



InGaAs PIN Photodiode (1.7 μm Wavelength Cutoff)

FEATURES	APPLICATIONS
<ul style="list-style-type: none">● Highly reliable planar device● SWIR-only or VIS-SWIR operation● Low leakage current● High shunt resistance● High responsivity● Low stray absorption	<ul style="list-style-type: none">● Power monitoring● Spectral analysis● Light detection and ranging (LIDAR)● Remote temperature sensors● Humidity detection● Ice/Slush detection● Gas leak detection● Single-Photodiode SWIR detection● Covert IR sensing● Optical powering



GENERAL DESCRIPTIONS

MODEL NO.		PIN1000-17(V)-TO	PIN2000-17(V)-TO	PIN3000-17-TO
PARAMETER	UNIT	VALUE		
Spectral Range	μm	0.9 - 1.7 / 0.6 - 1.7		0.9 - 1.7
Aperture Size ¹	μm	Ø 950	Ø 1850	Ø 3000
Package Type	---	TO-46 / 3P	TO-39 / 3P	TO-39 / 3P

¹ Standard aperture of Ø 500 μm with TO-46 package is also available. Please contact us for further information.



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

Model No.		PIN1000-17-TO			PIN1000-17V-TO			PIN2000-17-TO			PIN2000-17V-TO			PIN3000-17-TO		
Spectral Range ¹ (μm)		0.9 - 1.7			0.6 - 1.7			0.9 - 1.7			0.6 - 1.7			0.9 - 1.7		
Parameter	Unit	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
Dark Current @ -5 V	nA	---	2	5	---	2	5	---	10	20	---	10	20	---	15	30
Shunt Resistance @ -10 mV	M Ω	25	100	---	20	80	---	10	40	---	5	20	---	5	20	---
Capacitance @ 1 MHz																
@ 0 V	pF	---	120	160	---	120	160	---	400	800	---	400	800	---	900	1400
@ -5 V		---	60	80	---	60	80	---	200	400	---	200	400	---	500	700
3dB Bandwidth @ -5 V, 50 Ω	MHz	30	40	---	30	40	---	8	15	---	8	15	---	4.5	6	---
Responsivity @ 0 V																
@ 0.65 μm	A/W	---	---	---	0.20	0.25	---	---	---	---	0.20	0.25	---	---	---	---
@ 0.85 μm		0.10	0.15	---	0.35	0.40	---	0.10	0.15	---	0.35	0.40	---	0.10	0.15	---
@ 1.30 μm		0.80	0.90	---	0.80	0.85	---	0.80	0.90	---	0.80	0.85	---	0.80	0.90	---
@ 1.55 μm		0.90	0.95	---	0.85	0.90	---	0.90	0.95	---	0.85	0.90	---	0.90	0.95	---
Saturation Power ² @ 1.55 μm , 0 V, -0.2 dB	mW	5.0	7.0	---	0.5	2	---	2.0	4.0	---	0.2	0.5	---	1.5	3.0	---
NEP @ 1.55 μm , 0 V, 1 KHz	10^{-14} W/ $\sqrt{\text{Hz}}$	---	1.3	2.6	---	2.6	5.2	---	2.5	5.0	---	6.3	12.6	---	4.2	8.4

¹ 1.2 – 2.2 μm wavelength range is also available. Please contact us for further information.

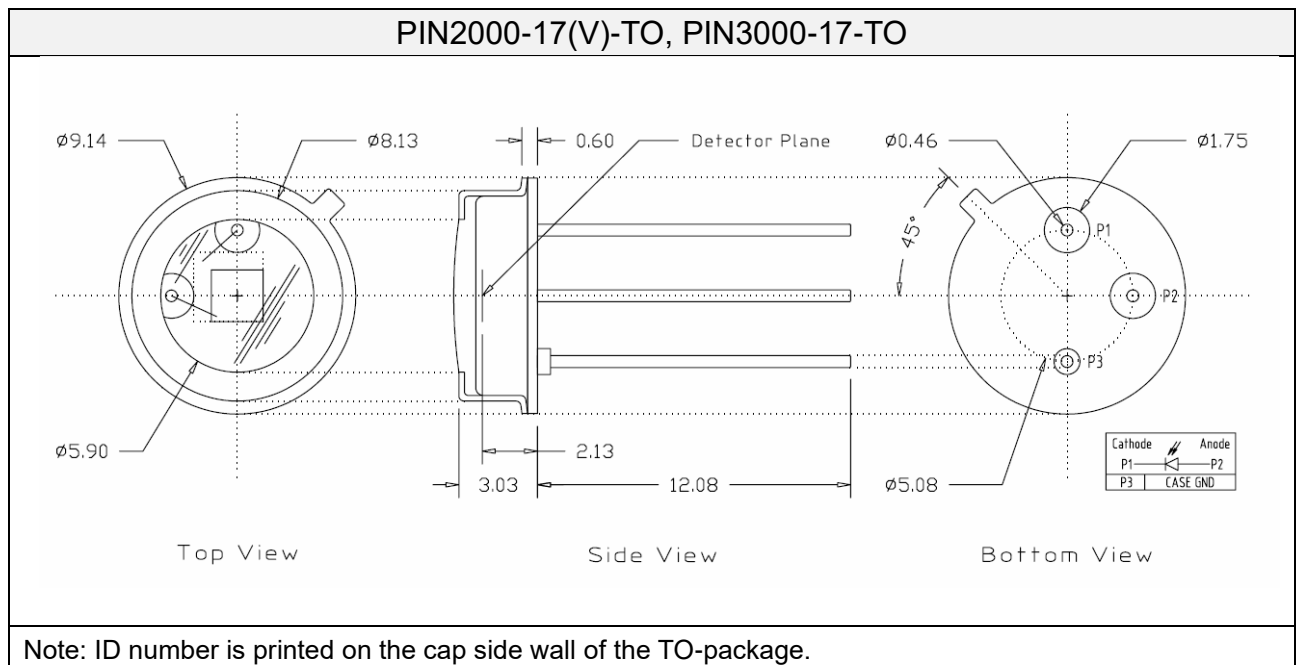
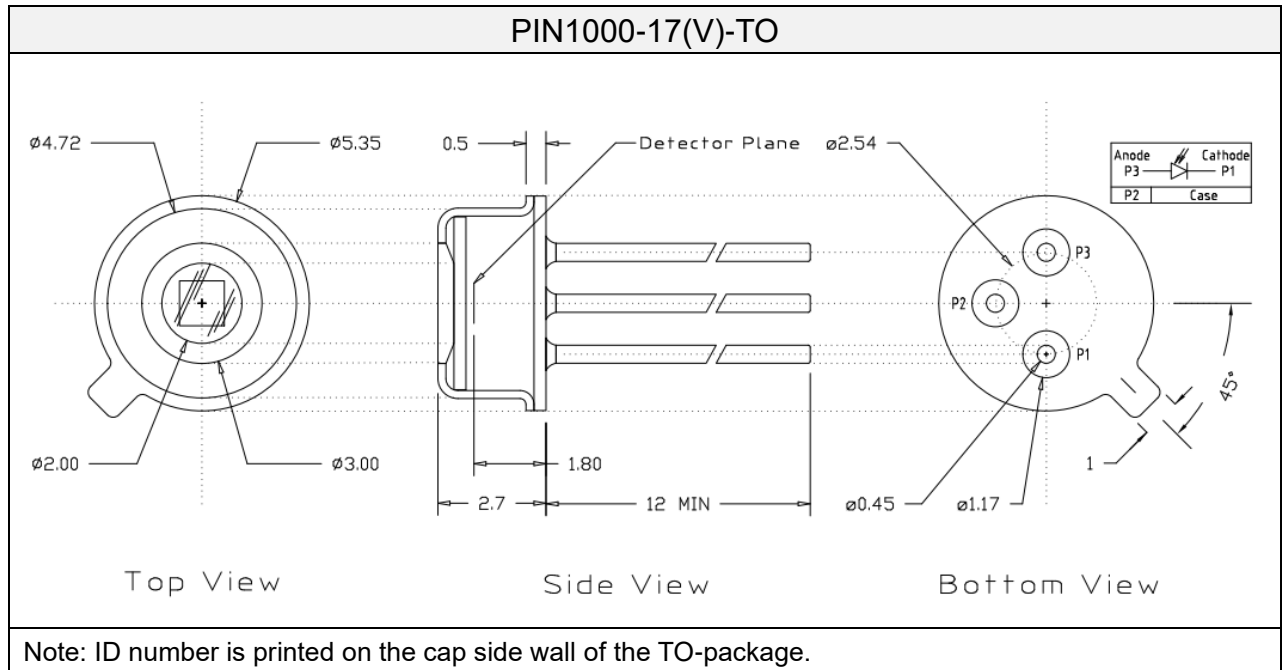
² Measured at the aperture centre with an $1/e^2$ beam diameter of 250 μm .

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

Model No.		PIN1000-17-TO		PIN1000-17V-TO		PIN2000-17-TO		PIN2000-17V-TO		PIN3000-17-TO	
PARAMETER	Unit	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Reverse Voltage	V	---	20	---	10	---	15	---	10	---	10
Reverse Current	mA	---	10	---	2	---	10	---	2	---	10
Forward Current	mA	---	10	---	5	---	10	---	5	---	10
Operation Temperature	$^{\circ}\text{C}$	-40	+85	-40	+85	-40	+85	-40	+85	-40	+85
Storage Temperature	$^{\circ}\text{C}$	-40	+85	-40	+85	-40	+85	-40	+85	-40	+85



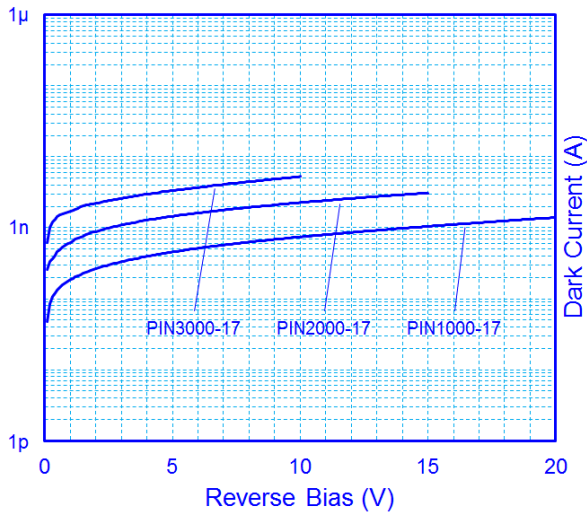
PACKAGE OUTLINE (UNIT: mm)



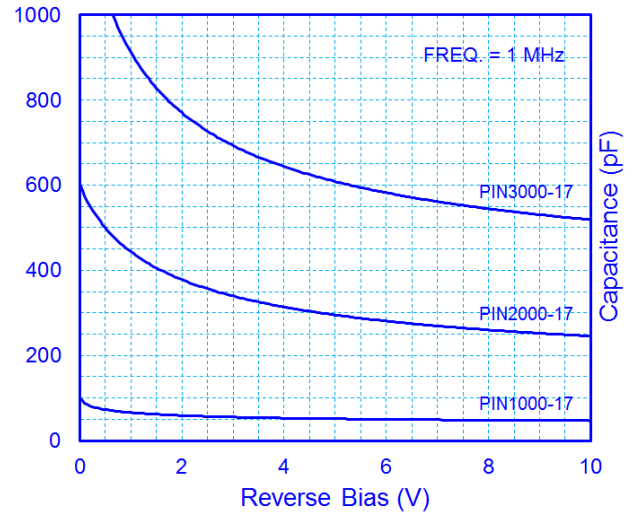


EXAMPLE CURVES ($T_{\text{AMB}} = 23^{\circ}\text{C}$)

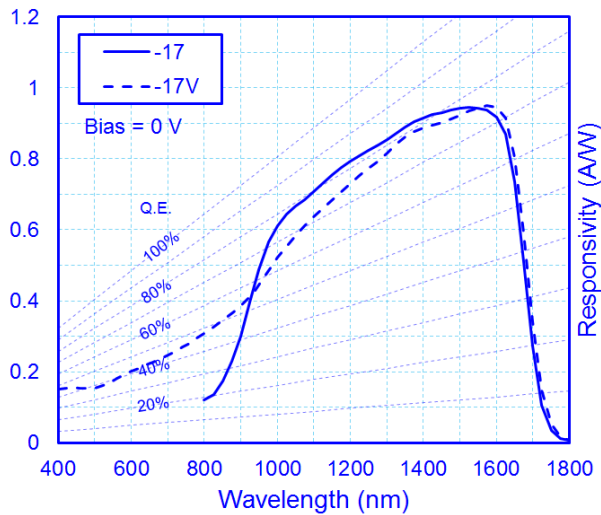
Dark Current



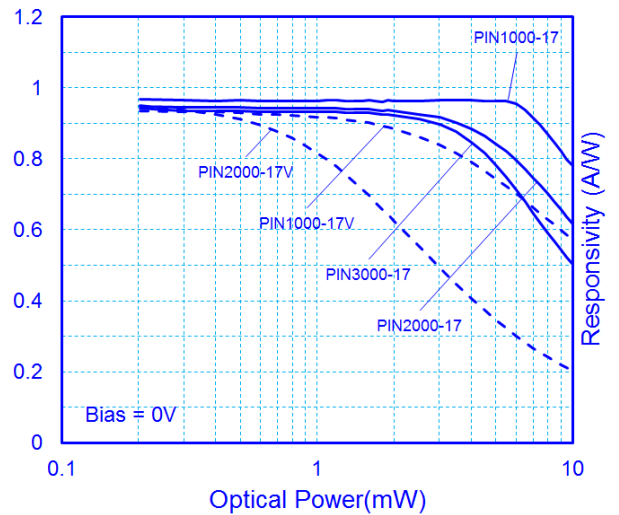
Dark Capacitance



QEFF Spectrum



Response Linearity



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