50G InGaAs Photodiode RF ROSA Package

Description

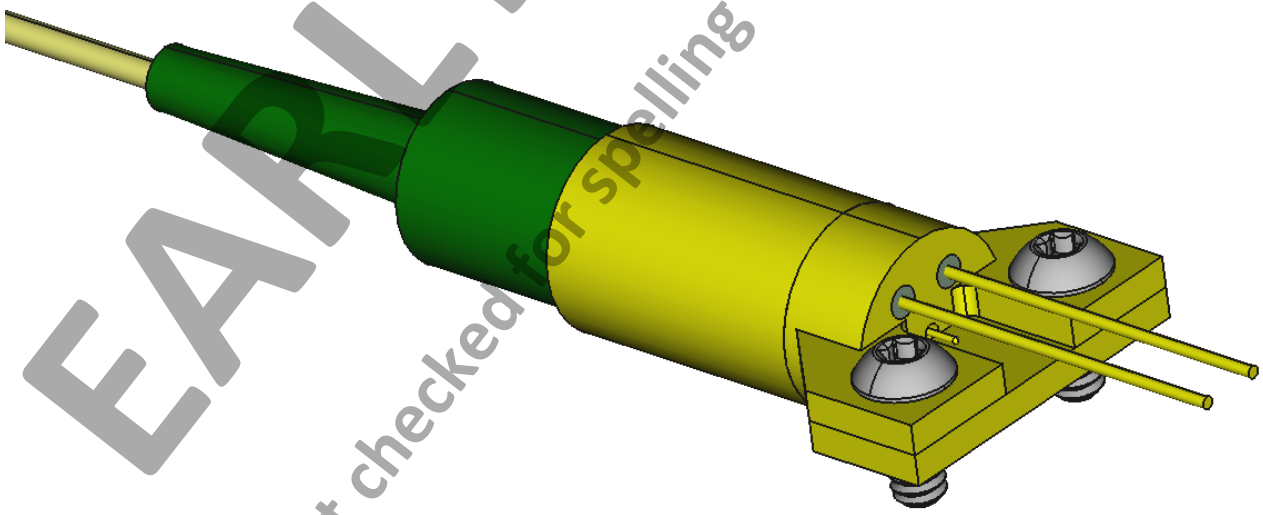
50G InGaAs photodiode built-in a RF TO-Can package. This delivers flat performance with broad temperature operating range. Utilizing our proprietary edge mounted TO-can package this ruggedized design offers great RF performance in a TO-package. Low parasitic RF design shows negligible ringing in pulse response. The mechanical clamp allows the use of PCB thickness ranging from 0.1-1.6mm. RF pin does not need to be soldered to PCB, this allows for easy mounting and replacement. The device body is Kovar (4J29) with AU finish.

Features

- RF TO-Can Package
- Single mode Pigtail cable
- Low Dark current
- High Bandwidth
- Flat response
- High Linearity
- Easily mounted and removed

Applications

- 5G/6G
- Datacenters
- RF over Fiber (RFoF)



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Response Spectrum	λ	1100		1650	nm	
Dark Current	I_d		0.25	4.0	nA	Vr = 5.0 V
Reverse Breakdown Voltage	V_{BR}	20			V	I = 10 µA
Responsivity	Re	0.6			A/W	λ = 1310 P_{in} 0.5 mW V = 1.0v
Bandwidth	BW		50		GHz	λ = 1550 P_{in} 0.5 mW V = 2.5v R_L = 50Ω at - 3 dB
Capacitance	C_p		40		fF	F = 1 MHz V = 4.0 v
Saturation power	P			10	dBm	Vr = 5V

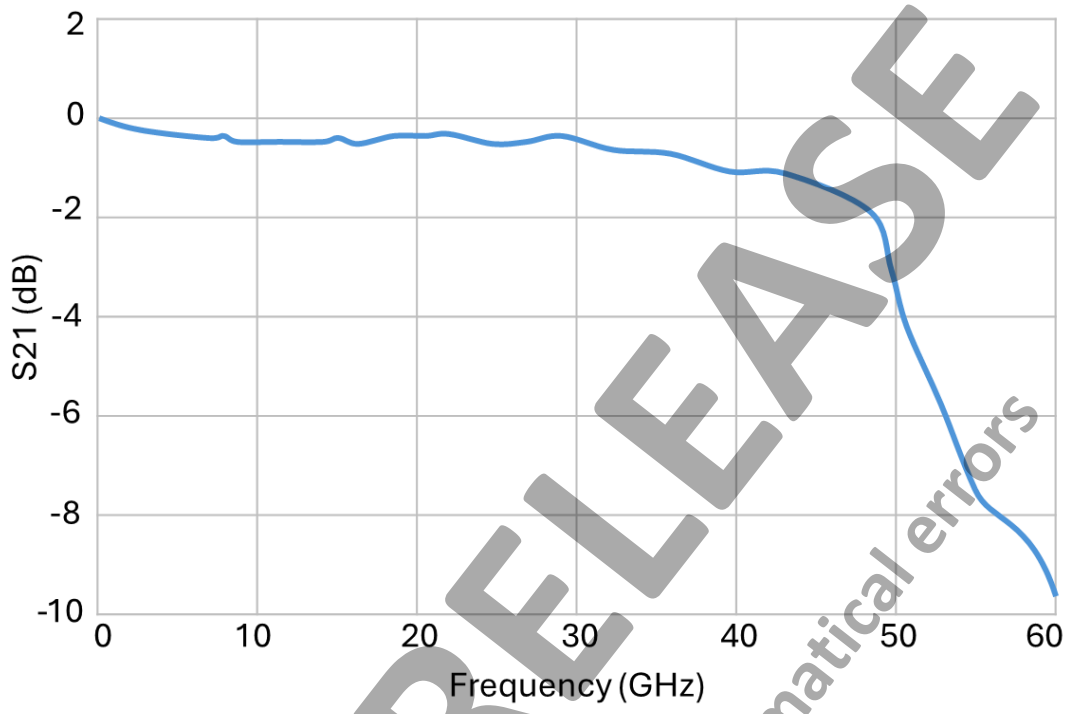
Absolute Maximum Ratings

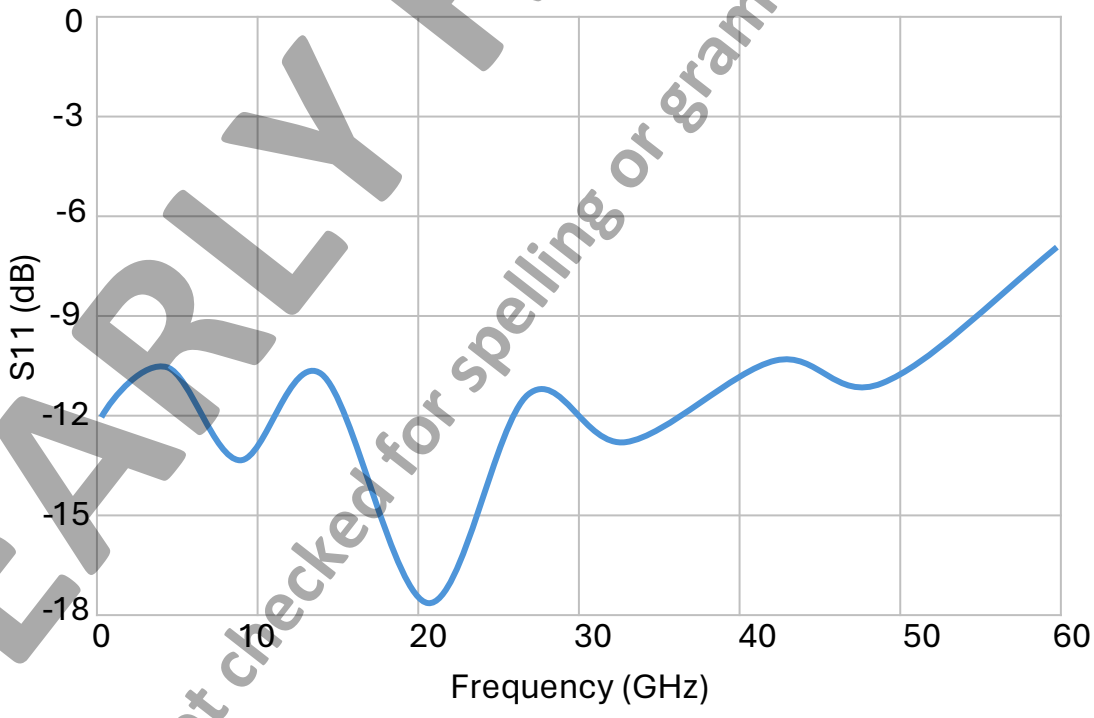
Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	V_r			10	V
Forward Current	I_F			10	mA
Reverse Current	I_R			5	mA
Optical Input power	P_{in}			10	mW
Storage Temperature	T_{stg}		-25	90	°C
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-10	80	°C
Soldering Temperature	T_{st}	60 sec		200	°C
ESD Susceptibility		HBM		200	V

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

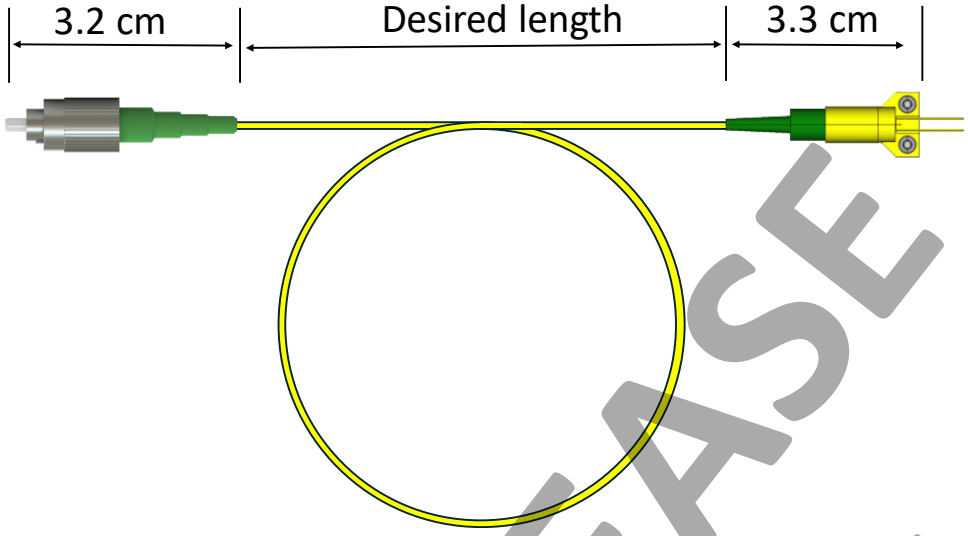
Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

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.



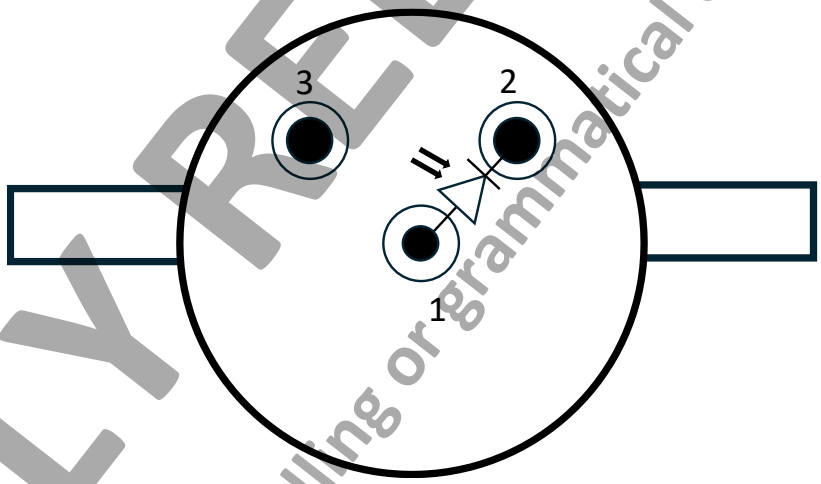


Device Dimensions



Connector length for FC/APC Connector

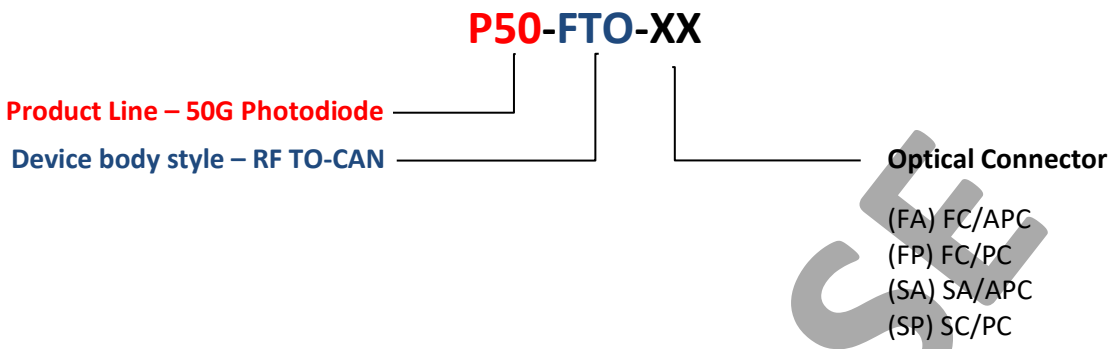
Device Pin Configuration (Internal View)

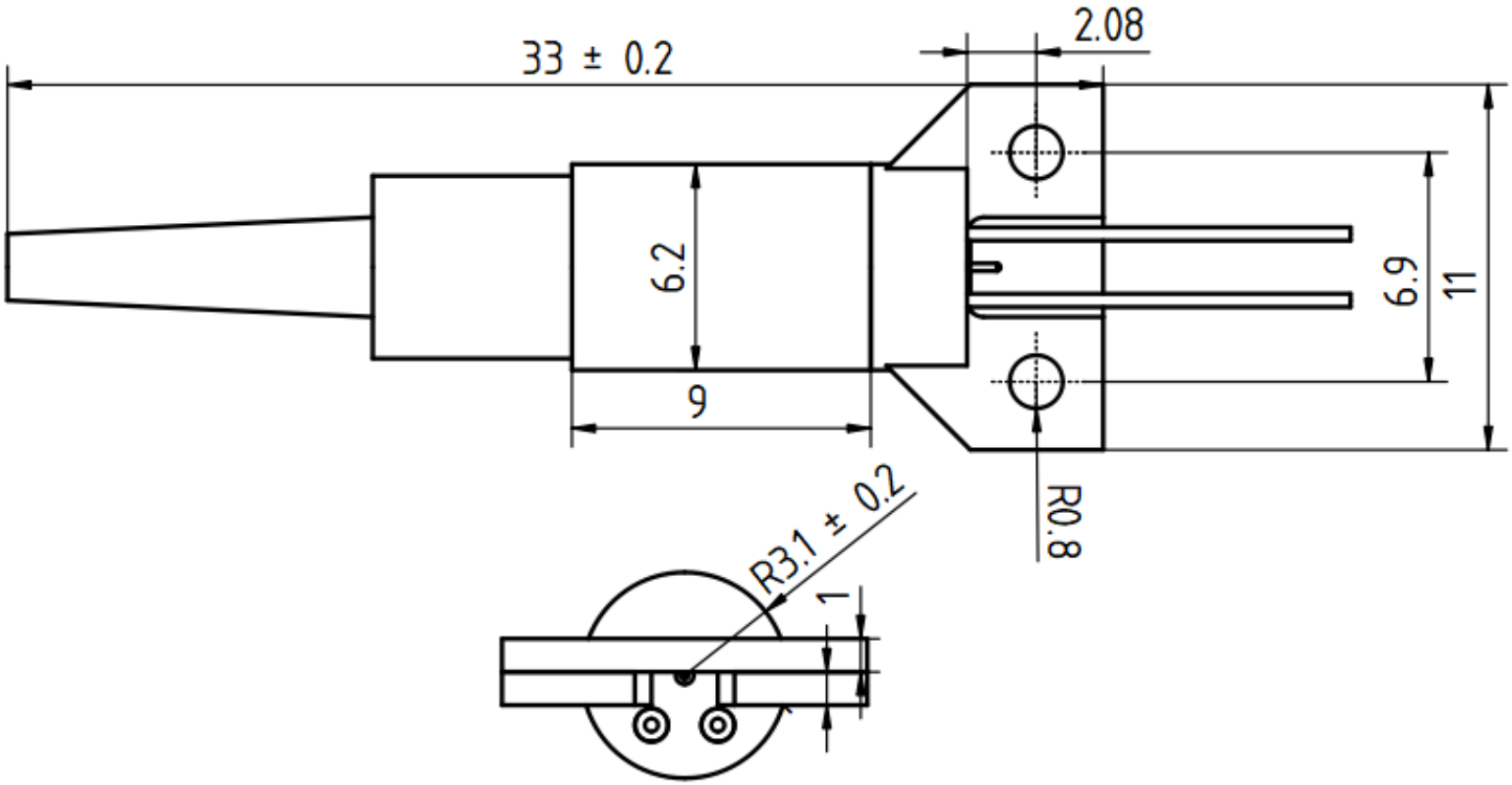


Pin Number	Function
1	RF Out/PD Anode (+)
2	PD Cathode (-)
3	Ground

Table 1: Device Pin out

Device Nomenclature





DESIGNED BY: Vinny Gjokaj DATE: March 10 2024		RF- To-Can RF-TO-Package_With DC Pins	
SIZE A4		[All Units in mm] [Tolerances are +/- 0.1 mm unless specified]	
SCALE 5:1	WEIGHT (kg) Weight	DRAWING NUMBER Revision 1.0	SHEET A4-Paper

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