



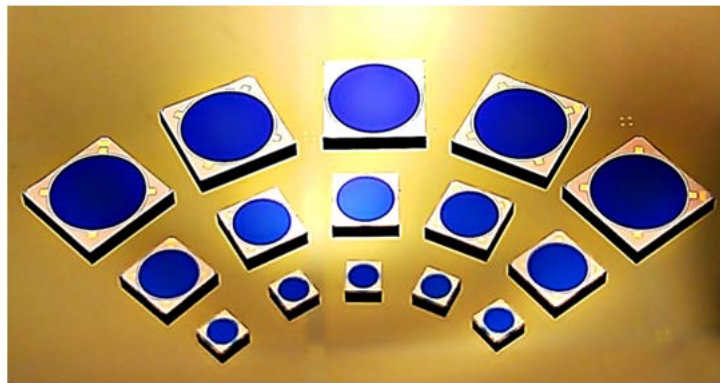
InGaAs PIN Photodiode Chip (1.7- μm Wavelength Cutoff)

FEATURES

- Highly Reliable Planar Device
- SWIR-Only or VIS-SWIR Operation
- Low Leakage Current
- High Shunt Resistance
- High Responsivity
- Low Stray Absorption

APPLICATIONS

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



GENERAL DESCRIPTIONS

MODEL NO.		PIN1000-17(V)-D	PIN2000-17(V)-D	PIN3000-17-D
PARAMETER	UNIT	VALUE		
Spectral Range	μm	0.9 – 1.7 / 0.6 – 1.7		0.9 – 1.7
^{1,2} Aperture Size	μm	\varnothing 950	\varnothing 1850	\varnothing 3000
Chip Dimension				
Length	μm	1070 \pm 15	2055 \pm 15	3285 \pm 15
Width	μm	1070 \pm 15	2055 \pm 15	3285 \pm 15
Thickness	μm	300 \pm 20	300 \pm 20	300 \pm 20

¹Standard apertures of \varnothing 500 μm and \varnothing 5000 μm are also available.

²CLPT also provides services for custom-designed aperture in various sizes and shapes or in array format. Please contact us for further information.



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

Model No.		PIN1000-17-D			PIN1000-17V-D			PIN2000-17-D			PIN2000-17V-D			PIN3000-17-D		
¹ Spectral Range (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 @ -10mV	M Ω	25	100	---	20	80	---	10	40	---	5	20	---	5	20	---
Capacitance @ 1MHz	pF															
@ 0 V		---	120	150	---	120	150	---	360	500	---	360	500	---	900	1200
@ -5 V		---	60	75	---	60	75	---	200	250	---	200	250	---	500	600
3dB Bandwidth @ -5 V, 50 Ω	MHz	30	40	---	30	40	---	12	15	---	12	15	---	5	6	---
Responsivity @ 0 V	A/W															
@ 0.65 μm		---	---	---	0.20	0.30	---	---	---	---	0.20	0.30	---	---	---	---
@ 0.85 μm		0.10	0.20	---	0.35	0.45	---	0.10	0.20	---	0.35	0.45	---	0.10	0.20	---
@ 1.30 μm		0.85	0.95	---	0.80	0.90	---	0.85	0.95	---	0.80	0.90	---	0.85	0.95	---
@ 1.55 μm		0.95	1.00	---	0.90	0.95	---	0.95	1.00	---	0.90	0.95	---	0.95	1.00	---
² Saturation Power @ 1.55 μm , 0V, -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 0V, 1KHz	10^{-14} W/ $\sqrt{\text{Hz}}$	---	1.2	2.4	---	2.5	5.0	---	2.4	4.8	---	6.0	12.0	---	4.0	8.0

¹1.2 – 2.2 μm wavelength range is also available. Please contact us for further information.

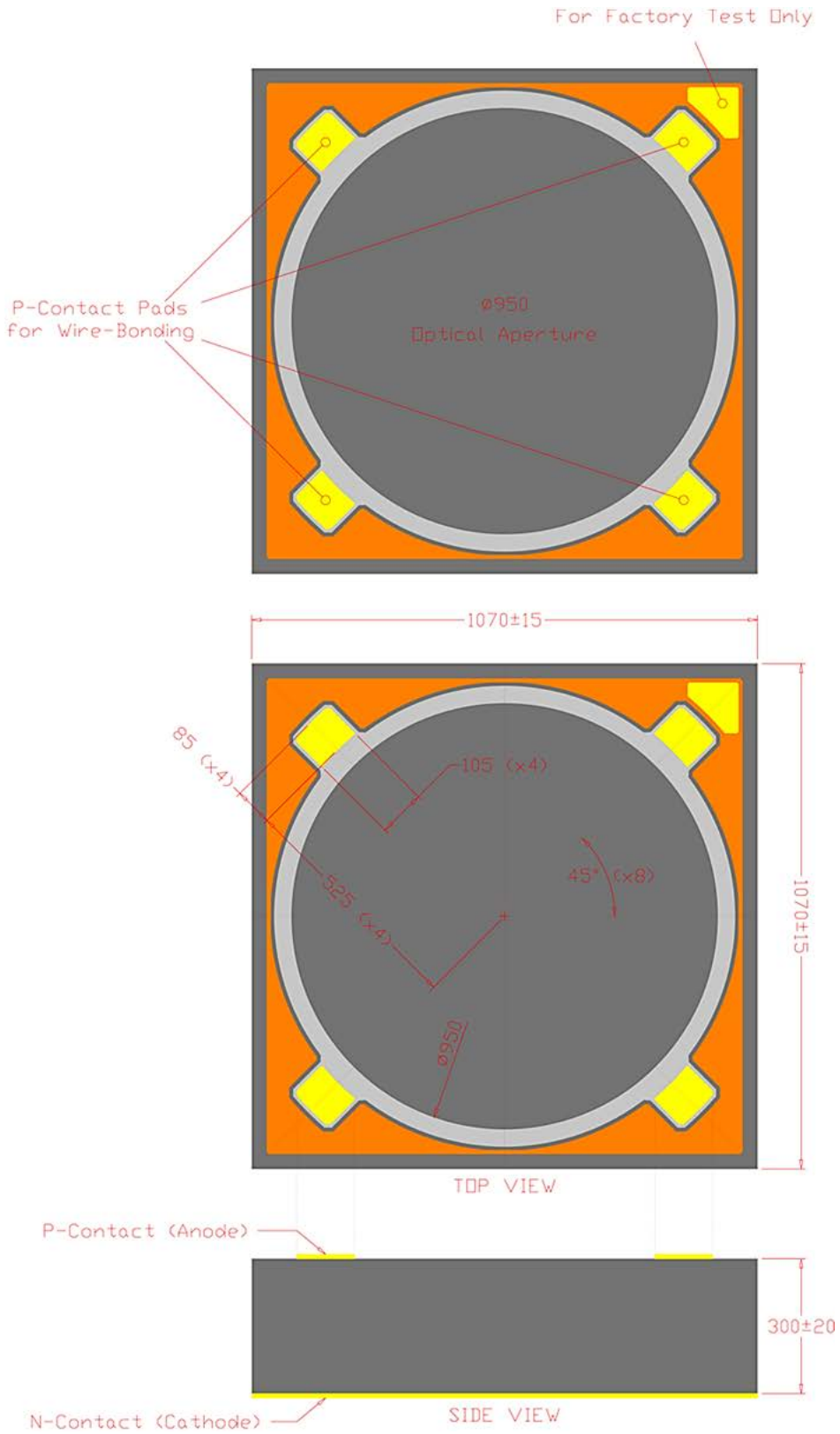
²Measured at the aperture center with an $1/e^2$ beam diameter of 250 μm .

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

Model No.		PIN1000-17-D		PIN1000-17V-D		PIN2000-17-D		PIN2000-17V-D		PIN3000-17-D	
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

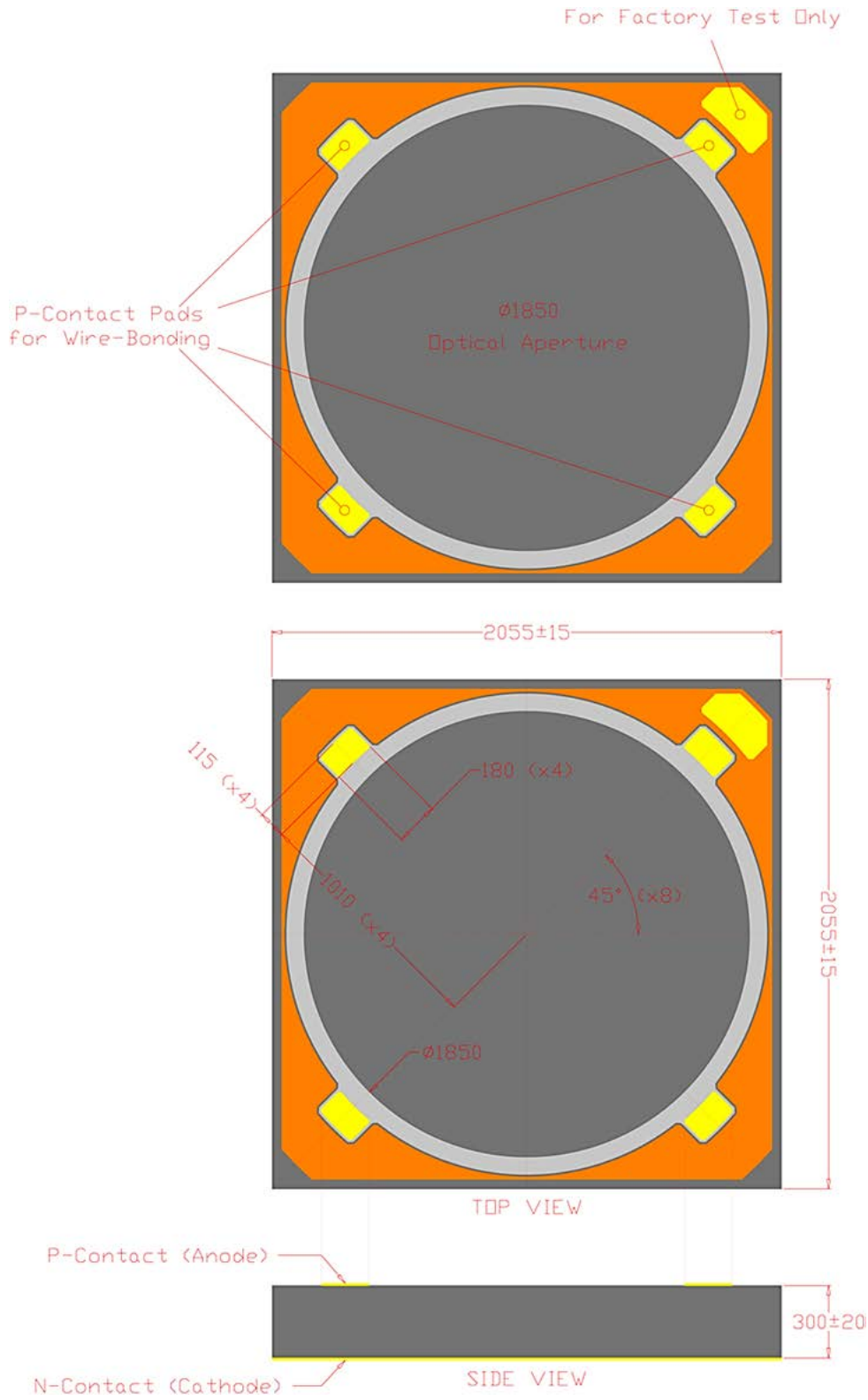


Chip Diagram of PIN1000-17-D (Unit: μm)



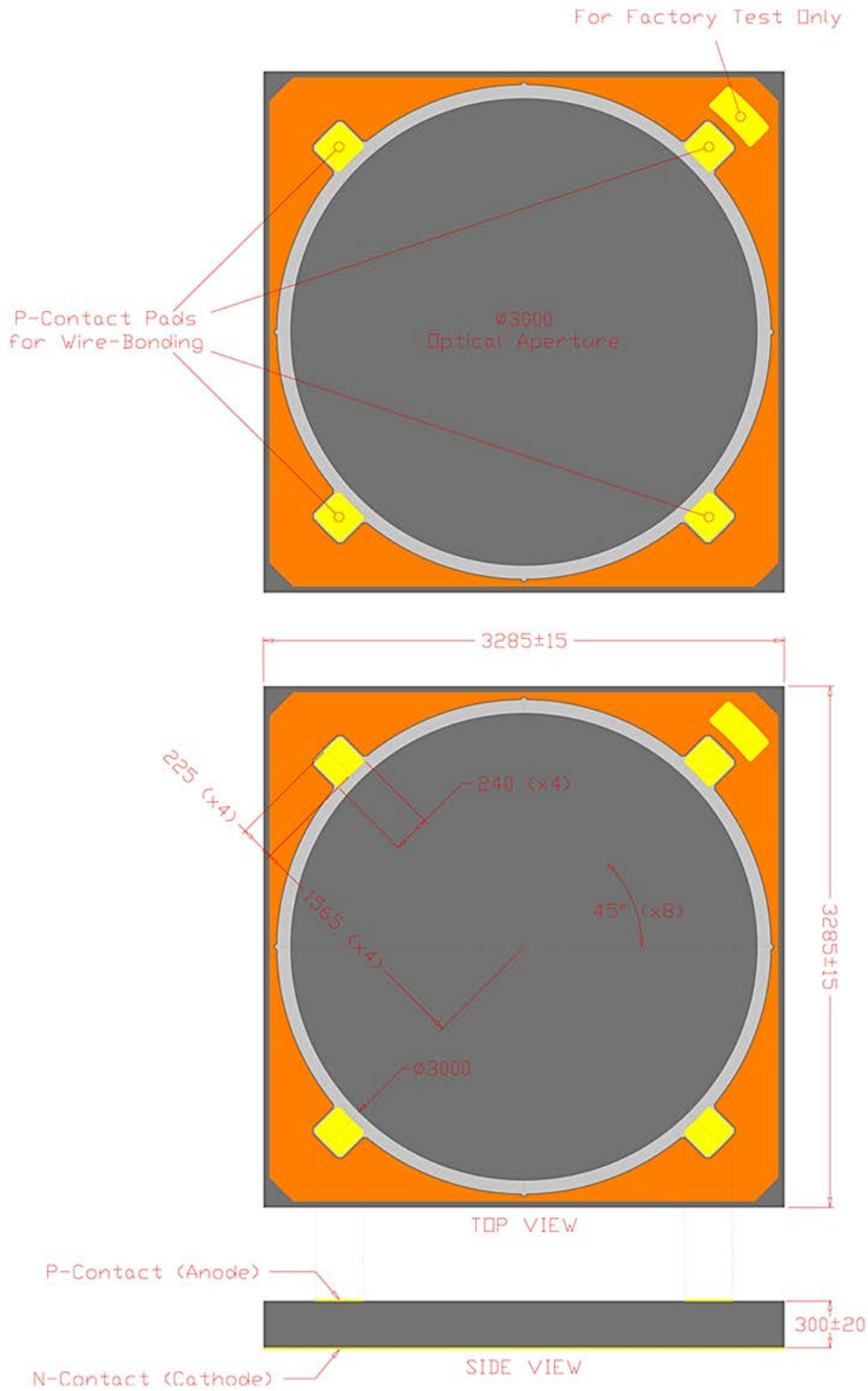


Chip Diagram of PIN2000-17-D (Unit: μm)



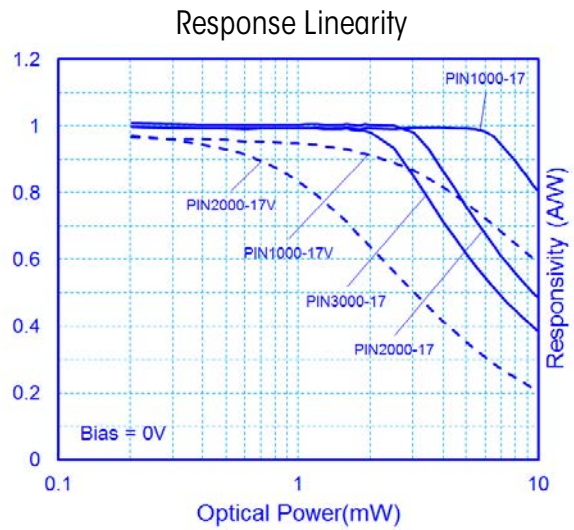
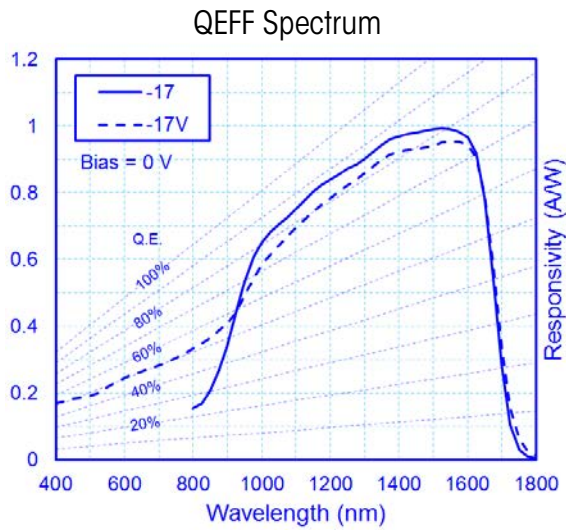
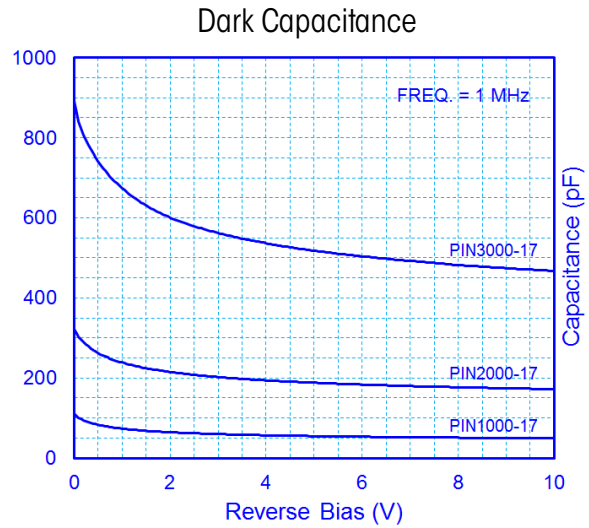
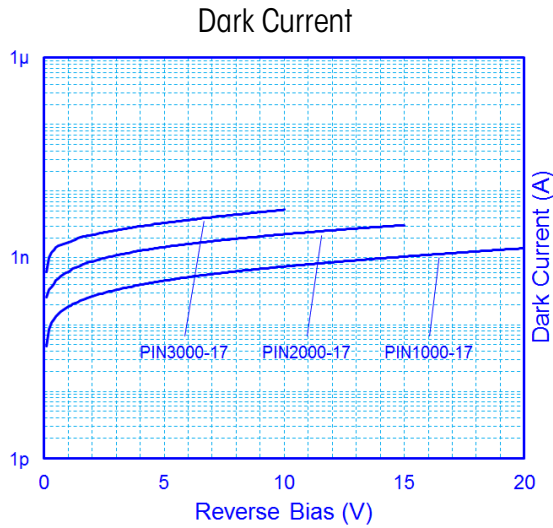


Chip Diagram of PIN3000-17-D (Unit: μm)





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



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