

---

# Connectorized PIN Photodiodes

## Technical Data

### Features

- **Industry Standard Connectors—FC, ST® and SC**
- **1200 nm to 1650 nm Wavelength**
- **High Responsivity**
- **High Reliability Planar InGaAs Photodiode**
- **Range of Flange Options**
- **Low Dark Current**
- **-40°C to +85°C Operation**

### Applications

- **Optical Data Communication Receivers**
- **O-E Convertors**
- **LANS**
- **FDDI Networks**
- **Instrumentation**
- **FITL**
- **Single and Multimode Fiber Communications Systems**

### Description

The PDT range of products includes a variety of connectorized PIN photodiodes designed for wide operating temperature, low cost applications such as fiber in the loop. The planar InGaAs photodiodes are manufactured using our MOVPE growth technology and give low leakage, high responsivity performance with excellent reliability.

The construction of the devices includes a hermetically sealed photodiode and is designed to be compatible with the environmental requirements of the Bellcore TA-TSY-000983 document.

The product range includes a variety of pinout, connector type

---

### PDT0X1X

---



and flange mounting options, designed to match the majority of offerings in the marketplace. If the specific arrangement or performance you require is not listed, please contact Hewlett-Packard. Highly flexible design and manufacturing processes allow both physical and electro-optic customization to suit your needs.

ST® is a Registered Trademark of AT&T.

**ESD WARNING: NORMAL HANDLING PRECAUTIONS SHOULD BE TAKEN TO AVOID STATIC DISCHARGE.**

## PDT Connectorized PIN Photodiode Specifications

### Absolute Maximum Ratings

Absolute maximum limits mean that no catastrophic damage will occur if the product is subjected to these ratings for short periods, provided each limiting parameter is in isolation and all other parameters have values within the performance specification. It should not be assumed that limiting values of more than one parameter can be applied to the product at the same time.

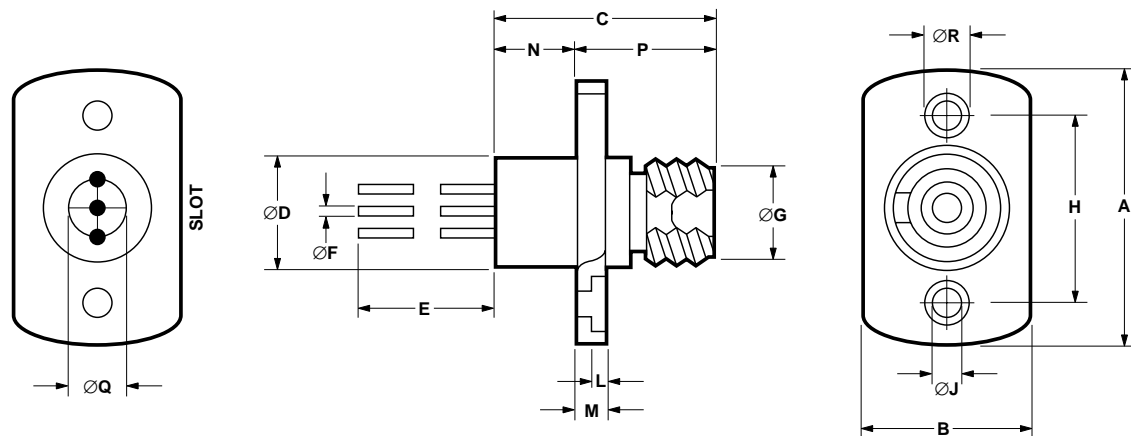
| Parameter             | Symbol         | Minimum | Maximum | Units |
|-----------------------|----------------|---------|---------|-------|
| Reverse Voltage       | V <sub>r</sub> | –       | 20      | V     |
| Reverse Current       | I <sub>r</sub> | –       | 12      | mA    |
| Forward Voltage       | V <sub>f</sub> | –       | 1       | V     |
| Forward Current       | I <sub>f</sub> | –       | 5       | mA    |
| Power Dissipation     | –              | –       | 50      | mW    |
| Operating Temperature | T <sub>c</sub> | -40     | 85      | °C    |
| Storage Temperature   | T <sub>s</sub> | -40     | 85      | °C    |
| Soldering–10 seconds  | –              | –       | 260     | °C    |

### Performance Specification

| Parameter                 | Symbol                         | Test Conditions:<br>Unless Otherwise Stated<br>V <sub>r</sub> = 5 V, T <sub>c</sub> = 25°C | PDT031X |      | PDT041X |      | Units |
|---------------------------|--------------------------------|--|---------|------|---------|------|-------|
|                           |                                |  | Min.    | Max. | Min.    | Max. |       |
| Dark Current              | I <sub>d</sub>                 |  | –       | 1    | –       | 1    | nA    |
|                           |                                | T <sub>c</sub> = 85°C  | –       | 50   | –       | 50   | nA    |
| Reverse Breakdown Voltage | V <sub>br</sub>                | I <sub>r</sub> = 10 μA   | 35      | –    | 35      | –    | V     |
| Capacitance               | C                              | 1 MHz  | –       | 1.1  | –       | 1.7  | pF    |
| Responsivity              | R                              | λ = 1300 nm  | 0.7     | –    | 0.7     | –    | A/W   |
| Operating Wavelength      | λ                              | 80% points   | 1200    | 1650 | 1200    | 1650 | nm    |
| Rise/Fall Times           | τ <sub>r</sub> /τ <sub>f</sub> | 10% to 90%   | –       | 0.25 | –       | 0.5  | nS    |

## PDT Mechanical Outline Options

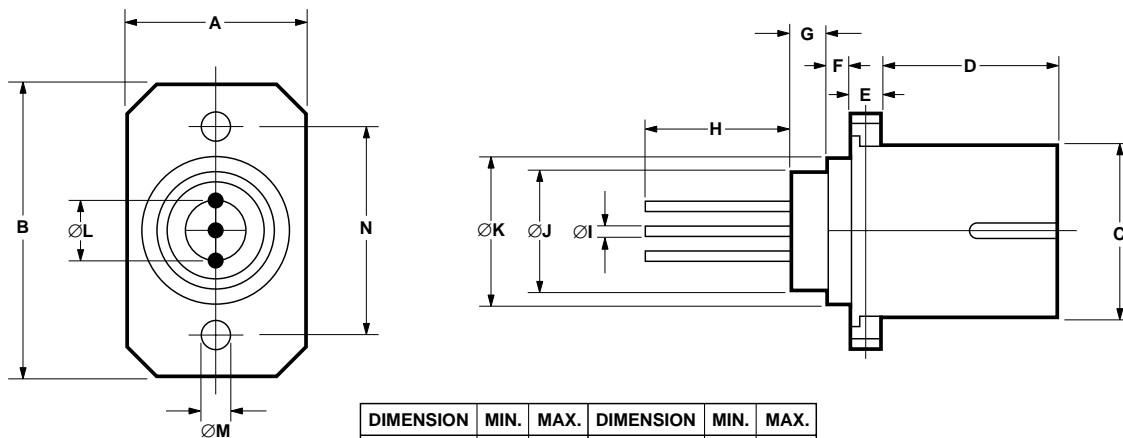
### PDT0X1X-FC-A



| DIMENSION       | MIN.      | MAX.  | DIMENSION       | MIN. | MAX. |
|-----------------|-----------|-------|-----------------|------|------|
| A               | -         | 19.5  | $\varnothing J$ | 2.08 | 2.32 |
| B               | -         | 9.5   | L               | -    | 1.65 |
| C               | -         | 15    | M               | -    | 2.2  |
| $\varnothing D$ | -         | 9.1   | N               | -    | 6.8  |
| E               | 12.0      | -     | P               | -    | 8.2  |
| $\varnothing F$ | 0.41      | 0.47  | $\varnothing Q$ | 2.54 | NOM. |
| $\varnothing G$ | M8 X 0.75 | -     | $\varnothing R$ | -    | 4.2  |
| H               | 13.35     | 13.55 |                 |      |      |

ALL DIMENSIONS IN mm.

### PDT0X1X-SC-A Plastic Housing

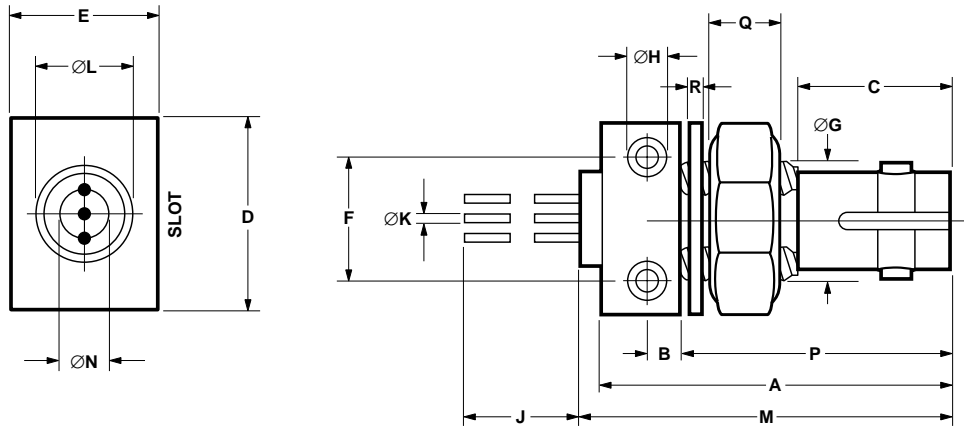


| DIMENSION | MIN. | MAX. | DIMENSION       | MIN. | MAX. |
|-----------|------|------|-----------------|------|------|
| A         | -    | 9.5  | H               | 12.0 | -    |
| B         | -    | 23.0 | $\varnothing I$ | 0.41 | 0.47 |
| C         | -    | 13.5 | $\varnothing J$ | 6.9  | 7.0  |
| D         | -    | 12.5 | $\varnothing K$ | -    | 8.6  |
| E         | -    | 3.1  | $\varnothing L$ | 2.54 | NOM. |
| F         | -    | 2.4  | $\varnothing M$ | 2.2  | 2.4  |
| G         | -    | 3.9  | N               | 17.5 | 18.5 |

ALL DIMENSIONS IN mm.

## PDT Mechanical Outline Options

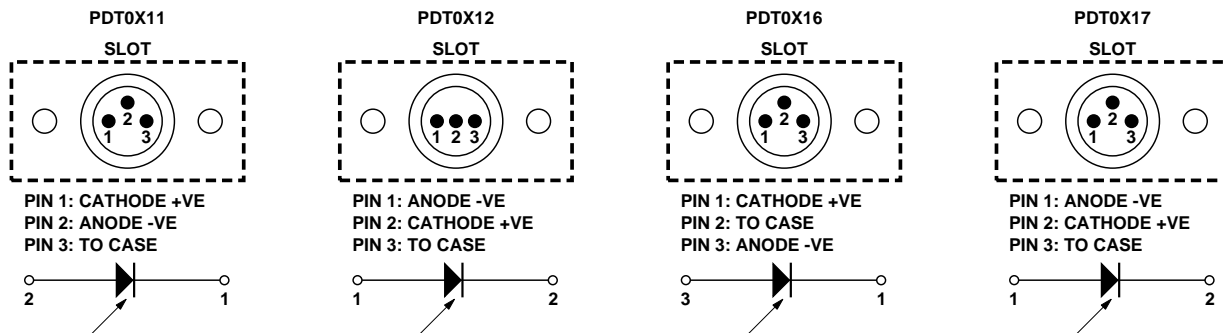
### PDT1X4X-ST-F



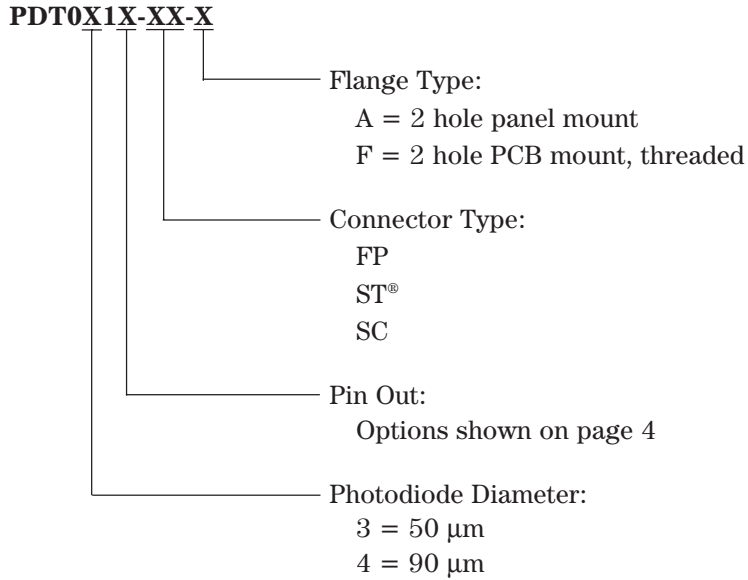
| DIMENSION | MIN.              | MAX. | DIMENSION | MIN. | MAX. |
|-----------|-------------------|------|-----------|------|------|
| A         | -                 | 21.0 | J         | 12.0 | -    |
| B         | 1.8               | 2.2  | ØK        | 0.41 | 0.47 |
| C         | -                 | 9.8  | ØL        | -    | 7.0  |
| D         | -                 | 12.9 | M         | -    | 22.5 |
| E         | -                 | 9.7  | ØN        | 2.54 | NOM. |
| F         | 9.43              | 9.63 | P         | 14.9 | 15.3 |
| G         | 3/8-32<br>UNEF-2A |      | Q         | 2.54 | NOM. |
| H         | 2-56<br>UNC-2B    |      | R         | 0.50 | NOM. |

ALL DIMENSIONS IN mm.

## PDT Electrical Pinouts



## Ordering Information



### Preferred Options:

PDT0311-FC-A  
PDT0312-FC-A  
PDT0411-FC-A  
PDT0411-ST-F  
PDT0412-FC-A  
PDT0412-ST-F  
PDT0417-FC-A

Additional copies are available to meet your specific needs. Please contact your local representative for details.

## Handling Precautions

1. The PDT0X1X can be damaged by current surges of overvoltage. Power supply transient precautions should be taken.
2. Normal handling precautions for electrostatic sensitive devices should be taken.

ST® is a Registered Trademark of AT&T.