25G InGaAs Avalanche Photodiode TIA ROSA-LC Package

Description

A 25 Gb/s InGaAs avalanche 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. Offering flat response and a broad temperature operating range.

Features

- TO-Can Package
- LC- Receptacle
- 25 Gbps
- Wide Temperature operating range
- Photodiode bias Pin
- TIA Built in
- 1K Ohm Transimpedance Gain

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}		3.3	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		21		GHz	-3 dB bandwidth
Overload	OL	2.2			dBm	V_{cc} = 3.3 V
Sensitivity	Sen			-22	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, M=2, Pin -20 dBm
Dark Current	Id		150		nA	Vbr
Output Impedance	Z_o		50			Single Ended
Maximum Output Voltage	Vo		300		mV_{p-p}	Differential
Low Frequency Cutoff	F_{low}	25	100		KHz	

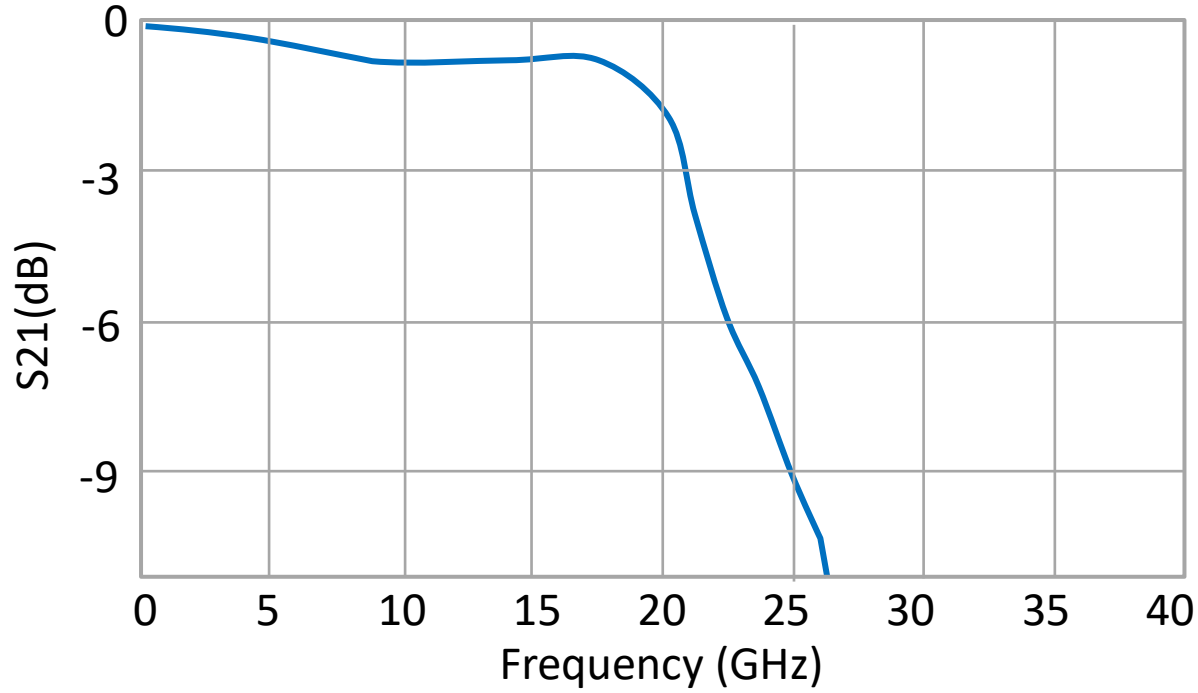
Photodiode Absolute Maximum Ratings

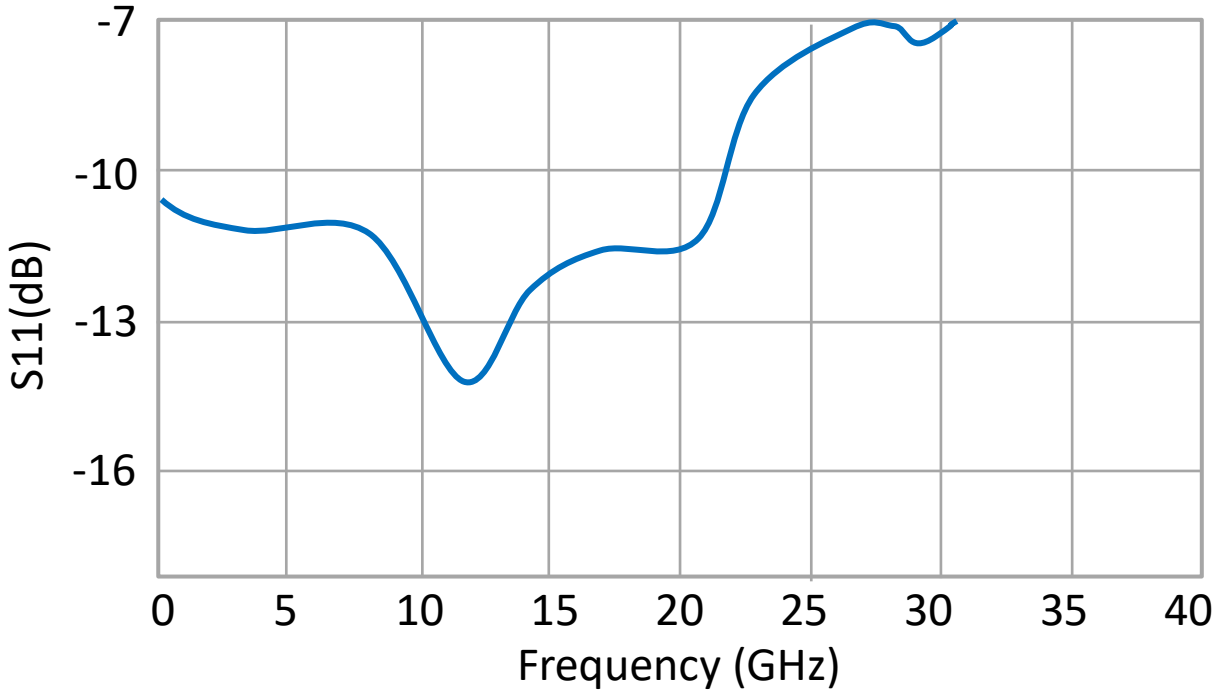
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	Vapd			40	V
Input Optical Power	P_{in}			5	dBm
Storage Temperature	T_{stg}		-40	90	°C
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-40	85	°C
Soldering Temperature	T_{st}	10 sec		260	°C
ESD Susceptibility		HBM	100		V

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

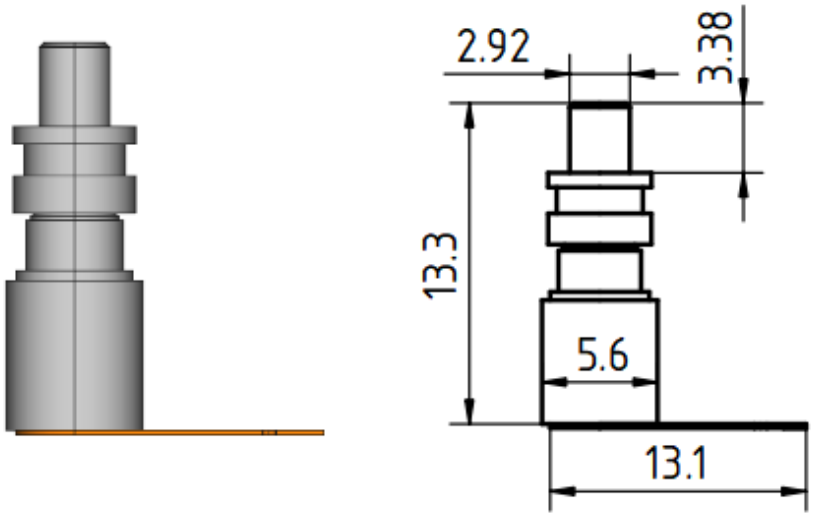
Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

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.

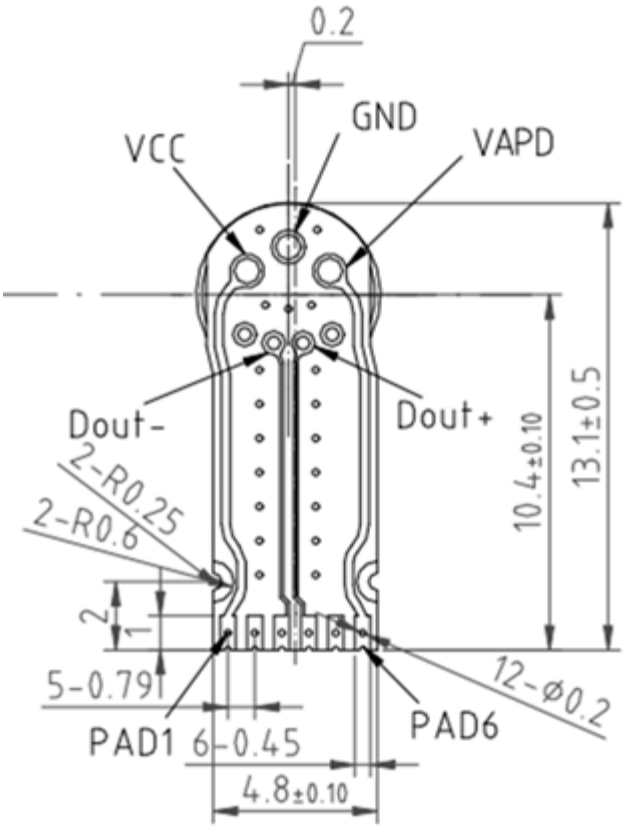




Device Dimensions (all units in mm)

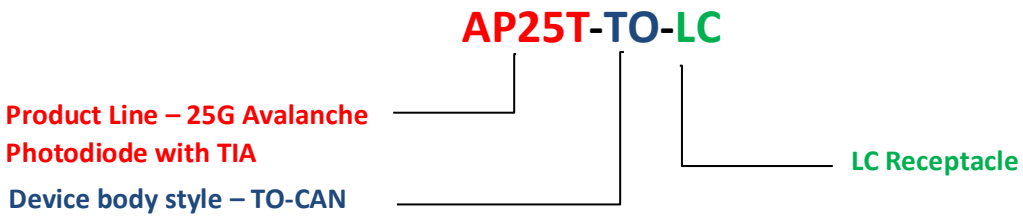


Device Pin Configuration (Bottom View)



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

Device Nomenclature



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