS ( $T_C = 25^{\circ}\text{C}$ , $V_R = 12\text{V}$ )						
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
R	Responsivity	$\lambda = 1300\text{nm}$	0.8			A/W
		$\lambda = 1550\text{nm}$	0.85			
IM2	2 <sup>nd</sup> Order Intermodulation Modulation	Note (1*)			-70	dBc
BR	Back Reflection	$\lambda = 1550\text{ nm}$			-40	dB
$I_{dark}$	Dark Current	$V_R = 5\text{V}$			1	nA
C	Capacitance	$f = 1\text{MHz}$ , Case Ground, $V_R = 5\text{V}$			0.8	pF
BW	Bandwidth	3 dB down, $R_L = 50\Omega$	3.0			GHz
	Fiber Length		1.0		1.5	m

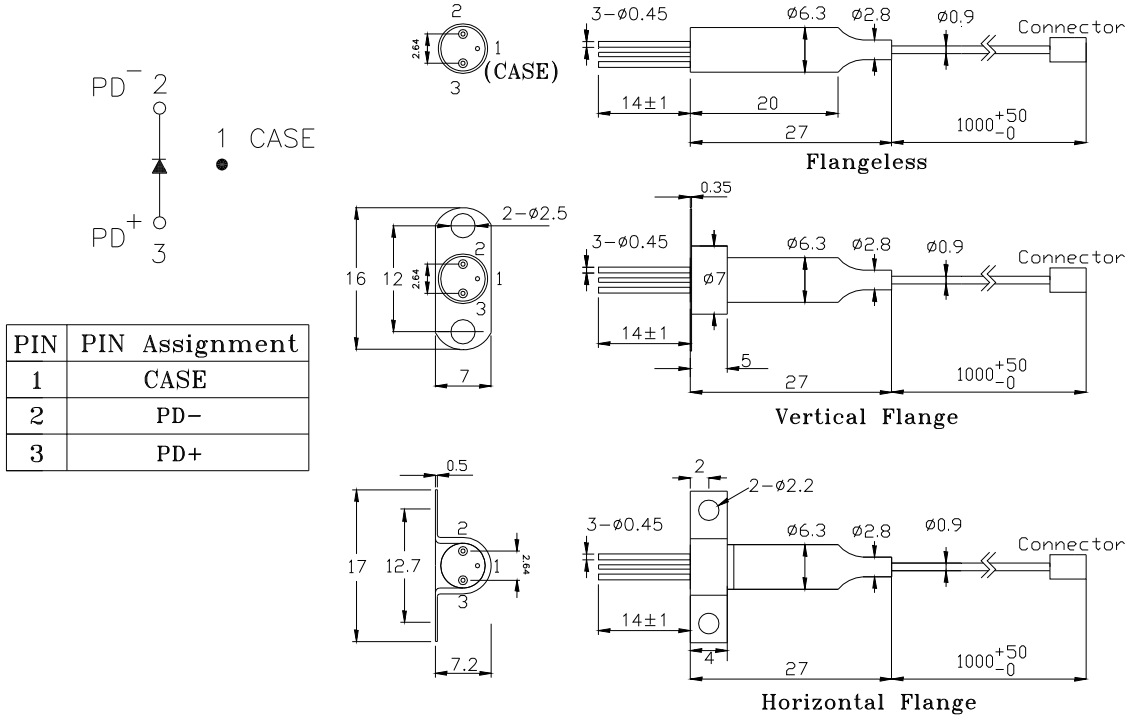
1\*. IM2 measured at  $V_R = 12\text{V}$ ,  $\lambda = 1550\text{nm}$ ,  $P_{avg} = 0\text{dBm}$ ,  $MI = 0.7$ ,  $R_{LOAD} = 50\text{ ohm}$ ,  $f_1 = 400\text{ MHz}$ ,  $f_2 = 450\text{MHz}$

**PRECAUTIONS for USE**

ESD protection is imperative. Use of grounding straps, anti-static mats, and other ESD protective equipment is recommended when handling or testing an InGaAs PIN or any other junction photodiodes.

Fiber pigtailed should be handled with less than 10N pull and with a bending radius greater than 30 mm.

**MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT**



**Note:** 1. Specifications subject to change without notice.

2. Other PIN assignment is available upon request.

**ORDER INFORMATION**

Part No.: P D A - 1 3 0  - 3 -

Code	Fiber Buffer
0	900 μm
1	250 μm

Code	Flange
V	Vertical
H	Horizontal
X	No Flange

Code	Connector Type
X	No Connector
SA	SC/APC
FA	FC/APC

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Revision History

Version	Subject	Release Date
1.0	Initial datasheet	2007/1/1
2.0	Modify mechanical dimension	2009/4/9