

## InGaAs PIN PHOTODIODES

### Features

- $\varnothing 75\mu\text{m}$  active diameter.
- High speed response.
- Wide bandwidth from 1000~1600 nm.
- High responsivity at 1310 nm.
- Low dark current.
- TO-46 hermetic packaging with a lens cap.

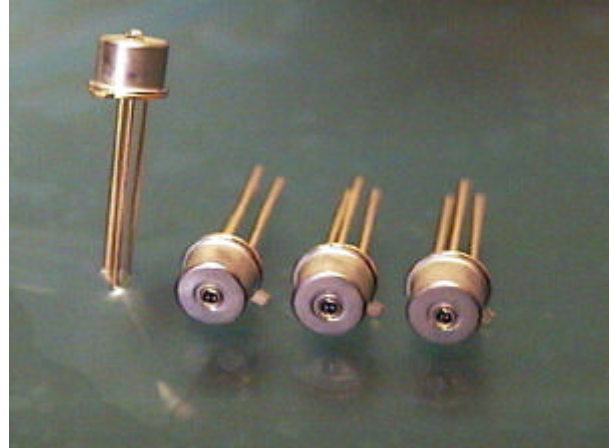
### Applications

- Optical communication system
  - Optical data links
  - Optical LANs
  - Subscriber loops

### Handling and Safety Precautions

Anti-static protection, such as ionized air blowers or grounded wrist straps with a 1 mega series resistor, should be used at all times when handling laser diodes. In addition, soldering irons should be well grounded.

Overheating caused by soldering of the leads of a laser diode must be prevented. Recommend soldering iron temperature and maximum exposure time are below 260 °C and 10 seconds.



### Description

The MCD-3P4C-312 is InGaAs PIN photodiode which has a sensitive area of  $\varnothing 75\mu\text{m}$ . The small photosensitive region will enable operation at low dark current and low capacitance, and yet large enough to allow efficient coupling to multi-mode fiber.

This product is designed for high speed and low noise applications and is suited to receive the light source from 1000~1600 nm.

The MCD-3P4C-312 is compatible with industry standard wave or hand solder processes.

### Unity Opto Technology Co., Ltd.

10 F, No. 88-8, Sec. 1, Kuang-Fu Rd.,  
Sanchung City, 241 Taipei, Taiwan

### For prototype and Production call

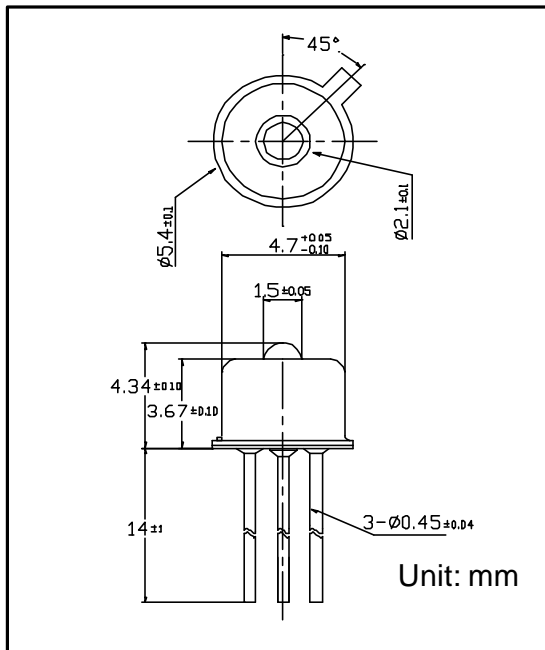
TEL: 886 - 2 -2999 - 3988  
FAX: 886 - 2 -2999 - 3910  
REV.:A1 7/17/2002

.. Absolute Maximum Ratings (Tc = 25 °C)

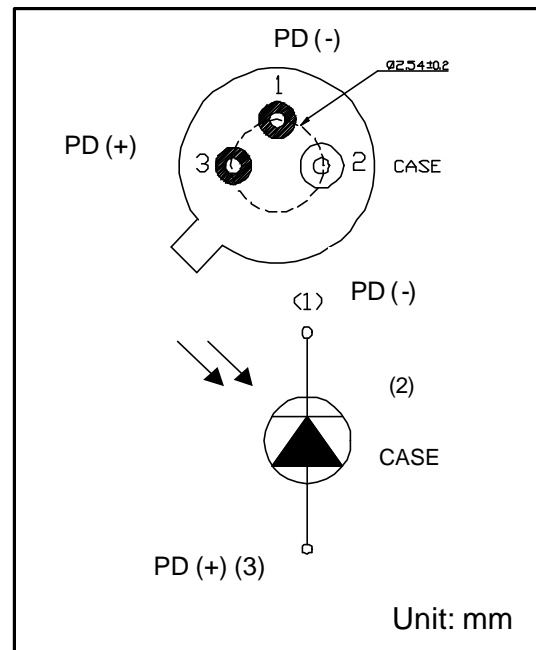
| Parameter                  | Symbol           | Rated Value | Unit |
|----------------------------|------------------|-------------|------|
| Reverse Voltage            | V                | 20          | V    |
| Forward Current            | I <sub>F</sub>   | 2           | mA   |
| Reverse Current            | I <sub>R</sub>   | 1           | mA   |
| Operating case temperature | T <sub>OP</sub>  | - 40 to +85 | °C   |
| Storage temperature        | T <sub>STG</sub> | - 40 to +85 | °C   |

.. Optical & Electrical Characteristics (Tc = 25 °C)

| Parameter       | Symbol         | Test Conditions              | Min. | Typ. | Max. | Unit |
|-----------------|----------------|------------------------------|------|------|------|------|
| Active Area     |                |                              | -    | 75   | -    | μm   |
| Detection Range |                |                              | 1000 | 1310 | 1600 | nm   |
| Responsivity    | R              | V <sub>R</sub> =5V, λ=1300nm | 0.75 | 0.85 | -    | A/W  |
| Dark Current    | I <sub>d</sub> | V <sub>R</sub> =5V           | -    | -    | 1    | nA   |
| Capacitance     | C              | V <sub>R</sub> =5V, f=1MHz   | -    | 0.75 | 0.9  | pF   |
| Bandwidth       | BW             | V <sub>R</sub> =5V, P=1mW    | 2    | -    | -    | GHz  |



**Package Dimensions**



**Pin Connections ( Bottom View )**

NOTE: Specifications are subjected to change without notice.

**Unity Opto Technology Co., Ltd.**

10 F, No. 88-8, Sec. 1, Kuang-Fu Rd.,  
Sanchung City, 241 Taipei, Taiwan

**For prototype and Production call**

TEL: 886 - 2 -2999 - 3988  
FAX: 886 - 2 -2999 - 3910  
REV.:A1 7/17/2002