



10G InGaAs APD Photodiode TIA ROSA-LC Package

Description

A 10 Gb/s InGaAs APD photodiode packaged with a transimpedance amplifier (TIA). This device is packaged in a TO-Can with LC flange receptacle. Offering flat response and a broad temperature operating range. The device allows a LC connector to be easily connected. The device is configured for vertical mounting on PCB. Flexible PCB can be soldered for horizontal mounting.

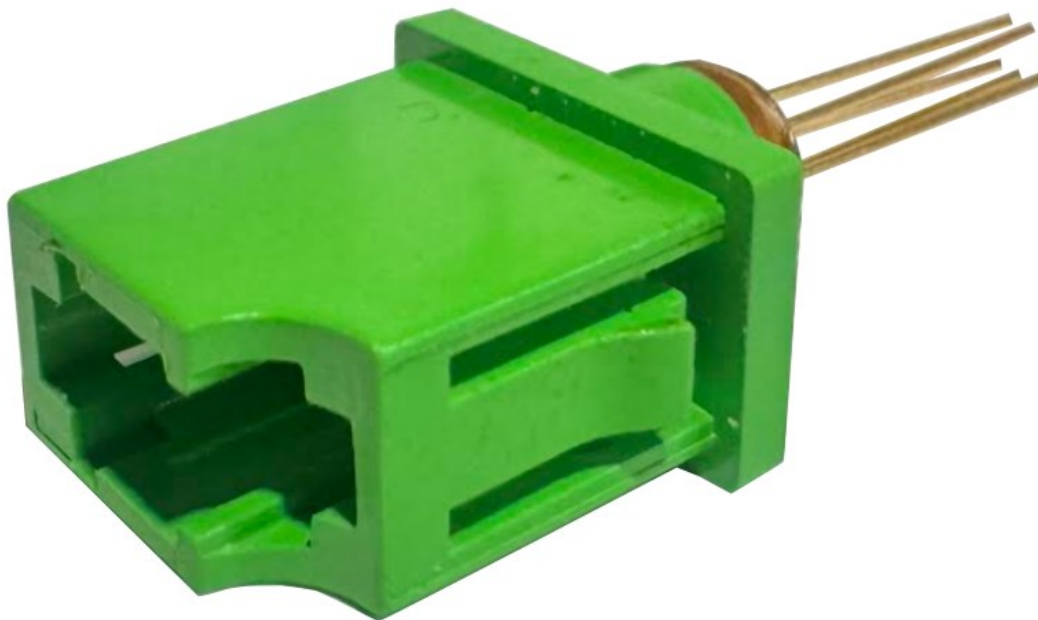
Features

- TO-Can Package
- LC Flange Receptacle
- 10 Gbps
- Wide temperature operating range
- TIA Built in
- 4K Ohm Transimpedance Gain
- PCB solderable mount
- -30 dBm sensitivity



Applications

- 5G
- RF over Fiber (RFoF)



Photodiode Electro-Optical Characteristics ($T_{op} 23 \pm 3^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Supply Voltage	V_{cc}	2.9	3.3	3.6	V	
Supply Current	I_{cc}	-	26	30	mA	$V_{cc} = 3.3 \text{ V}$
Response Spectrum	λ	1260	-	1610	nm	$V_{cc} = 3.3 \text{ V}$
Bandwidth	BW	-	8	-	GHz	-3 dB bandwidth
Saturation	Sat	-	3	-	dBm	$V_{cc} = 3.3 \text{ V}$
Sensitivity	Sen	-	-30	-27	dBm	10.30 Gbps, 1310 nm, ER = 4.5 dB, BER = 10^{-12}
Optical Return Loss	ORL	-	-	-27	dB	CW = 1310 nm
RSSI Offset Current	I_{RSS}	-	-	100	nA	$V_{cc} = 3.3 \text{ V}$
Responsivity	R	0.7	0.8	-	A/W	1310 nm, 50 % VBR, M=2, Pin -20 dBm
Dark Current	I_d	-	5	30	nA	VBr
Output Impedance	Z_o	-	100	-		Differential
Maximum Output Voltage	V_o	-	300	-	mV _{p-p}	Differential
Low Frequency Cutoff	F_{low}	-	10	-	KHz	

Photodiode Absolute Maximum Ratings

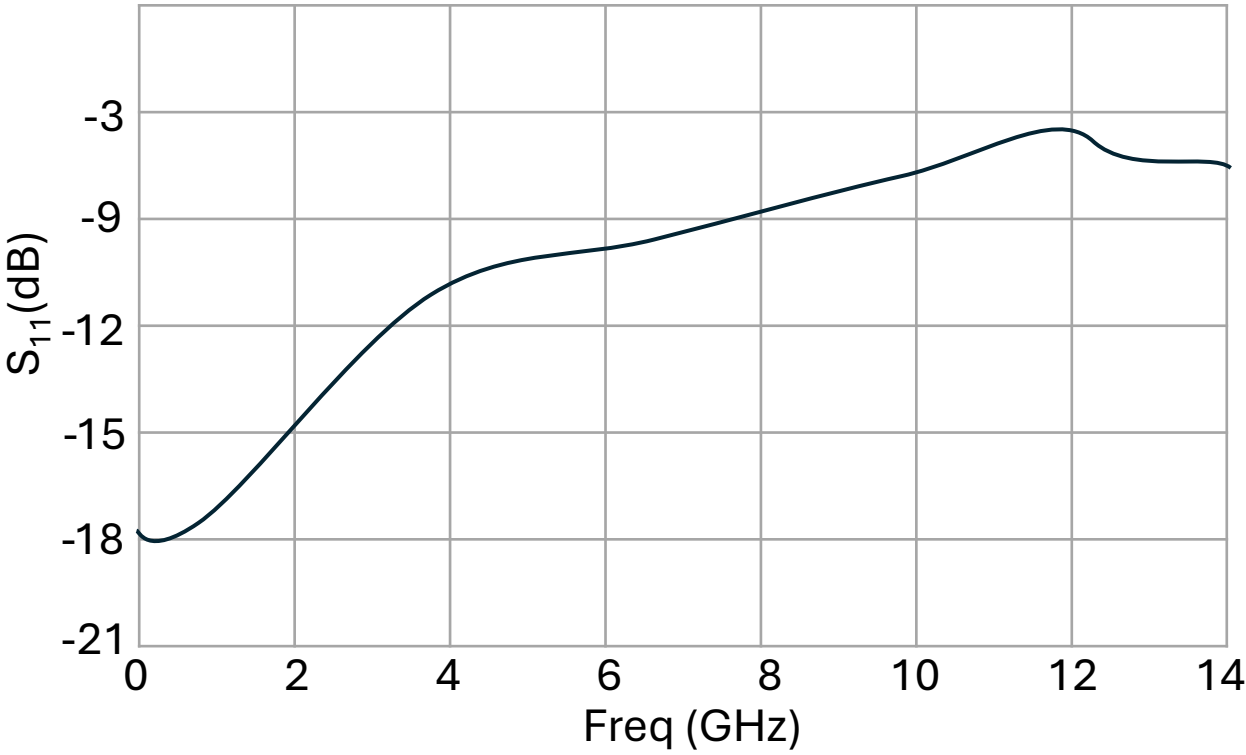
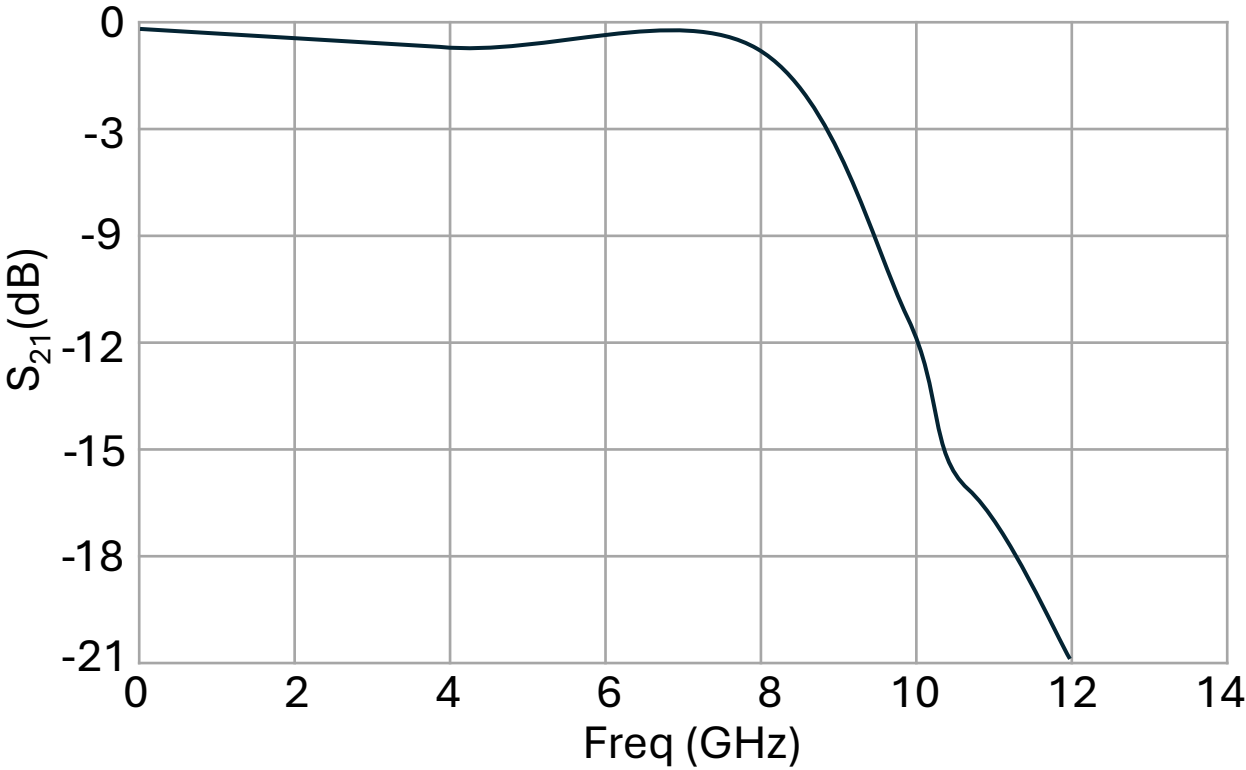
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V	-	-	3.6	V
V_{APD}	V	-	-	30	V
Input Optical Power	P_{in}	-	-	5	dBm
Storage Temperature	T_{stg}	-	-40	90	$^{\circ}\text{C}$
Storage Humidity	H_{stg}	-	-	85	% r.H.
Operating Temperature	T_{op}	-	-40	85	$^{\circ}\text{C}$
Soldering Temperature	T_{st}	10 sec	-	260	$^{\circ}\text{C}$
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-planar waveguide (GB-CPW). The GB-CPW was de-embedded. Single ended measurement, port two is terminated with 50 Ohm load



DESIGNED BY: Vinny Gjokaj		P10T-TO-LC 10G Photodiode with TIA ROSA-LC		G	—
DATE: November 11 2025				F	—
SIZE	A4	[All Units in mm] [Tolerances are +/- 0.1 mm unless specified] 		E	—
SCALE				D	—
WEIGHT (kg)				C	—
5:1	Weight	DRAWING NUMBER	SHEET	B	—
		Revision 1.0	A4-Paper	A	—
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Revision History

1.0 – November 2024 – Initial Release

1.1 - May 2026 – Updated pin spacing, minor grammatical error corrections