ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76   1040 VIENNA   AUSTRIA
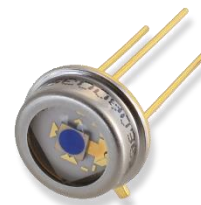## TEL. +43 I 586 52 43 -0, FAX. -44   OFFICE@ROITHNER-LASER.COM

LAPD-2-12-22-TO39

- **InGaAs PIN Photodiode**
- **Ø 1.9 mm active area**
- **1.2 – 2.2 µm spectral range**
- **Low Dark Current**
- **High Responsivity**

RoHS COMPLIANT   **Pb Pb-Free**

Description

LAPD-2-12-22-TO39 is an **InGaAs** PIN photodiode with an active area diameter of **1.9 mm**, offering a very low dark current and excellent spectral sensitivity range from 1.2 to 2.2 µm. **LAPD-2-12-22-TO39** comes in a **hermetically sealed** TO-39 Package with flat glass window. It is widely used for spectral analysis, power monitoring, SWIR camera, light detection, and LIDAR applications.

Absolute Maximum Ratings

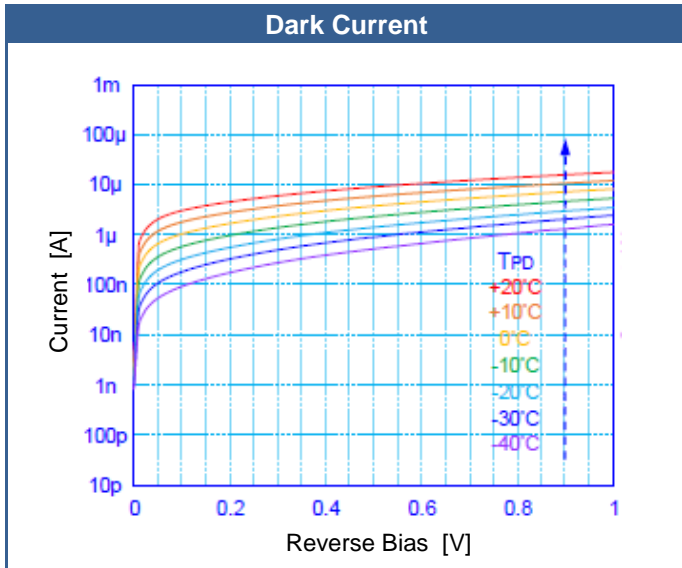| Parameter	Symbol	Value		Unit
Reverse Voltage	V_R	1		V
Reverse Current	I_R	10		mA
Forward Current	I_F	10		mA
Operating Temperature	T_{OPR}	- 40	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
Soldering Temperature (max. 5s)	T_{SOL}	max. 260		°C

ATTENTION
STATIC SENSITIVE DEVICES
HANDLE ONLY AT
STATIC WORK STATIONS

Electro-Optical Characteristics (T$_{CASE}$ = 23°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Spectral Range	λ		1.2		2.2	µm
Aperture Diameter	Ø			1850		µm
Peak Sensitivity	λ_P	V_R=0 V		1.9		µm
Dark Current	I_D	V_R=0.5 V		10	20	nA
Shunt Resistance	R_{SH}	V_R=10 mV	5	10		MΩ
Capacitance	C_J	@ 1 MHz, V_R=0 V		1800	2300	pF
		@ 1 MHz, V_R=0.5 V		1400	1800	pF
3dB Bandwidth		V_R=0.5 V (50Ω)	1.5	2		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	0.5	1.0		mW
Noise Equivalent Power	NEP	1.9 µm, 0 V, 1 KHz		6	10	10^{-12} W/√Hz

* measured at the aperture with an 1/e² beam diameter of 250 µm

Performance Characteristics (T$_{CASE}$ = 23°C)

Dark Current

Dark Capacitance

Responsivity Spectrum

Normalized Response Linearity
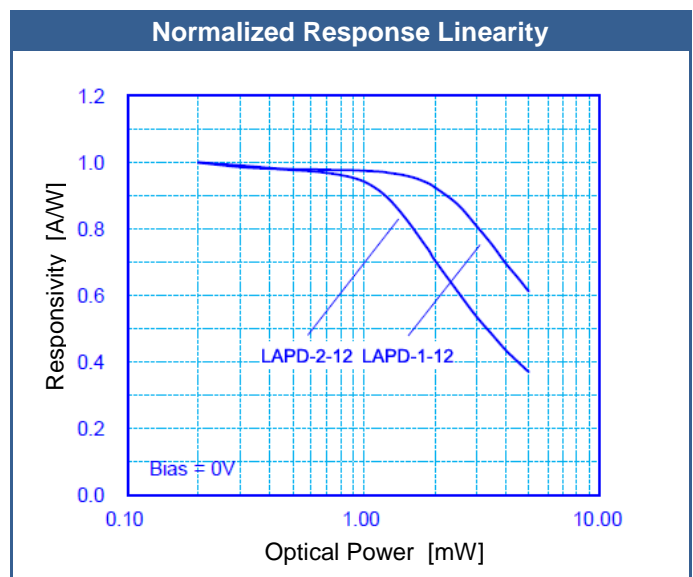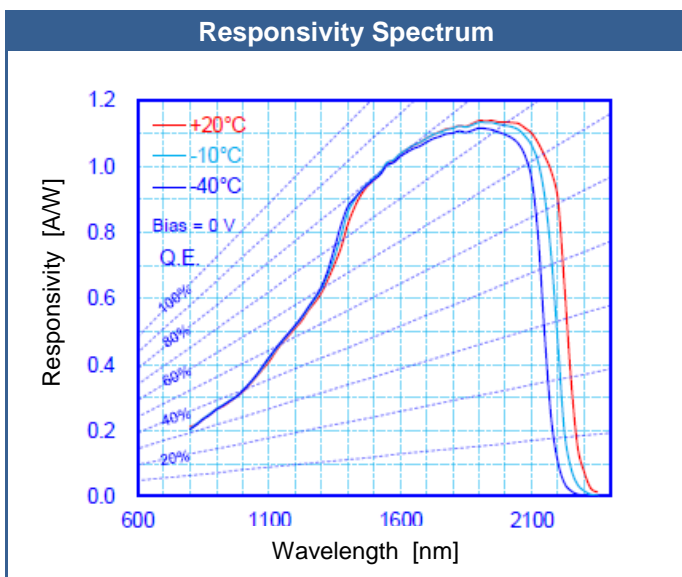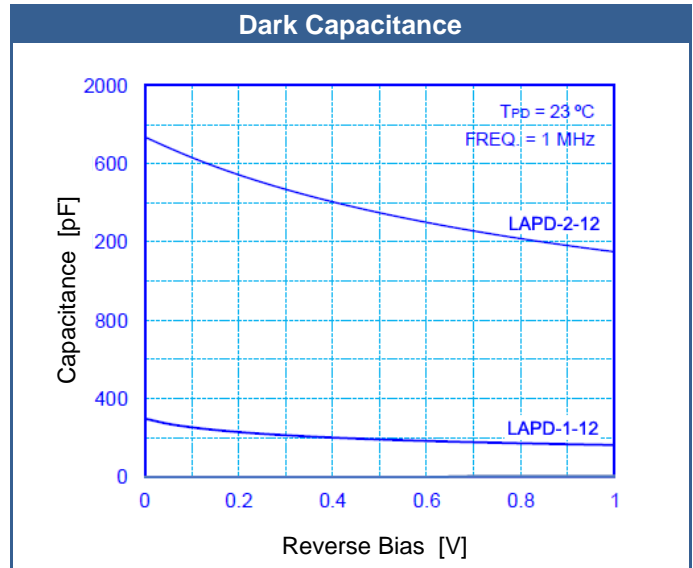
Outline Dimensions

TO-39

Ø9.14   Ø8.13   0.60   Detector Plane   Ø0.46   Ø1.75

45°

P1

P2

Ø5.90

2.13

3.03   12.08   Ø5.08

P3

P1	CATHODE
P2	ANODE
P3	CASE

Top View   Side View   Bottom View

All dimensions in mm