



## PF-Series

## Large Area InGaAs Photodiode Series

### Description

PF series detectors consist of InGaAs PIN photodiode with sensitive area coupled with FC connection by lenses. PF511 is of the high response within 1.0 - 1.65  $\mu\text{m}$ . Diode structure of PF521 type has been improved so that spectral response can extend to 0.65 - 1.65  $\mu\text{m}$ . Internal optical attenuator of PF512 and PF513 is used to measure higher optical power. The highest detectable optical power of PF512 and PF513 can get to 25dBm and 30dBm, respectively.

PF series are mostly applied for optical measurement. User can select appropriate units according to needed wavelength and linear range.



### Key Features

- High Response within 1.0 - 1.65  $\mu\text{m}$
- Low Dark Current
- Planar Structure
- Broad Spectral Response Range 0.65 - 1.65  $\mu\text{m}$
- Broad Dynamic Range
- High Reliability
- FC Connection, Firm Coaxial Package

### Applications

- Optical Measurement
- Optical Detection
- Online Measuring of Optical Fiber Cable
- Output Test for Optical Amplifier
- Data Transmission

### Absolute Maximum Rating

Forward Current	10mA
Optical Current	10mA
Reverse Voltage	25V
Power Waste	100mW
Operating Temp.	-40°C ~ +85°C
Storage Temp.	-40°C ~ +85°C
Jointing Condition	260°C for 10 Seconds

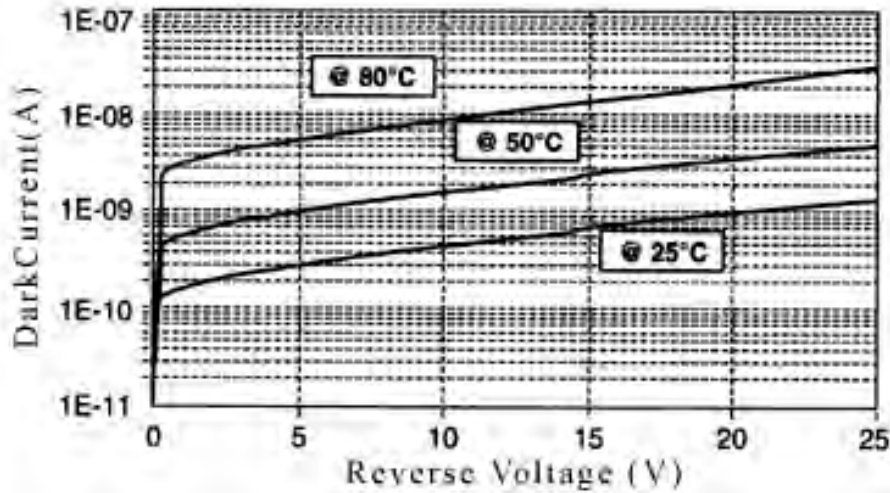
### Specifications (25°C)

Type	PF511	PF512	PF513	PF521	Units
Wavelength Range	1.0 ~ 1.65	1.0 ~ 1.65	1.0 ~ 1.65	0.5 ~ 1.7	$\mu\text{m}$
Linear Range (0V)	-70 ~ +10	-55 ~ +25	-40 ~ +30	-70 ~ +10	dBm
Responsibility (0V)	$R_{1310\text{nm}}$ : $\geq 0.80$ $R_{1550\text{nm}}$ : $\geq 0.85$	0.001 ~ 0.003  ( $\lambda$ : 1.31 $\mu\text{m}$ , 1.55 $\mu\text{m}$ )	0.001 ~ 0.003  ( $\lambda$ : 1.31 $\mu\text{m}$ , 1.55 $\mu\text{m}$ )	$R_{850\text{nm}}$ : 0.20  $R_{1310\text{nm}}$ : 0.80  $R_{1550\text{nm}}$ : 0.85	A/W
Dark Current (-5V)	< 5				nA
Capacitance (-5V)	$\leq 12$				pF
Photo-Sensitive Diameter	300				$\mu\text{m}$
Inserting Deviation	$\pm 0.1$				dB

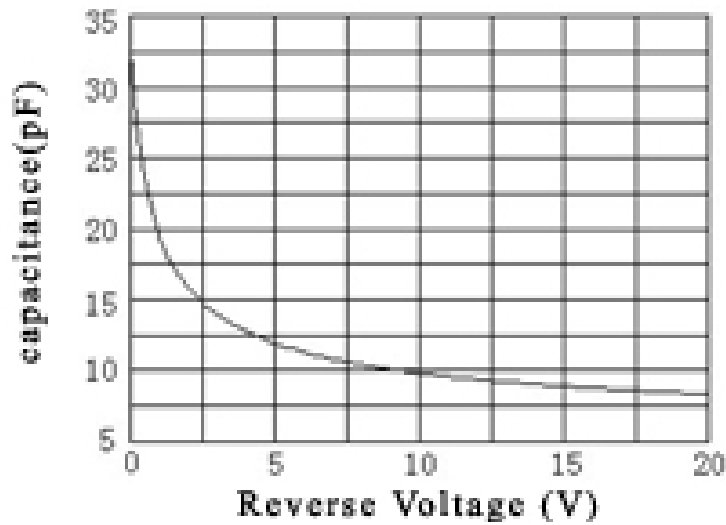


Operating Voltage	0 ~ -10	V
Inserting Lifetime	$10^5$	

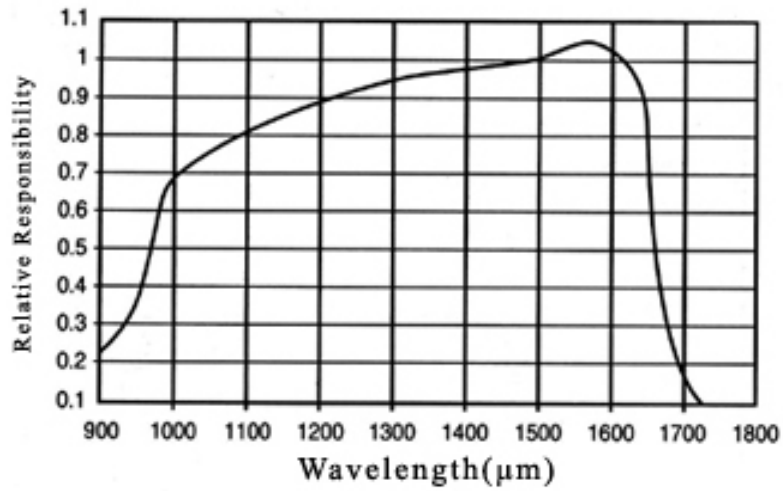
### Typical Performance



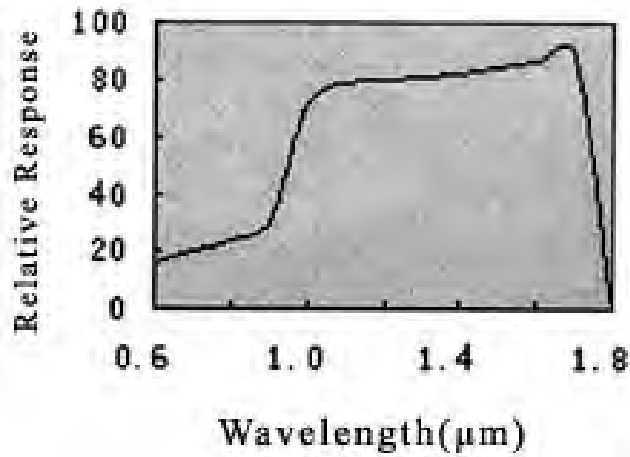
$I_d - V_r$  Characteristic Curve



C-V Curve

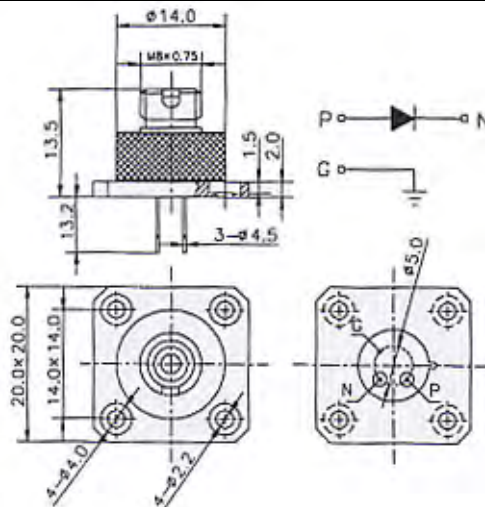


Typical Spectral Response (PF511)



Typical Spectral Response (PF511)

## Mechanical Dimensions





## Safety Information

1. Protection of the product should abide by precautions of electrostatic sensitive organ.
2. When sealing pins soldering irons should be grounded to avoid breakdown.
3. Pins should avoid bend or twist which will bring break or damage.
4. The ferrule of connector is easy to be stained. If necessary, it could be cleaned by alcohol before using to keep high response.

## Order possibilities

### Sensitive Area

- 1: Ø 50µm
- 2: Ø 75µm
- 3: Ø 300µm
- 4: Ø 1mm
- 5: Ø 2mm
- 6: Ø 3mm
- 7: 3mm x 4mm
- 8: 500µm

### Wavelength Range

- 1: 1µm ~ 1.65µm
- 2: 0.5µm ~ 1.7µm

### Package Style

- 00: FC with ball lens
- 01: FC with GRIN lens
- 02: FC with universal adaptor and ball lens
- 03: FC with universal adaptor and window cap
- 04: Large Area FC package

### Input Power

- 1: -70 ~ 0dBm
- 2: -70 ~ +3dBm
- 3: -70 ~ +10dBm
- 4: -50 ~ +20dBm
- 5: -40 ~ +30dBm