NuPhotonics

Rev. 1.-0 – September 2025

25 G InGaAs PIN Photodiode ROSA-FC Package

Description

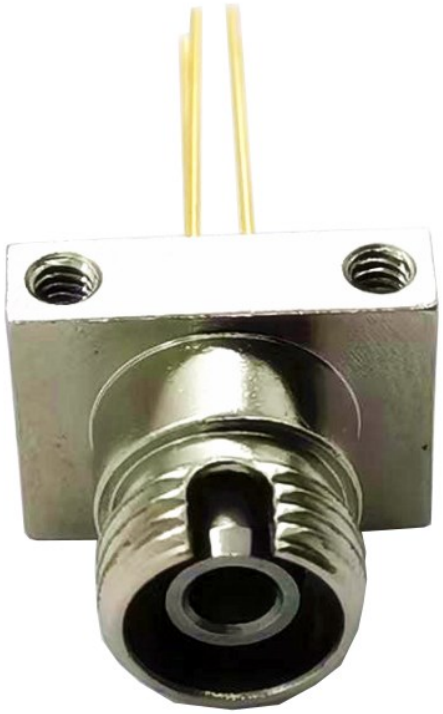
A 25 Gb/s InGaAs PIN photodiode package. This device is packaged in a TO-Can with FC bulkhead receptable. It comes configured with a Flex PCB. Offering flat response and a broad temperature operating range. This device can be easily soldered to a PCB for mechanically rigidity.

Features

- TO-Can Package
- FC- Receptacle
- 25 Gbps
- Low dark current
- High linearity
- Wide temperature operating range
- PCB solderable PINS
- 2 mounting screw points.

Applications

- 5G
- RF over Fiber (RFoF)



Photodiode Electro-Optical Characteristics (T_{op} 23 ± 3°c, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Supply Voltage	V_{cc}	3	5		V	
Supply Current	I_{cc}		1		mA	V_{cc} = 5 V Pin = 3 dBm
Response Spectrum	λ	1260		1610	nm	V_{cc} = 3.3 V
Bandwidth	BW		22		GHz	-3 dB bandwidth
Overload	OL		3		dBm	V_{cc} = 3.3 V
Sensitivity	Sen			-15	dBm	10.30 Gbps, 1310 nm, ER = 4.5 dB, BER = 10^{-12}
Optical Return Loss	ORL			-27	dB	CW = 1310 nm
Responsivity	R	0.7	0.8		A/W	1310 nm, 50 % VBR, M=2, Pin -20 dBm
Dark Current	Id		1		nA	V_{cc} =3.3V
Output Impedance[1]	Z_o		50		Ω	Single ended

1. Photodiode device is unterminated. Designed for optimal 50 Ω impedance match.

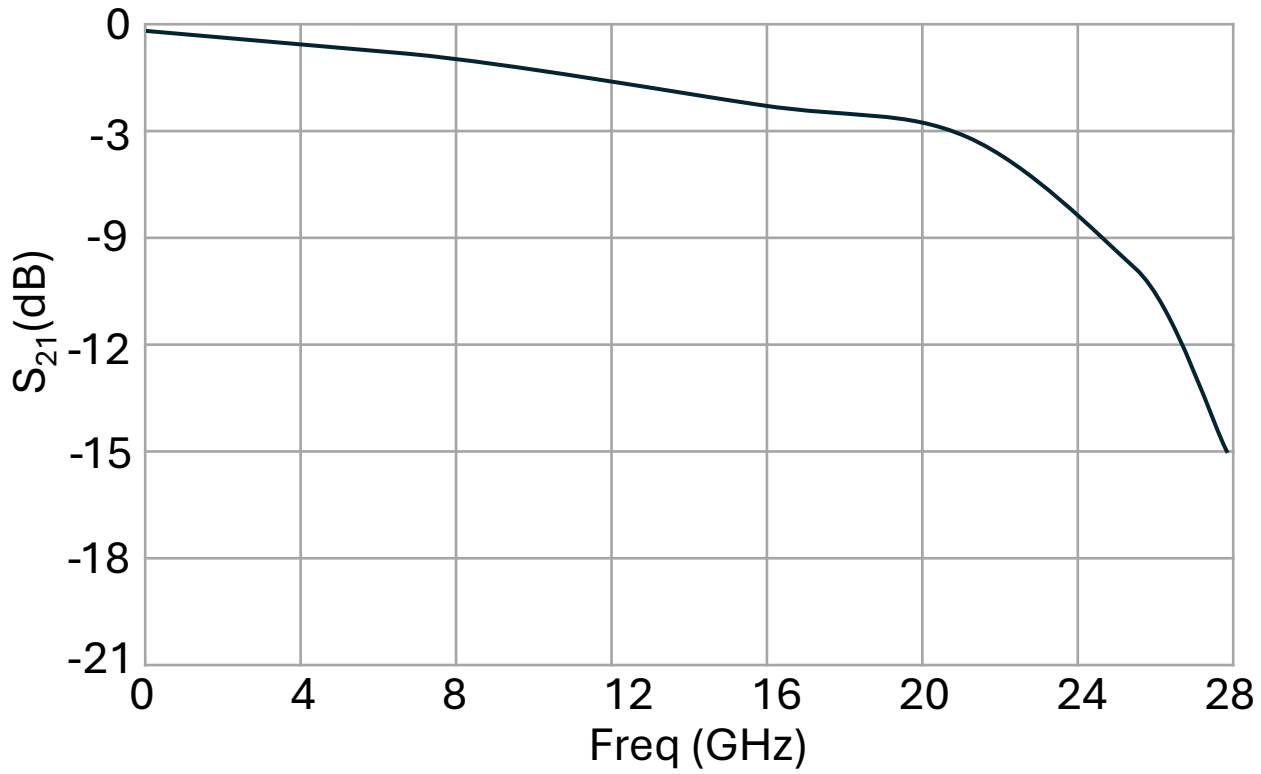
Photodiode Absolute Maximum Ratings

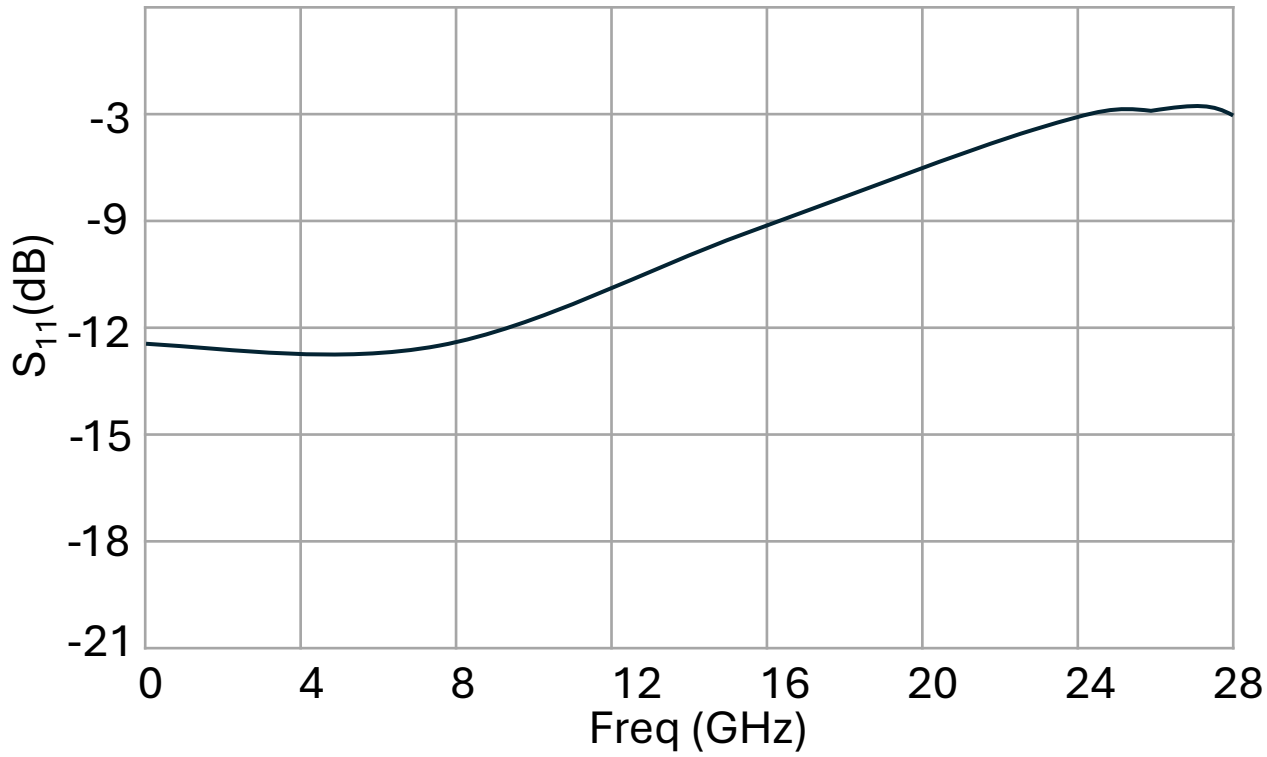
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V			20	V
Input Optical Power	P_{in}			5	dBm
Storage Temperature	T_{stg}		-40	90	°C
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-40	85	°C
Soldering Temperature	T_{st}	10 sec		260	°C
ESD Susceptibility		HBM	100		V

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

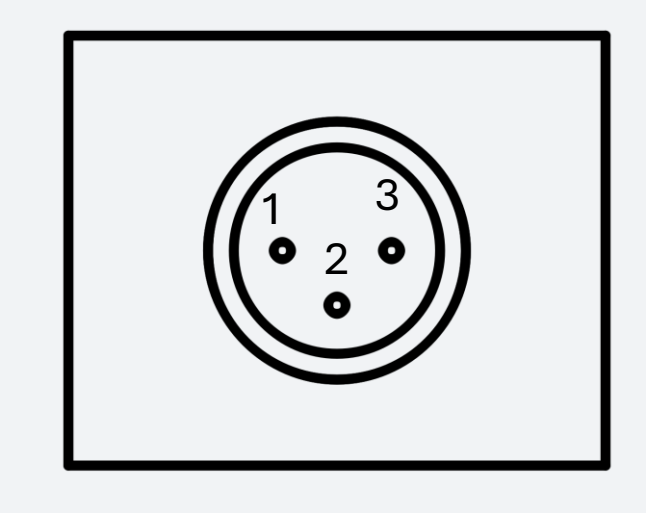
Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

RF performance dependent on PCB design and optimization. Data shown for Rogers ® RO3003 with Ground-backed Co-planner waveguide (GB-CPW). The device was soldered directly to the PCB.



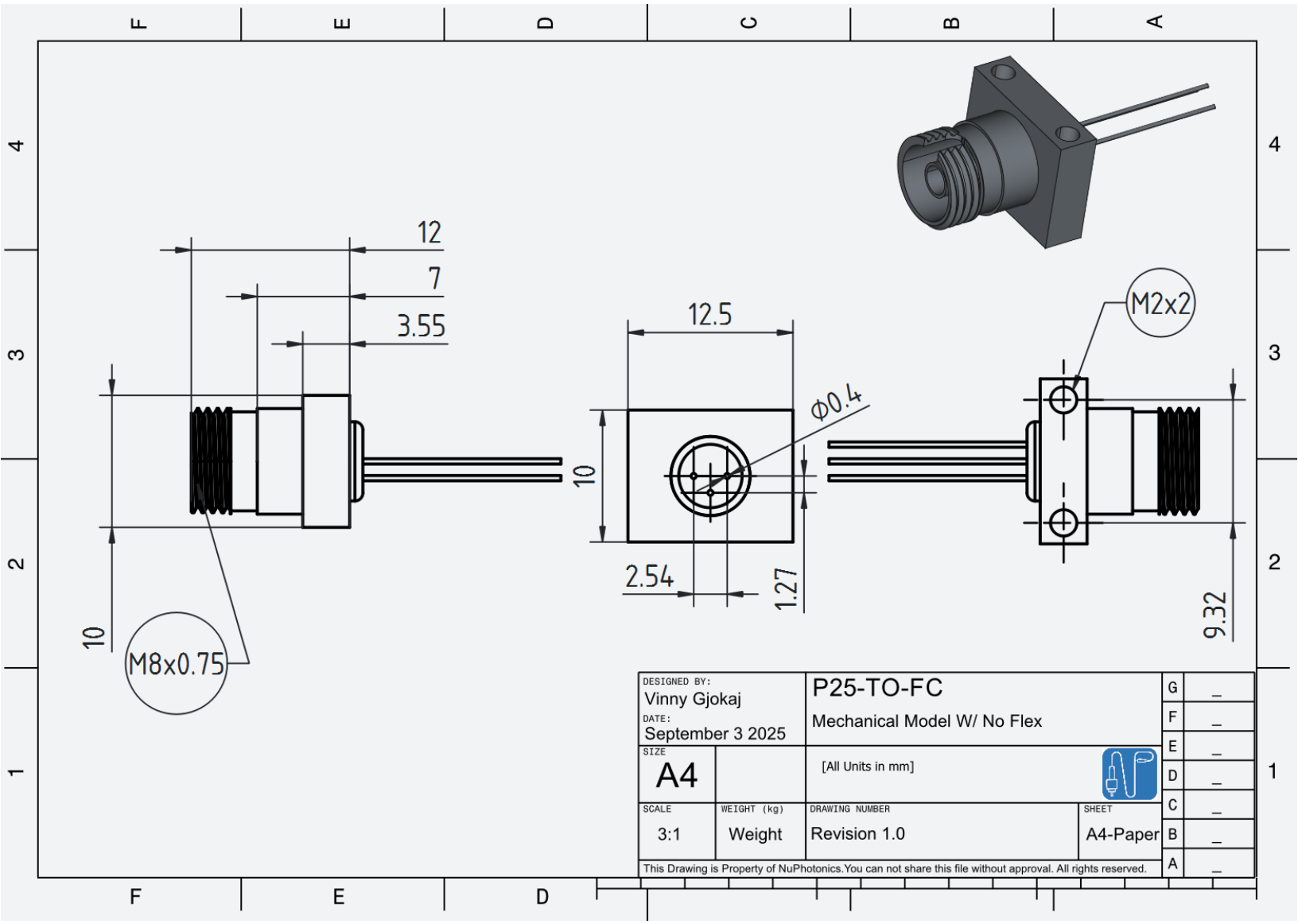


Device Pinout



Pin	Function
1	Gnd
2	PD -/Cathode
3	PD+/Anode

Mechanical Drawing



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