



LAPD-1-12-22-TO46

- InGaAs PIN Photodiode
- Ø 1 mm active area
- 1.2 – 2.2 µm spectral range
- Low Dark Current
- High Responsivity



Description

LAPD-1-12-22-TO46 is an InGaAs PIN photodiode with an active area diameter of **1 mm**, offering a very low dark current and excellent spectral sensitivity range from 1.2 to 2.2 µm. **LAPD-1-12-22-TO46** comes in a **hermetically sealed TO-46** Package with flat glass window. It is widely used for spectral analysis, power monitoring, SWIR camera, light detection, and LIDAR applications.

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	1.5	V
Reverse Current	I_R	10	mA
Forward Current	I_F	10	mA
Operating Temperature	T_{OPR}	- 40 + 85	°C
Storage Temperature	T_{STG}	- 40 + 85	°C
Soldering Temperature (max. 5s)	T_{SOL}	max. 260	°C



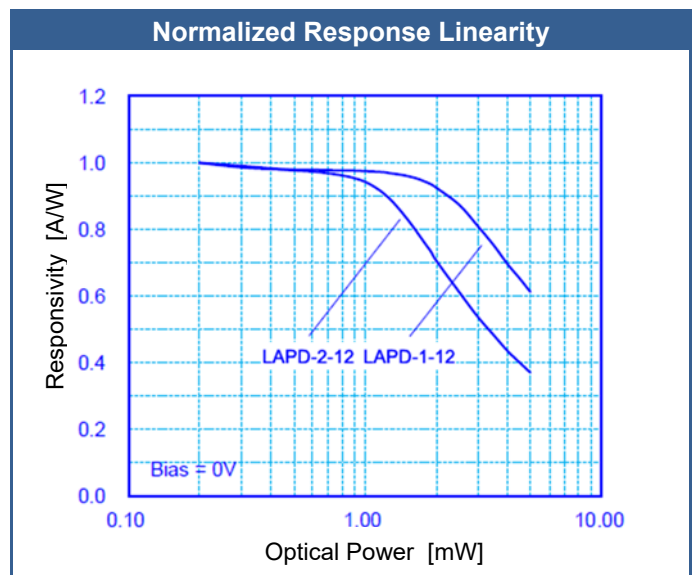
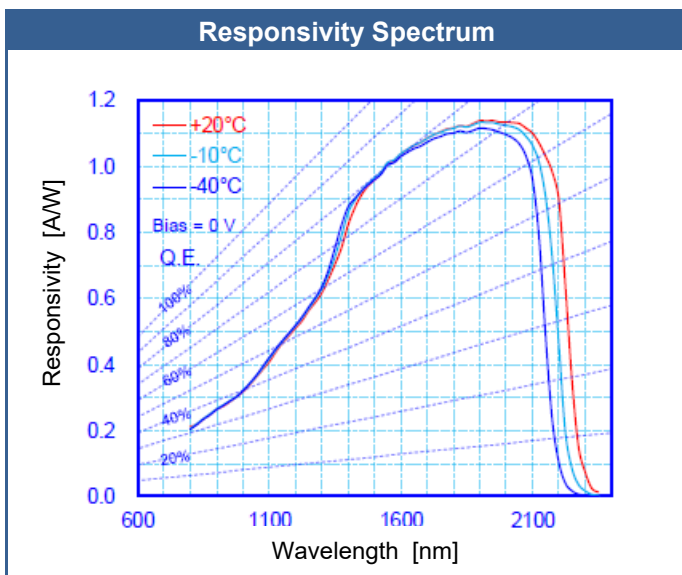
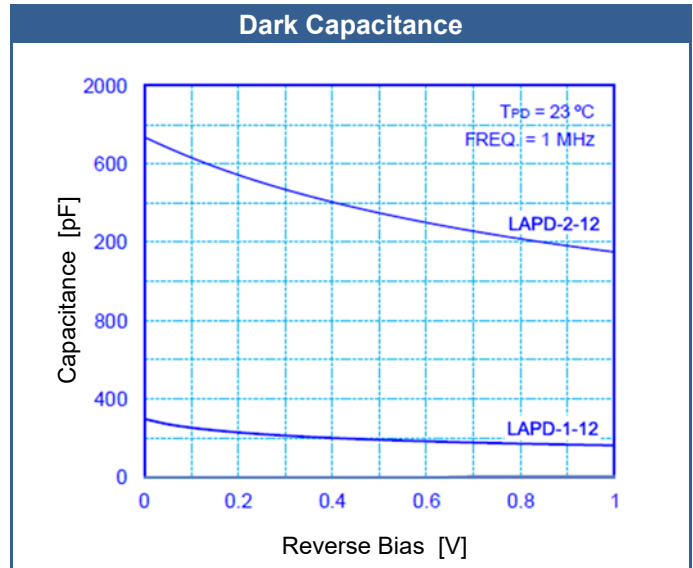
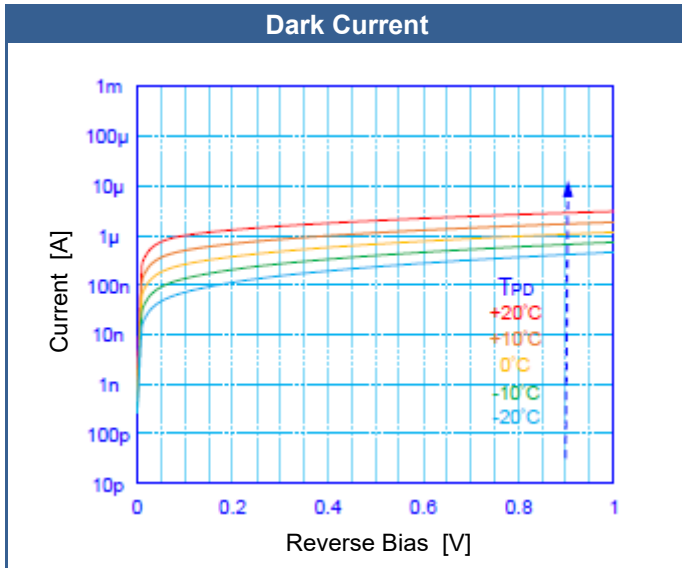
Electro-Optical Characteristics ($T_{CASE} = 23^\circ\text{C}$)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Spectral Range	λ		1.2		2.2	µm
Aperture Diameter	\varnothing			950		µm
Peak Sensitivity	λ_P	$V_R=0\text{ V}$		1.9		µm
Dark Current	I_D	$V_R=0.5\text{ V}$		2.5	5	nA
Shunt Resistance	R_{SH}	$V_R=10\text{ mV}$	20	40		MΩ
Capacitance	C_J	@ 1 MHz, $V_R=0\text{ V}$		450	600	pF
		@ 1 MHz, $V_R=0.5\text{ V}$		300	400	pF
3dB Bandwidth		$V_R=0.5\text{ V}$ (50Ω)	6	10		MHz
Responsivity	S_λ	1.55 µm, 0 V	0.90	0.95		A/W
		1.90 µm, 0 V	1.0	1.05		A/W
Saturation Power*	P_S	1.55 µm, 0 V, -0.2 dB	1	2		mW
Noise Equivalent Power	NEP	1.9 µm, 0 V, 1 KHz		3	5	$10^{-12}\text{ W}/\sqrt{\text{Hz}}$

* measured at the aperture with an $1/e^2$ beam diameter of 250 µm



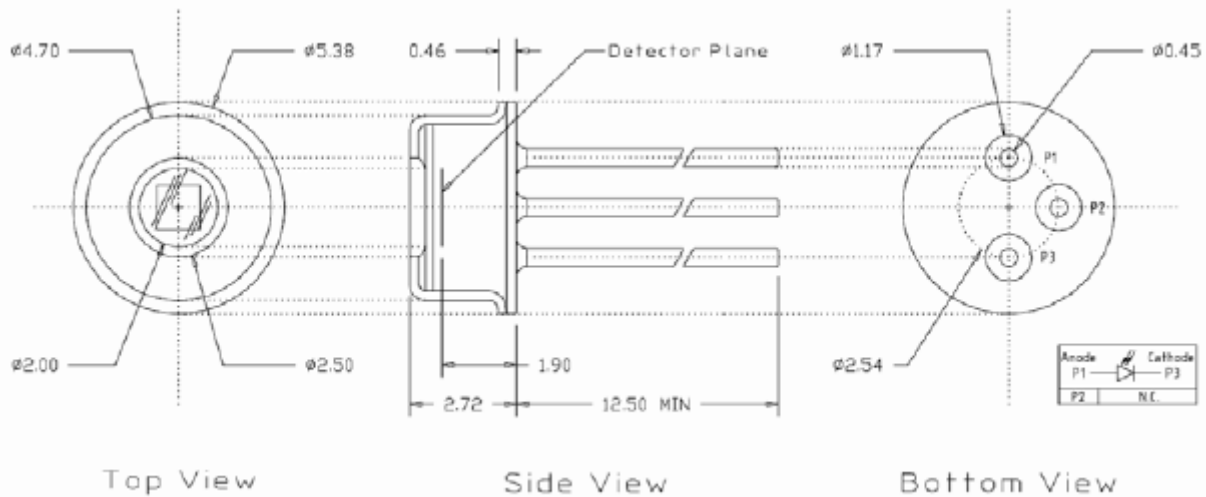
Performance Characteristics ($T_{CASE} = 25^{\circ}C$)





Outline Dimensions

TO-46



All dimensions in mm

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The above specifications are for reference purpose only and subjected to change without prior notice