25G InGaAs PIN Photodiode TIA ROSA-LC Package

Description

A 25 Gb/s InGaAs PIN photodiode packaged with a transimpedance amplifier (TIA). This device is packaged in a TO-Can with LC receptable. It comes configured with a Flex PCB. The device features an optional LC-Flange receptacle for easy LC fiber optic cable insertion. Offering flat response and a broad temperature operating range.

Features

- TO-Can Package
- LC- Receptacle
- 25 Gbps
- Wide Temperature operating range
- Received signal strength indicator
- Single Bias Pin (no Bias-T needed)
- TIA Built in
- 1K Ohm Transimpedance Gain

Applications

- Telecommunications
- RF over Fiber (RFoF)

IMPORTANT NOTICE: more Information on warranty, changes, rights, notices, and other information are presented at the back of this data sheet. If the back sheet is not present, refer to www.nuphotonics.com for the company issued data sheet.

Electro-Optical Characteristics (T = 25°C**)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Supply Voltage	V_{cc}	-	3.3	3.6	V	
Supply Current	I_{cc}	-	26	35	mA	V_{cc} = 3.3 V
Response Spectrum	λ	1260		1600	nm	V_{cc} = 3.3 V
Bandwidth	BW	-	18	-	GHz	-3 dB bandwidth
Overload	OL	2.2		-	dBm	V_{cc} = 3.3 V
Sensitivity	Sen	-	-	-14.5	dBm	25.78 Gbps, 1310 nm, ER = 4 dB, BER = 10^{-5}
Optical Return Loss	ORL	-	-	-27	dB	CW = 1310 nm
RSSI Offset Current	I_{RSS}	-	-	100	nA	V_{cc} = 3.3 V
Responsivity	R	0.7	0.8	-	A/W	1310 nm, 50 % VBR, Pin -20 dBm
Dark Current	Id	-	100	-	nA	VBr
Output Impedance	Z^{-}_{o}	-	100	-	-	Differential
Maximum Output Voltage	Vo	-	300	-	mV_{p-p}	Differential
Low Frequency Cutoff	F_{low}	25	100	-	KHz	

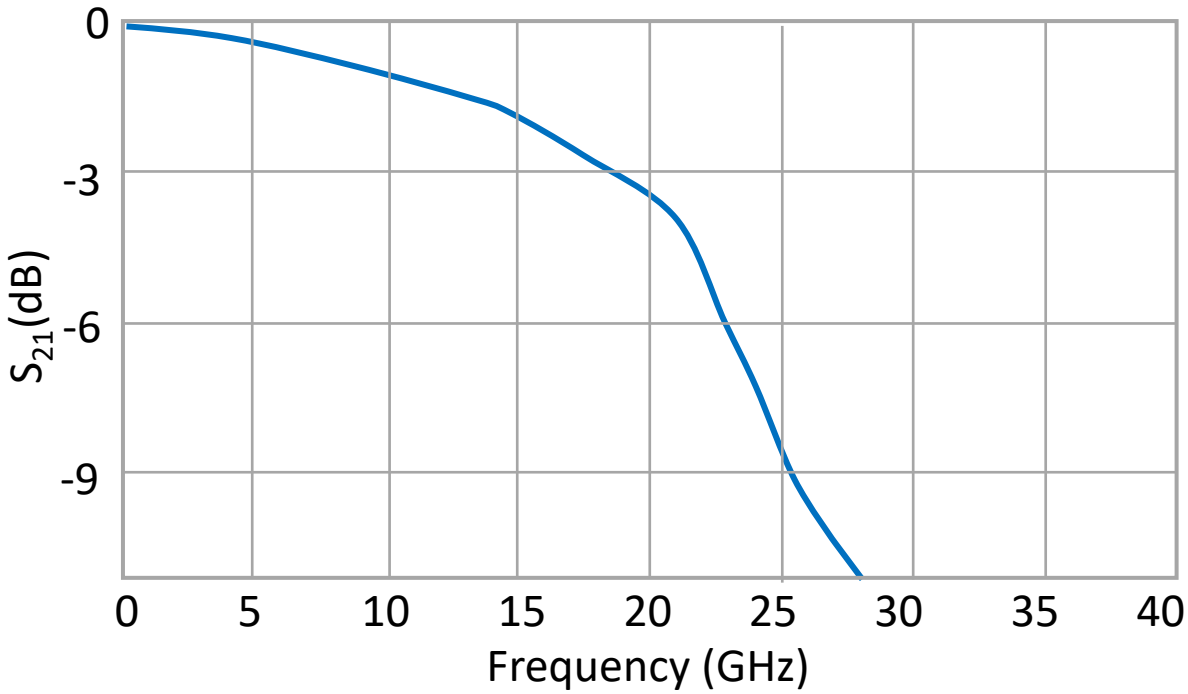
Absolute Maximum Rating (T = 25°C**)**

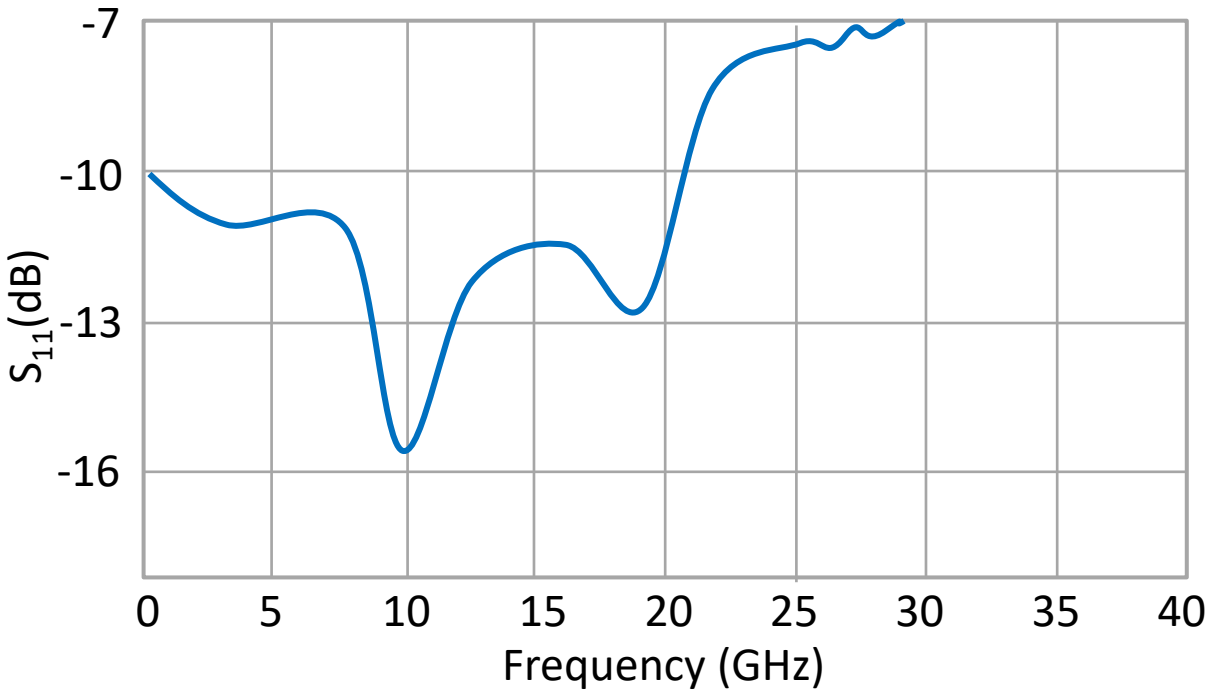
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V	-	-	3.6	V
Input Optical Power	P_{in}	-	-	5	dBm
Storage Temperature	T_{stg}	-	-40	90	°C
Storage Humidity	H_{stg}	-	-	85	% r.H.
Operating Temperature	T_{op}	-	-40	85	°C
Soldering Temperature	T_{st}	10 sec	-	260	°C
ESD Susceptibility		HBM	100	-	V

Operating at maximum operating specs for prolong periods of time will damage the device.

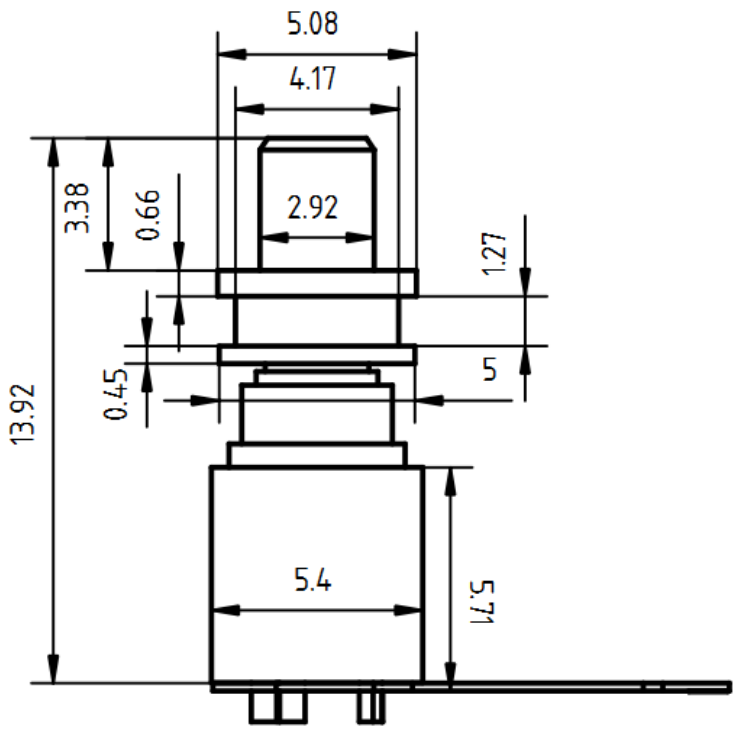
Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

RF performance dependent on PCB design and optimization. Data shown for Rogers ® RO3003 with Ground-backed Co-planner waveguide (GB-CPW). The GB-CPW was de-embedded. Single ended measurement, port two is terminated with 50 Ohm load. Normalized to 0.

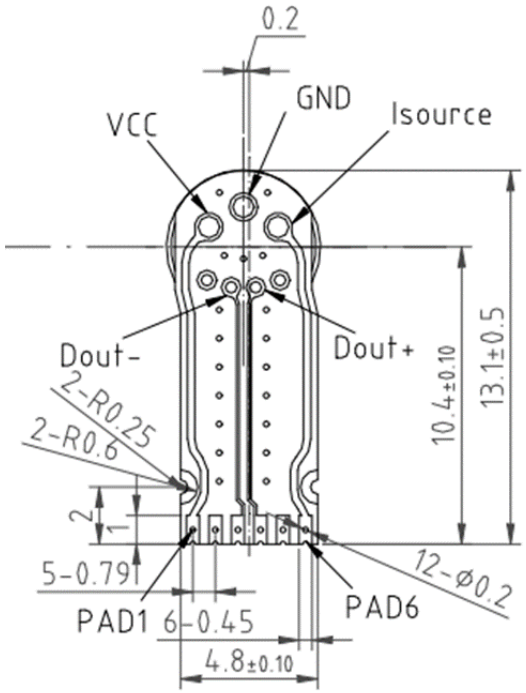




Device Dimensions (all units in mm)



Flexible PCB Pinout



Pad	Function
1	Vcc
2,5	GND
3	Dout (-)
4	Dout (+)
6	Isource

Device Nomenclature

P25T-TO-LC-X

Product Line –25G PIN photodiode W/ TIA

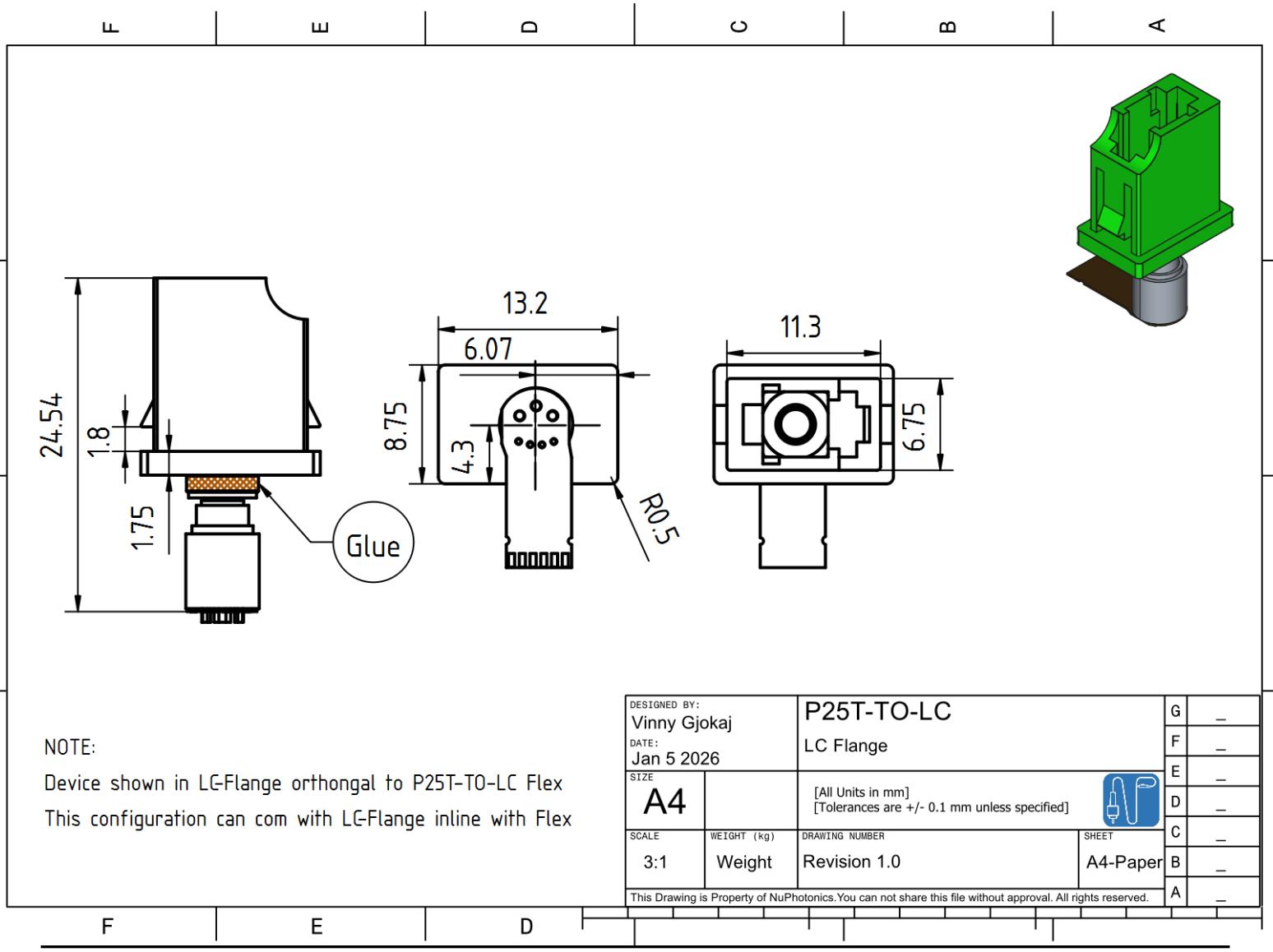
Device body style – TO-CAN

Flange
A – Without Flange
B – With Flange

Receptacle
(LC – Receptacle) Standard

Example – P25T-TO-LC-B
25G Pin Photodiode W/ TIA TO LC Receptacle with Flange

Mechanical Drawing



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Definitions: Product State

Alpha Build: Devices in Alpha build are in internal engineering build and testing stages. Major changes may happen for production build.

Beta Build: Devices in Beta build are for external customer and engineering sample testing stages. Minor changes may happen for production build.

Production Build: Customer ready devices. Small appearance changes may occur between devices.

Obsolete: Currently not supported.

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Revision History

1.4 – January 2026 – Included LC Flange drawing. Updated device Body drawing..

1.3 – March 2024 – Updated Mechanical drawing, Included low frequency data.

1.0 – December 2023 – Initial Release