

### FEATURES

- Excellent Linearity
- High Responsivity
- Low Dark Current
- Dielectric Passivation
- 100% Purge Burn-in
- Planar Structure

### APPLICATIONS

- Analog Optical Receivers to 4GHz
- Forward Path CATV Optical Receivers
- FTTH Receivers



PD070-HL1-5xx  
SC Receptacle



PD070-HL1-5xx  
ST Receptacle



PD070-HL1-3xx  
SC/APC Pigtail



PD070-HL1-5xx  
FC Receptacle

### PRODUCT DESCRIPTION

The PD070-HL1 is a high performance, low capacitance InGaAs photodiode with a photosensitive region 70 $\mu$ m in diameter. It has been specifically designed for low noise, high linearity analog optical receivers operating to 4GHz.

Planar semiconductor design and dielectric passivation provide low noise performance.

Reliability is assured by hermetic sealing and 100% purge burn-in (200°C, 15 hours, Vr = 20V). The device can be either pigtailed with SC, FC or ST connectors (UPC or APC) or mounted in an SC, ST or FC receptacle. Custom packages are also available.

### ELECTRICAL CHARACTERISTICS

Table 1: Electrical Specifications

PARAMETER	MIN	TYP	MAX	UNIT
Dark Current ( $I_D$ )	-	0.1	1.0	nA
Capacitance <sup>(1)</sup>	-	0.5	0.6	pF
Responsivity at 1310nm	0.80	0.90	-	A/W
Responsivity at 1550nm	0.85	0.95	-	A/W
3dB bandwidth (75 $\Omega$ bias)	3300	4000	-	MHz
Single Second Order (SSO) <sup>(2)</sup>	-	-75	-70	dBc
Single Triple Beat (STB) <sup>(2)</sup>	-	-85	-80	dBc
Optical Return Loss (Pigtail using SMF-28)	50	55	-	dB
Optical Return Loss (Receptacle, APC connector)	40	45	-	dB
Operating voltage	-	5	20	V

<sup>(1)</sup> 5V bias voltage

<sup>(2)</sup> SSO and STB measurements to 860MHz using 2 and 3 tones at 40% OMI, 0dBm optical input, 1310nm, 12V bias.

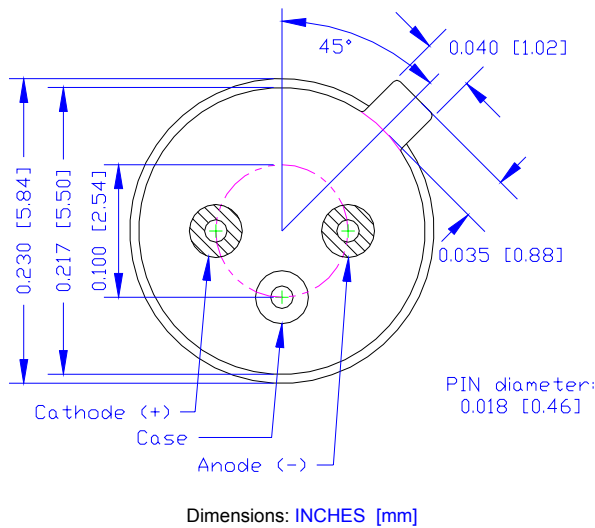
# PD070-HL1

**Table 2: Absolute Maximum Ratings**

PARAMETER	MIN	MAX	UNIT
Forward Current	-	5	mA
Reverse Current	-	250	µA
Reverse Voltage	-	30	V
Optical input power	-	5	mW
Operating Case Temperature	-40	+85	°C
Storage Temperature	-40	+85	°C
Soldering temperature (10 seconds)	-	+250	°C

Stresses in excess of the absolute ratings may cause permanent damage. Functional operation is not implied under these conditions. Exposure to absolute ratings for extended periods of time may adversely affect reliability.

## PIN LOCATIONS – Standard



## ORDERING INFORMATION

**Table 3: Standard**

Part Number	Options
PD070-HL1-300	SC/APC pigtail, 1 meter SMF-28 fiber, 3 pin
PD070-HL1-520	SC/APC receptacle, 3 pin

**Table 4: Custom**

Part Number	Options
PD070-HL1-3xx	Number of pins: 2, 3 Fiber length: 0.5 meter, 1.0 meter Fiber type: Single mode (SMF-28) or custom supplied Connector Type: SC, ST or FC. APC or UPC
PD070-HL1-5xx	Number of pins: 2, 3 Connector Type: SC, ST or FC. Aligned for APC or UPC

Please contact Anadigics for the specific part number and pinout that suits your needs

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