



VIS-InGaAs PIN Photodiode (0.6 μm - 1.7 μm)

PIN0500-17V-D / TO: \varnothing 455 μm Detection Aperture

PIN1000-17V-D / TO: \varnothing 950 μm Detection Aperture

PIN2000-17V-D / TO: \varnothing 1850 μm Detection Aperture

FEATURES

- Highly reliable planar device
- 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
- Ice/slush/humidity detection
- Gas leak detection
- Single-Photodiode SWIR detection
- Covert IR sensing
- Optical powering





GENERAL DESCRIPTIONS

MODEL NO.	Spectral Range	Aperture Size	Package Type
	μm	μm	
PIN0500-17V-D	0.6 – 1.7	Ø 455	--
PIN0500-17V-T0			TO-46 / 3P
PIN1000-17V-D		Ø 950	--
PIN1000-17V-T0			TO-46 / 3P
PIN1000-17V-C			6CLCC (3.0SQ)
PIN2000-17V-D		Ø 1850	--
PIN2000-17V-T0			TO-39 / 3P
PIN2000-17V-C			8CLCC (5.0SQ)

ABSOLUTE MAXIMUM RATINGS

MODEL NO.	Reverse Voltage		Reverse Current		Forward Current		Ambient Temperature ¹			
	V		mA		mA		In Operation		Storage	
							°C		°C	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PIN0500-17V-D	---	10	---	2	---	5	-40	+85	-40	+125
PIN0500-17V-T0									-40	+85
PIN1000-17V-D									-40	+125
PIN1000-17V-T0									-40	+85
PIN1000-17V-C									-40	+85
PIN2000-17V-D									-40	+125
PIN2000-17V-T0									-40	+85
PIN2000-17V-C									-40	+85

¹Non-condensing environment.



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

MODEL NO.	Dark Current		Shunt Resistance		Capacitance				3dB Bandwidth	
	nA		$\text{M}\Omega$		μF				MHz	
	@ -5 V		@ -10 mV		@ 1 MHz, 0V		@ 1 MHz, -5V		@ -5V, 50 Ω	
	Typ.	Max.	Min.	Typ.	Typ.	Max.	Typ.	Max.	Min.	Typ.
PIN0500-17V-D	0.5	1	100	320	35	50	20	25	80	100
PIN0500-17V-T0										
PIN1000-17V-D	2	5	20	80	120	160	60	80	30	40
PIN1000-17V-T0										
PIN1000-17V-C										
PIN2000-17V-D	10	20	5	20	400	800	200	400	8	15
PIN2000-17V-T0										
PIN2000-17V-C										

MODEL NO.	Responsivity								² Saturation Power	
	A/W								mW	
	@ 0.65 μm , 0 V		@ 0.85 μm , 0 V		@ 1.30 μm , 0 V		@ 1.55 μm , 0 V		@ 1.55 μm , 0 V, -0.2 dB	
	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
PIN0500-17V-D	0.2	0.3	0.35	0.45	0.8	0.9	0.9	0.95	0.5	1
PIN0500-17V-T0	0.2	0.25	0.35	0.4	0.8	0.85	0.85	0.9		
PIN1000-17V-D	0.2	0.3	0.35	0.45	0.8	0.9	0.9	0.95	0.5	2
PIN1000-17V-T0	0.2	0.25	0.35	0.4	0.8	0.85	0.85	0.9		
PIN1000-17V-C	0.2	0.25	0.35	0.4	0.8	0.85	0.85	0.9		
PIN2000-17V-D	0.2	0.3	0.35	0.45	0.8	0.9	0.9	0.95	0.2	0.5
PIN2000-17V-T0	0.2	0.25	0.35	0.4	0.8	0.85	0.85	0.9		
PIN2000-17V-C	0.2	0.25	0.35	0.4	0.8	0.85	0.85	0.9		

MODEL NO.	NEP	
	$10^{-14} \text{W}/\sqrt{\text{Hz}}$	
	@ 1.55 μm , 0 V, 1 KHz	
	Typ.	Max.
PIN0500-17V-D	1.5	3
PIN0500-17V-T0		
PIN1000-17V-D	2.5	5
PIN1000-17V-T0		
PIN1000-17V-C		
PIN2000-17V-D	6	12
PIN2000-17V-T0		
PIN2000-17V-C		

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

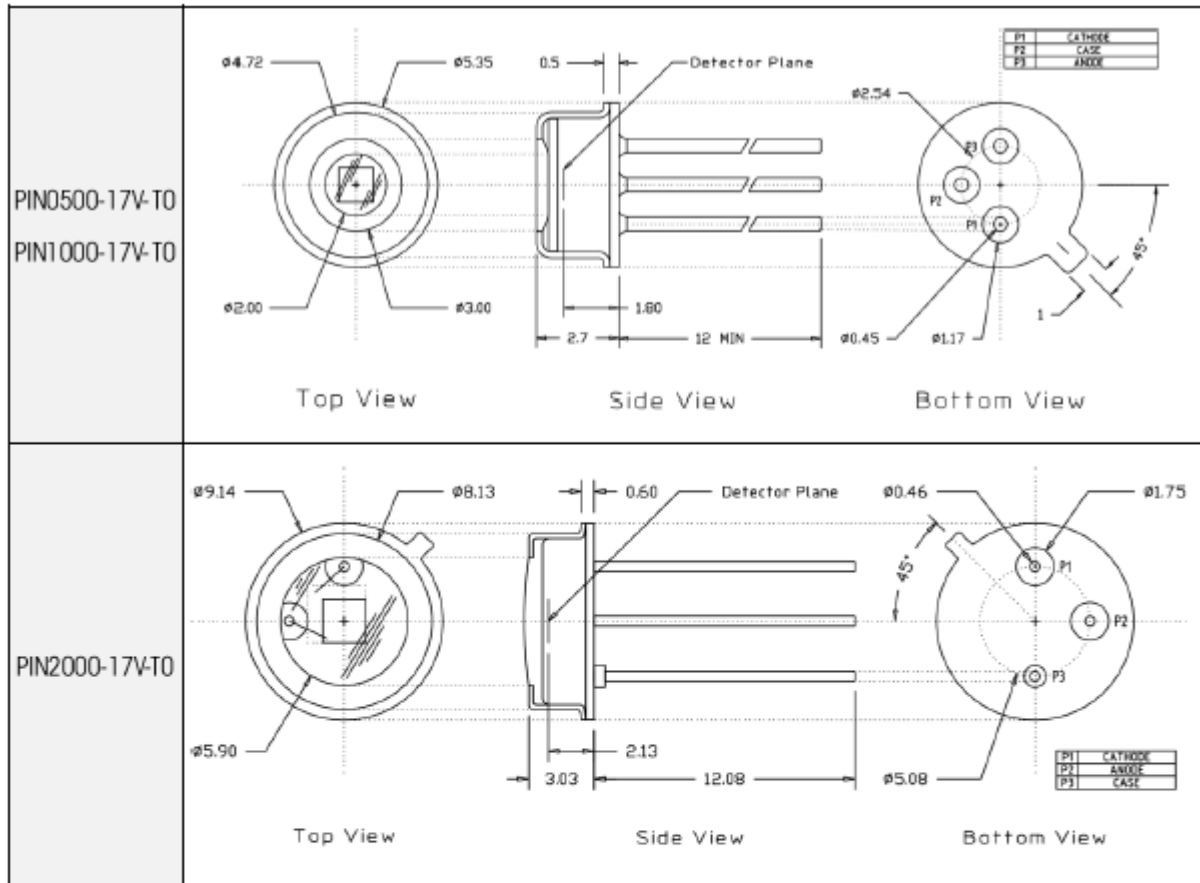


CHIP DIAGRAMME (UNIT: μm)

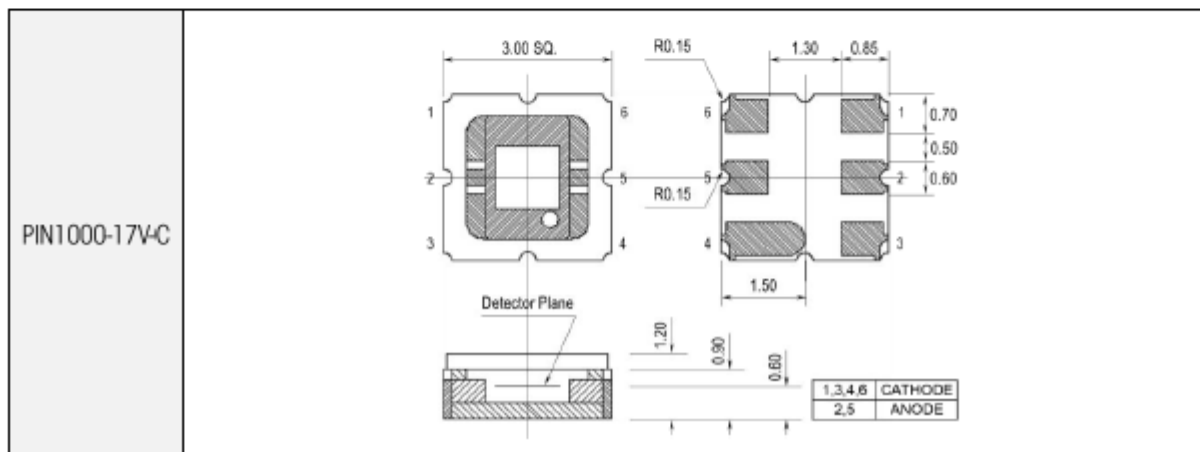
PIN0500-17V-D	<p>for factory test only</p> <p>P-Contact Pads for Wire-Bonding</p> <p>570x570</p> <p>490x490</p> <p>P-Contact (Anode)</p> <p>N-Contact (Cathode)</p> <p>270</p> <p>TOP VIEW</p> <p>SIDE VIEW</p>
PIN1000-17V-D	<p>for factory test only</p> <p>P-Contact Pads for wire-bonding</p> <p>1070x1070</p> <p>800x800</p> <p>P-Contact (Anode)</p> <p>N-Contact (Cathode)</p> <p>300±20</p> <p>TOP VIEW</p> <p>SIDE VIEW</p>
PIN2000-17V-D	<p>for factory test only</p> <p>P-Contact Pads for wire-bonding</p> <p>1380x1380</p> <p>1070x1070</p> <p>P-Contact (Anode)</p> <p>N-Contact (Cathode)</p> <p>300±20</p> <p>TOP VIEW</p> <p>SIDE VIEW</p>

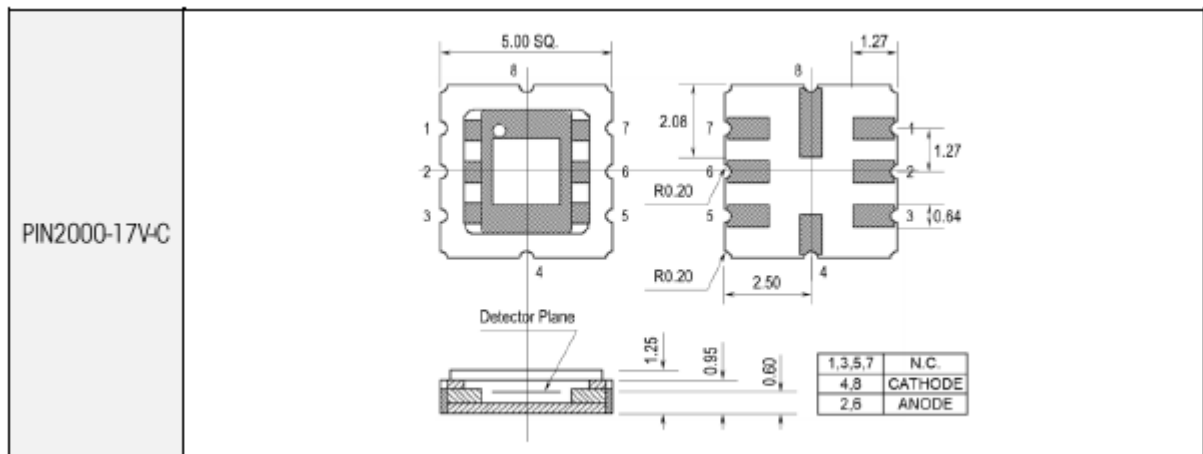


PACKAGE OUTLINE (UNIT: mm)



NOTE: Product serial numbers of PINxxx-17V-Tx are printed on the side wall of the cap.

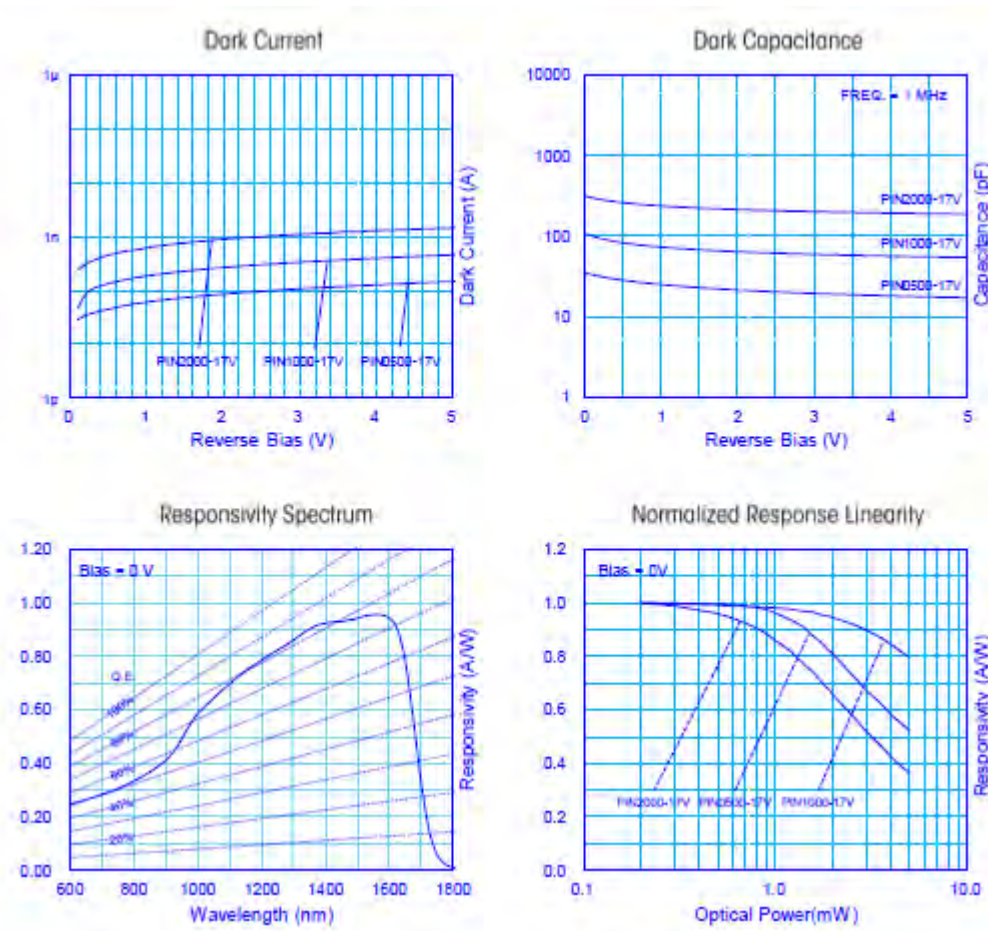




NOTE: Product serial numbers of PINxxx-17V-C are printed on the back side of the package.



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



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