



InGaAs PIN Photodiode (0.9 μm - 2.2 μm)

PIN1000-22-D / TO / T1: \varnothing 950 μm Detection Aperture

PIN2000-22-D / TO / T2: \varnothing 1850 μm Detection Aperture

FEATURES

- Highly reliable planar device
- Low leakage current
- High responsivity in 0.9 - 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 detection
- Covert IR sensing



GENERAL DESCRIPTIONS

MODEL NO.	Spectral Range	Aperture Size	Package Type
	μm	μm	
PIN1000-22-D	0.9 - 2.2	\varnothing 950	TO-46 / 3P
PIN1000-22-TO			TO-46 / 5P
PIN1000-22-T1			
PIN2000-22-D		\varnothing 1850	TO-39 / 3P
PIN2000-22-TO			TO-39 / 8P
PIN2000-22-T2			



ABSOLUTE MAXIMUM RATINGS

Model No.	Reverse Voltage		Reverse Current		Forward Current		TEC Current		Ambient Temperature ¹			
	V		mA		mA		A		In Operation		In Storage	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	°C		°C	
PIN1000-22-D	--	1.5	--	10	--	10	--	--	-40	+85	-55	+125
PIN1000-22-TO							--	--			-40	+85
PIN1000-22-T1							--	0.65			-40	+85
PIN2000-22-D	--	1	--	10	--	10	--	--	-40	+85	-55	+125
PIN2000-22-TO							--	--			-40	+85
PIN2000-22-T2							--	0.9			-40	+85

¹ Non-condensing environment

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

Model No.	Dark Current		Shunt Resistance		Capacitance				3dB Bandwidth	
	μA		$\text{K}\Omega$		pF				MHz	
	@ -0.5 V		@ -10 mV		@ 1 MHz, 0 V		@ 1 MHz, -0.5 V		@ -0.5 V, 50 Ω	
	Typ.	Max.	Min.	Typ.	Typ.	Max.	Typ.	Max.	Min.	Typ.
PIN1000-22-D	2.5	5	20	40	450	600	300	400	6	10
PIN1000-22-TO										
PIN1000-22-T1										
PIN2000-22-D	10	20	5	10	1800	2300	1400	1800	1.5	2
PIN2000-22-TO										
PIN2000-22-T2										

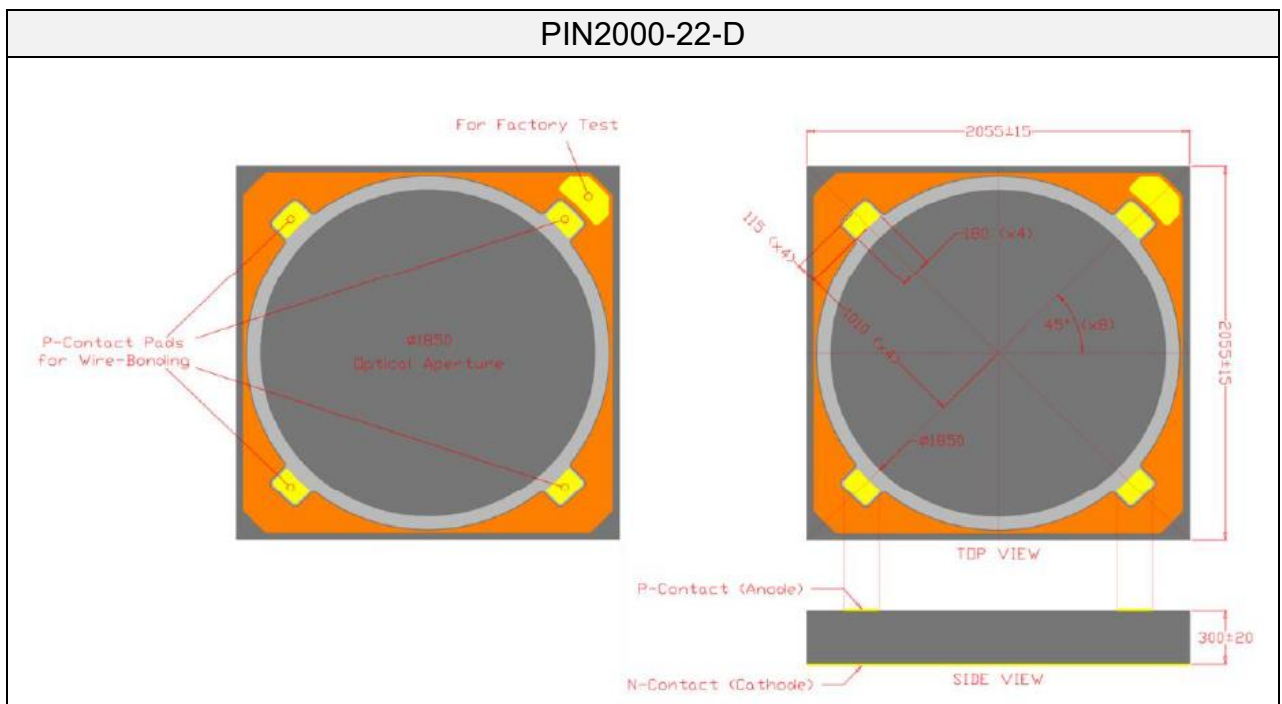
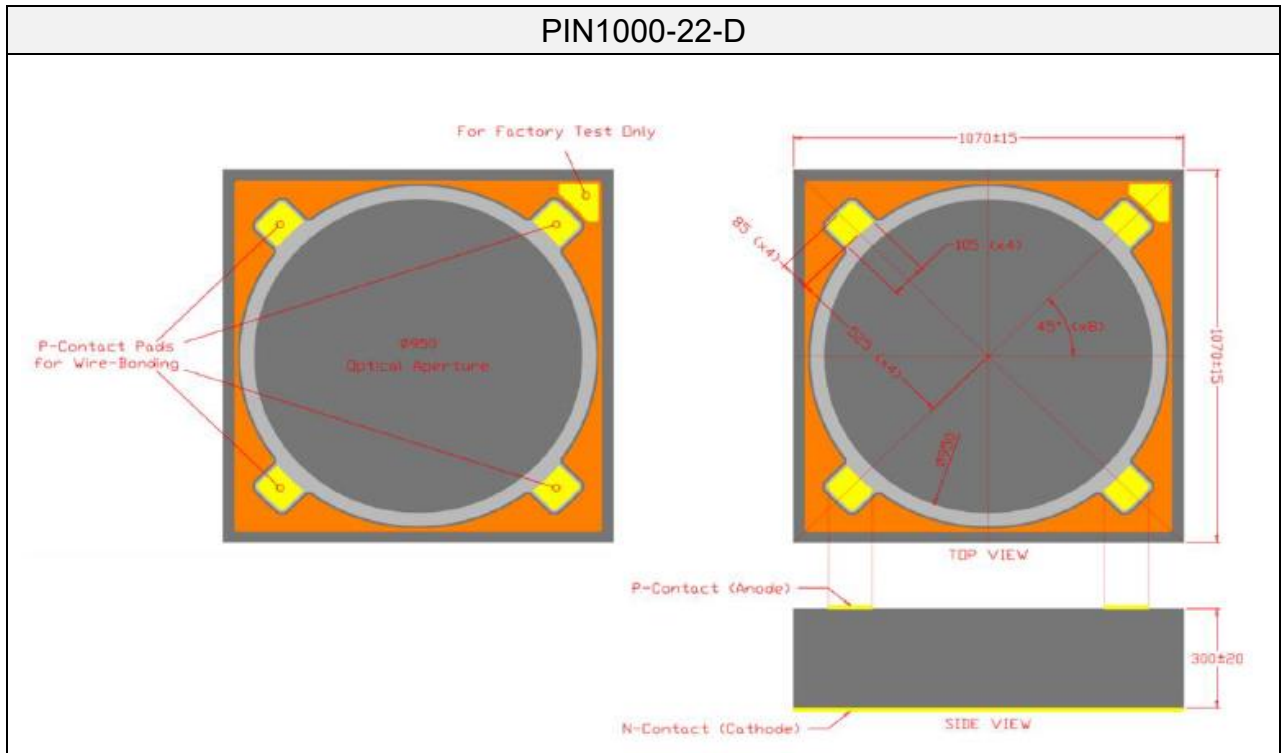
Model No.	Responsivity				Saturation Power ²		NEP		Maximum Cooling Capability (ΔT_{MAX}) ³	
	A/W		A/W		mW		10-12 W/ $\sqrt{\text{Hz}}$		°C	
	@ 1.55 μm , 0 V		@ 1.9 μm , 0 V		@ 1.55 μm , 0 V, -0.2 dB		@ 1.9 μm , 0 V, 1 kHz		$T_{\text{Heatsink}} = 20^{\circ}\text{C}$	
	Min.	Typ.	Min.	Typ.	Min.	Typ.	Typ.	Max.	Min.	Typ.
PIN1000-22-D	0.95	1.0	1.05	1.1	1.0	2.0	3	5	--	--
PIN1000-22-TO	0.9	0.95	1.0	1.05					--	--
PIN1000-22-T1	0.95	1.0	1.05	1.1					35	40
PIN2000-22-D	0.95	1.0	1.05	1.1	0.5	1.0	6	10	--	--
PIN2000-22-TO	0.9	0.95	1.0	1.05					--	--
PIN2000-22-T2	0.95	1.0	1.05	1.1					55	60

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

³ Adequate heatsink and thermal interface material are the prerequisites for stable operation..

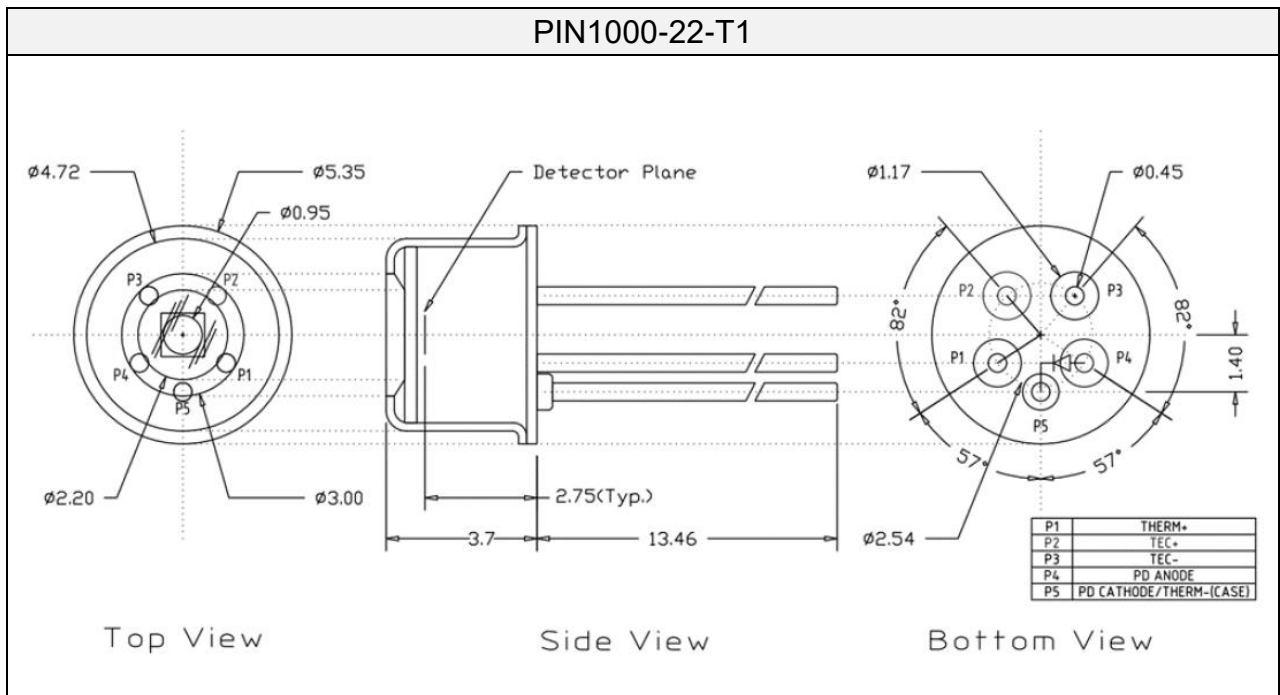
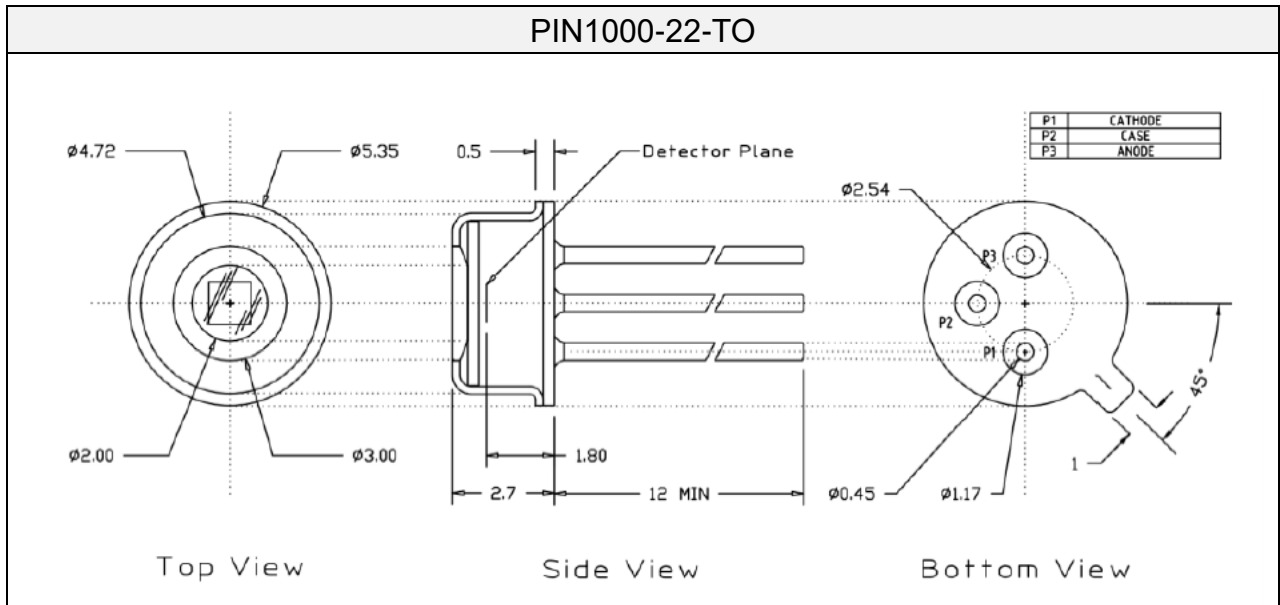


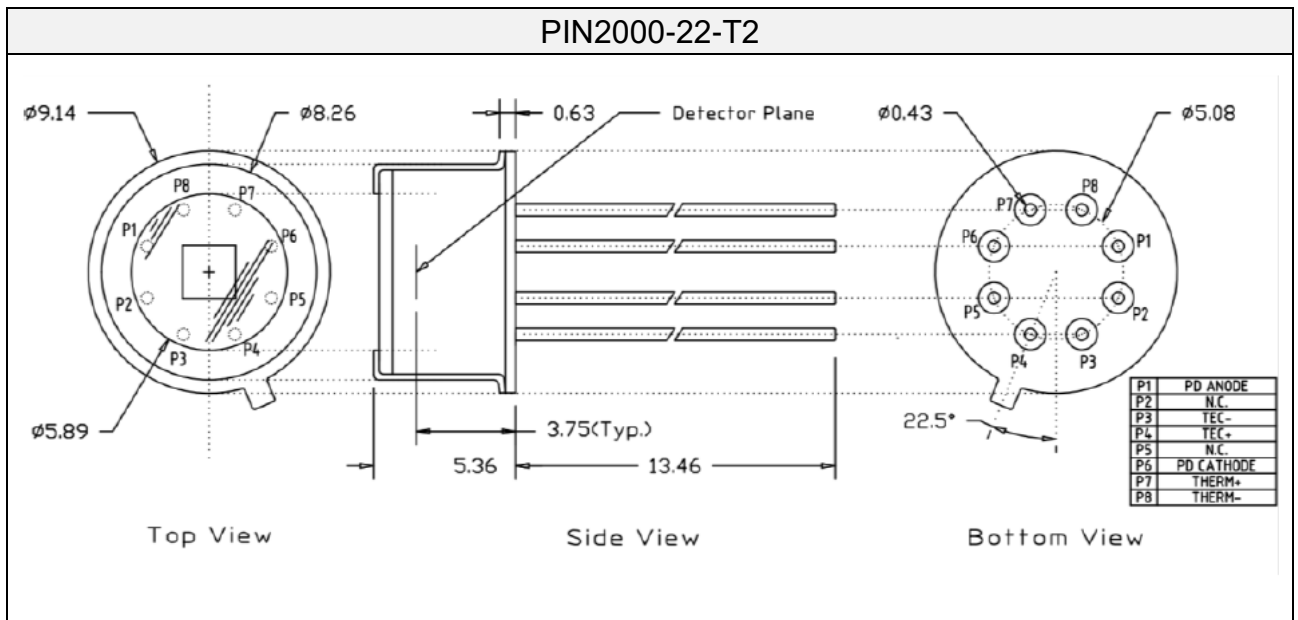
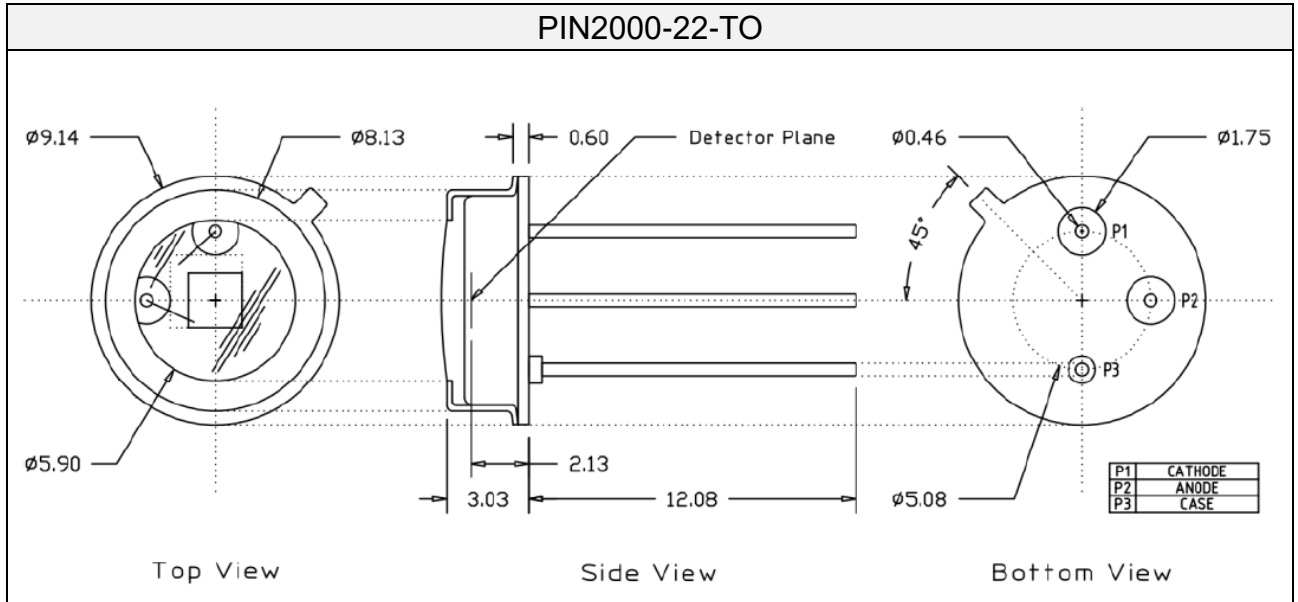
CHIP DIAGRAMME (UNIT: μm)





PACKAGE OUTLINE (UNIT: mm)

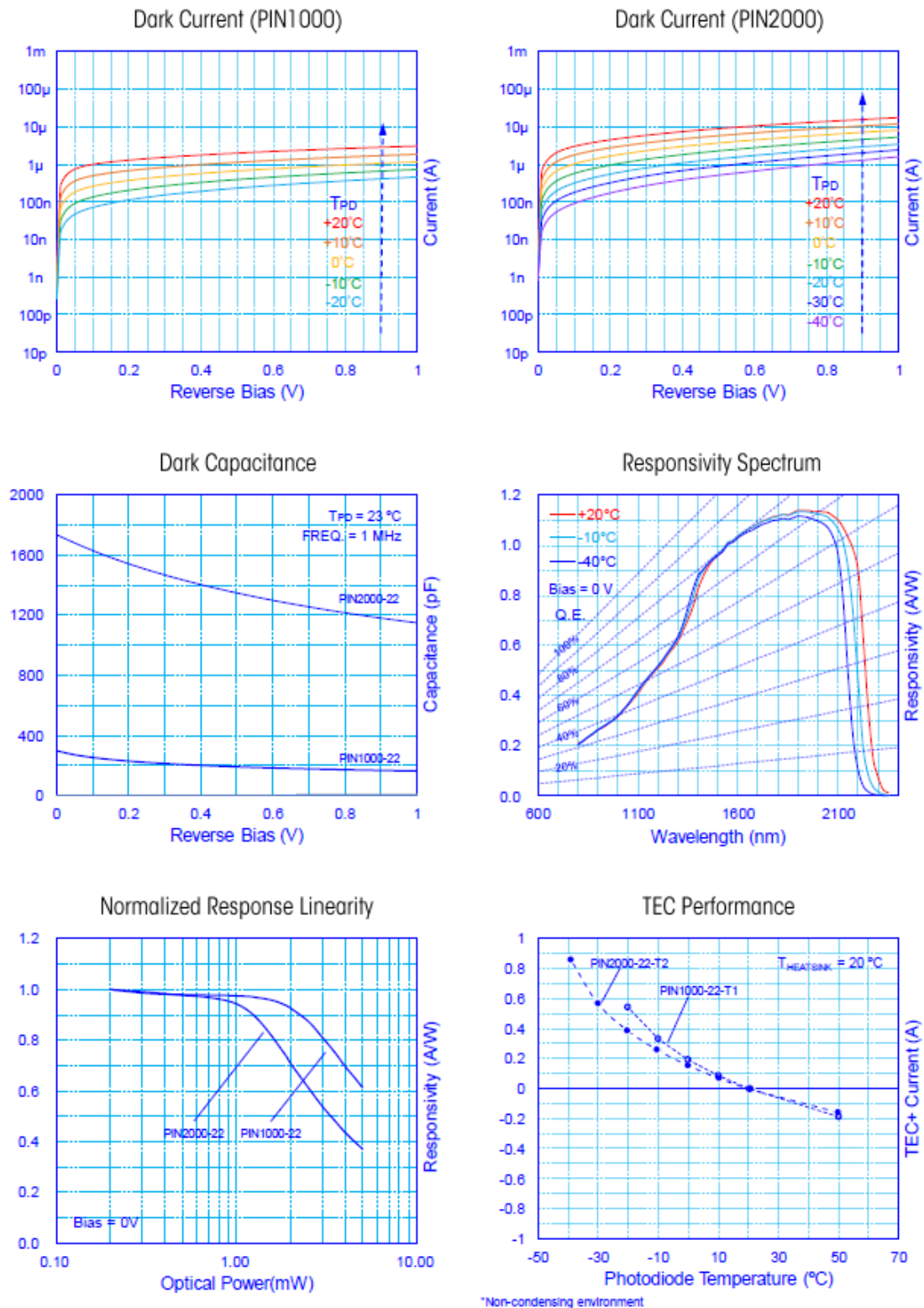




Note: Product serial numbers of PINxxx-22-Tx are printed on the side wall of the cap.



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



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