

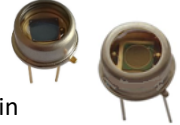


## PDT-F05A4200-SIx

### 4.2mm Silicon PIN Photodiode in TO-5 Package

#### Description

The Lasermate PDT-F05A4200-SIx is a high reliability, low dark current, 4.2mm diameter active area Silicon PIN photodiode with high sensitivity from 400nm to 1100nm spectral range. The detector is housed in hermetic TO-5 package.



#### Features

- High reliability
- Low dark current
- Spectral range 400nm to 1100nm
- Ultra large active diameter 4.2x4.2mm
- 980nm responsivity up to 0.67mA/mW
- Hermetic TO-5 can package

#### Applications

- Optical sensor
- Optical power meter
- Spectrophotometry/CT scan
- Industrial automatic control
- IR/laser light monitoring
- Fluorescence detector
- Medical equipment

#### Product Overview

The following table lists the available part numbers, as well as the package type of each of the part numbers.

Part Number	Package
PDT-F05A4200-SIA	TO-5 Can with Flat Window, Dia. 8.1mm Nickel Cap
PDT-F05A4200-SIB	TO-5 Can with Flat Window, Dia. 8.26mm Nickel Cap

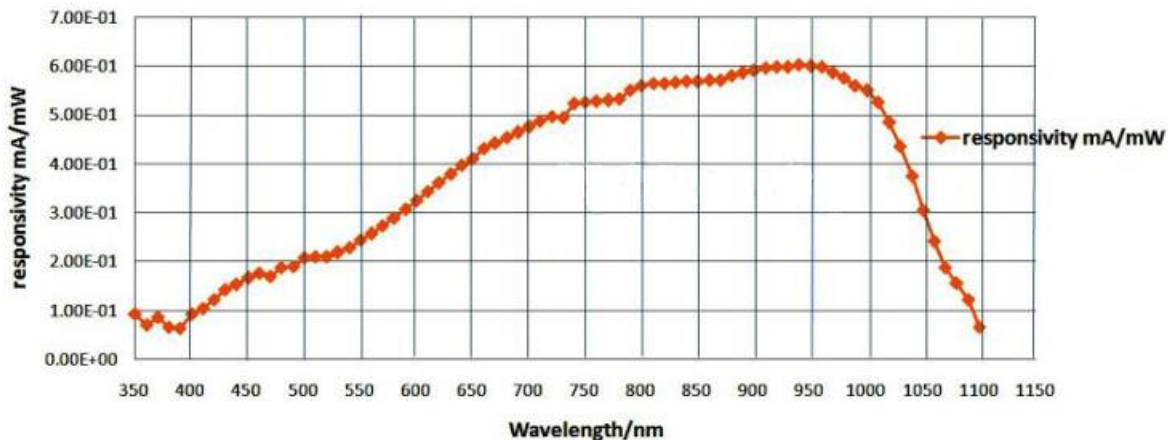


### Specifications

Absolute Maximum Ratings				
Parameters	Symbol	Value	Unit	Conditions
Operating temperature	T <sub>op</sub>	-45 to 85	°C	
Storage temperature	T <sub>stg</sub>	-45 to 100	°C	
Forward current	I <sub>F</sub>	13	mA	
Reverse voltage	V <sub>r</sub>	20	V	
Soldering temperature	T <sub>sol</sub>	260	°C	10 seconds

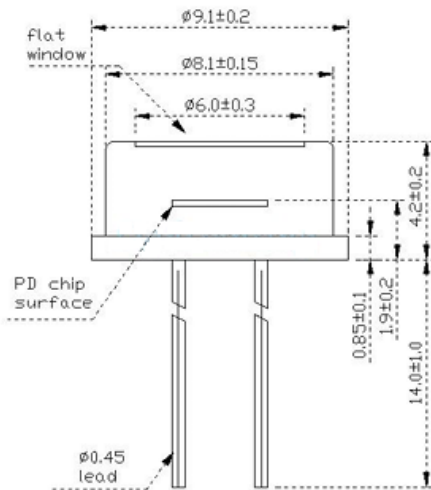
Electro-Optical Characteristics (T=25°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Response spectrum	λ	400		1100	nm	
Active diameter	∅		4.2x4.2		mm	
Responsivity	Re		0.1		mA/mW	V <sub>r</sub> =5V, λ=405nm
			0.40			V <sub>r</sub> =5V, λ=650nm
			0.55			V <sub>r</sub> =5V, λ=850nm
			0.67			V <sub>r</sub> =5V, λ=980nm
			0.29			V <sub>r</sub> =5V, λ=1064nm
Dark current	I <sub>d</sub>		0.2		nA	V <sub>r</sub> =0V
			1			V <sub>r</sub> =5V
Response time	T <sub>r</sub>		100		ns	R <sub>L</sub> =50Ω, V <sub>r</sub> =5V
Junction capacitance	C <sub>j</sub>		200		pF	V <sub>r</sub> =0V, f=1MHz
			40			V <sub>r</sub> =5V, f=1MHz
Reverse breakdown voltage	V <sub>BR</sub>		60		V	I <sub>R</sub> =10uA
Saturated optical power	P <sub>s</sub>		25		mW	V <sub>r</sub> =5V
Operating voltage	V <sub>R</sub>		0-15		V	
Shunt resistance	R <sub>sh</sub>		50		GΩ	V <sub>r</sub> =10mV
Package	Hermetic TO-5 can					

### Typical Characteristics

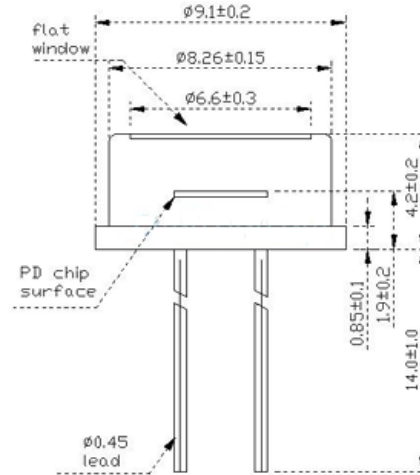


**Outline Dimensions (unit: mm)**

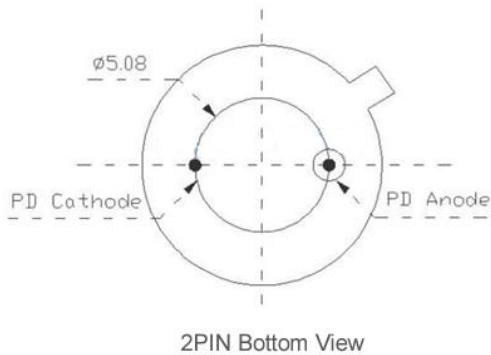
**PDT-F05A4200-SIA:**



**PDT-F05A4200-SIB:**



**Pin Configuration**



**Notes:**

1. The suitable ESD protecting measures are recommended in storage, transportation, and usage.
2. Specifications are subject to change without notice.