



InGaAs PIN Photodiode (2.2- μm Wavelength Cutoff)

PIN1000-22-T0: $\varnothing 950 \mu\text{m}$ Detection Aperture

PIN2000-22-T0: $\varnothing 1850 \mu\text{m}$ Detection Aperture

FEATURES

- Highly Reliable Planar Device
- Low Leakage Current
- High Responsivity in 1.2 - 2.2 μm Spectral Range
- Low Stray Absorption

APPLICATIONS

- Power Monitoring
- Spectral Analysis
- Light Detection and Ranging (LIDAR)
- Remote Temperature Sensors
- Ice/Slush/Moisture Detection
- Gas Leak Detection
- Single-Photodiode SWIR Camera
- Covert IR Sensing



GENERAL DESCRIPTIONS

MODEL NO.		PIN1000-22-T0	PIN2000-22-T0
PARAMETER	UNIT	VALUE	VALUE
¹ Spectral Range	μm	1.2 – 2.2	
² Aperture Size	μm	$\varnothing 950$	$\varnothing 1850$
Package Type	---	TO-46 / 3P	TO-39 / 3P

¹Wavelength range in which the photodiode has a quantum efficiency higher than 40% at 23°C.

²Standard apertures of $\varnothing 500 \mu\text{m}$ with TO-46 package is also available. Please contact us for further information.



SPECIFICATIONS ($T_{\text{AMB}} = 23^{\circ}\text{C}$)

Model No.		PIN1000-22-T0			PIN2000-22-T0		
¹ Spectral Range (μm)		1.2 – 2.2					
Parameter	Unit	Min.	Typ.	Max.	Min.	Typ.	Max.
Dark Current @ -0.5 V	μA	---	2	5	---	5	12
Shunt Resistance @ -10 mV	$\text{k}\Omega$	25	50	---	15	25	---
Capacitance @ 1 MHz	pF						
@ 0 V		---	250	500	---	2000	2800
@ -0.5 V		---	150	300	---	1500	2100
3dB Bandwidth @ -0.5 V, 50 Ω	MHz	10	20	---	1.5	2	---
Responsivity @ 1.9 μm , 0 V	A/W	1.0	1.05	---	1.0	1.05	---
² Saturation Power @ 1.55 μm , 0 V, -0.2 dB	mW	5.0	7.0	---	0.3	0.5	---
NEP @ 1.9 μm 0 V, 1 KHz	$10^{-12} \text{ W}/\sqrt{\text{Hz}}$	---	3	5	---	4	6

¹Wavelength range in which the photodiode has a quantum efficiency higher than 40% at 23°C..

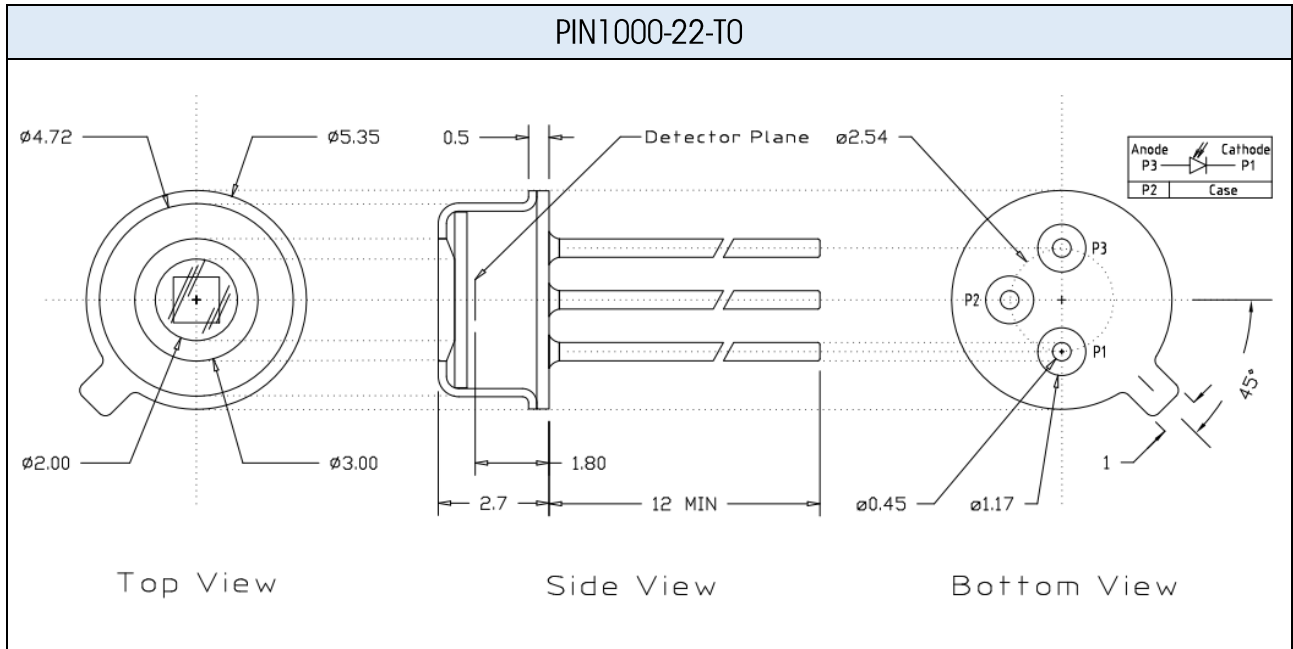
²Measured at the aperture center with an $1/e^2$ beam diameter of 250 μm .

ABSOLUTE MAXIMUM RATINGS ($T_{\text{AMB}} = 23^{\circ}\text{C}$)

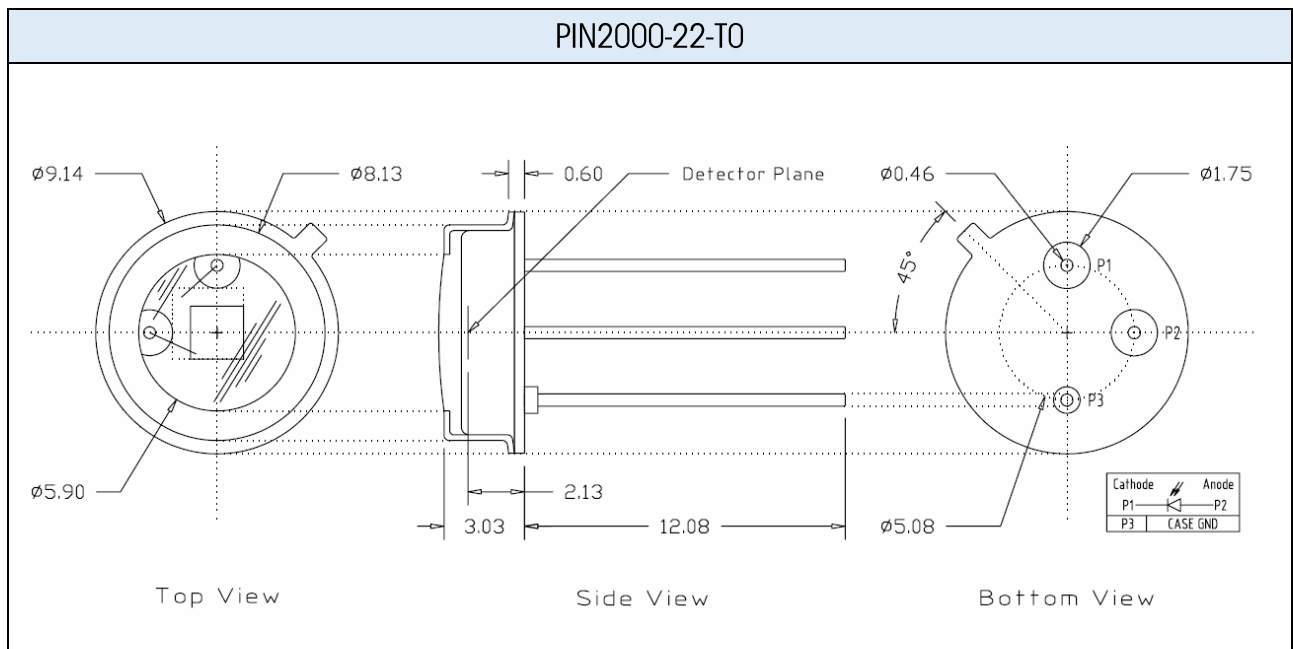
Model No.		PIN1000-22-T0		PIN2000-22-T0	
Parameter	Unit	Min.	Max.	Min.	Max.
Reverse Voltage	V	---	1.5	---	1
Reverse Current	mA	---	10	---	10
Forward Current	mA	---	10	---	10
Operating Temperature	$^{\circ}\text{C}$	-40	+85	-40	+85
Storage Temperature	$^{\circ}\text{C}$	-45	+125	-45	+125



PACKAGE OUTLINE (UNIT: mm)



Note: ID number of the TO-package is printed on the cap side wall.

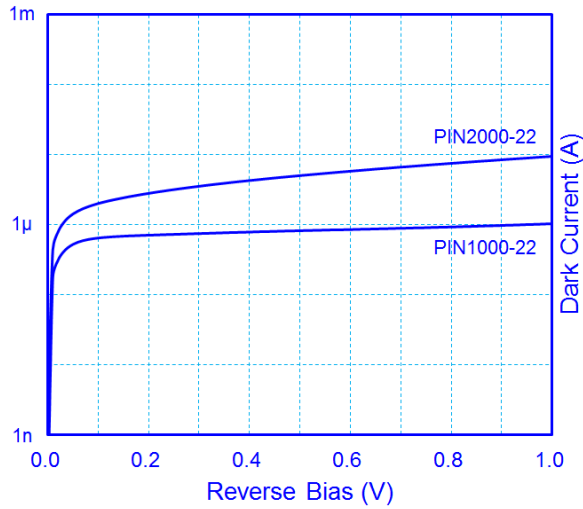


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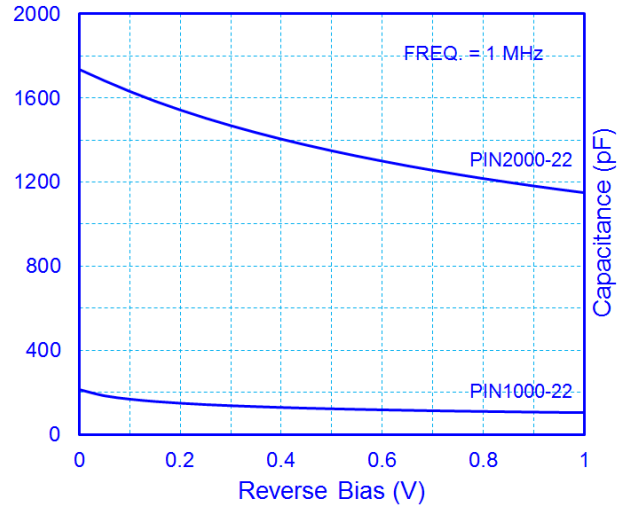


EXAMPLE CURVES ($T_{\text{AMB}} = 23^{\circ}\text{C}$)

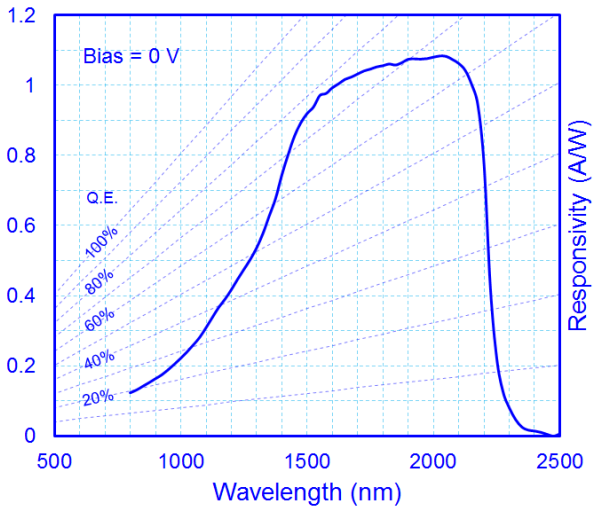
Dark Current



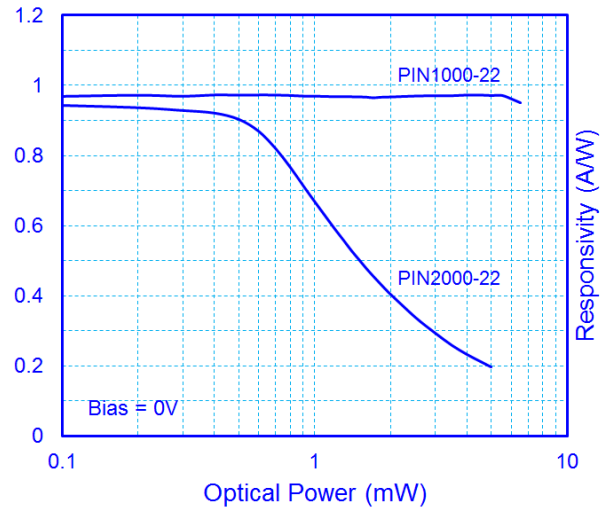
Dark Capacitance



Responsivity Spectrum



Response Linearity



Note: The example curves are subject to change without notice.