ExOptronics, Inc
www.exoptronics.com
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EX-D30X-X High Speed Photodiode Module (rev 006)

Description

EX-D30X-X is an InGaAs-based photodiode module, which is designed for high speed (up to 23 GHz) analog optical transmission systems. The package is hermetically sealed with a SMA compatible RF connector.

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Key features

- Wide band application, up to 23 GHz capability
- High optical power injection capability
- High breakdown voltage
- Low Noise
- Low dark current
- Hermetically sealed, SMA output
- Built-in Bias T

Applications

- High speed fiber optical communication system
- Microwave photonics link
- High speed test and measurement and other analog application.

Absolute Maximum Rating:

Parameter	Sym.	Condition	Rating	Unit
Storage Temperature	T_s	-	-40 to +100	°C
Operating Temperature	T_{op}	-	-40 to +85	°C
Optical Input Power	P_{in}	unbiased	20	mW
		V_B =7.5V	30	mW
Reverse Voltage	Vr	-	< 20	V
Forward Voltage	V_f	-	< 0.5	V
Bending Radius		G.657.A1 compliant	>10	mm
Lead soldering temperature	T_p	-	<260	°C
Lead soldering time	t_p	-	<10	Sec

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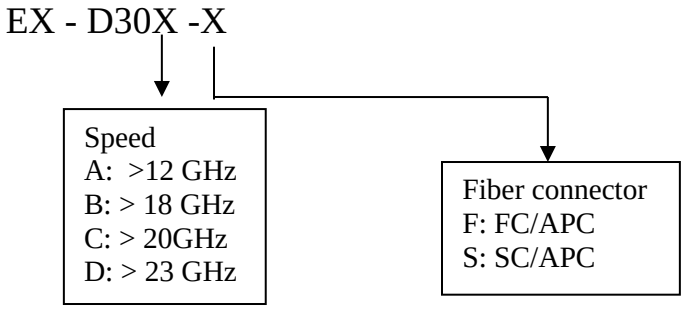
Electro-Optical Characteristics:

(Tested under Tc=25°C V_B=5V unless otherwise specified.)

Parameter	Symbol	Condition		Min	Typ.	Max	Unit
Wavelength range	λ			1200		1650	nm
Responsivity	R	λ = 1310nm	D30A	0.80	0.85	-	mA/mW
			D30B&C	0.70	0.75		
			D30D	0.6	0.65		
		λ = 1550nm	D30A	0.90	0.95		
			D30B&C	0.80	0.85		
			D30D	0.65	0.75		
Dark Current	I_d	V_B = 5V		-	-	20	nA
3dB Bandwidth	BW	D30A (V_B=5V)		12	-	-	GHz
		D30B (V_B=5V)		18	-	-	GHz
		D30C (V_B=5V)		20	-	-	GHz
		D30D (V_B=5V)		22	-	-	GHz
S_{21} Frequency Response Flatness[1)]	Ripple	1 GHz to (f_{3dB} – 2) GHz		-	-	1	dB
	dBp-p			-	-	3.5	dBp-p
Impedance	Z				50		Ω
Electrical Return Loss	ERL	V_B= 5V		-8	-12		dB
DC Bias Voltage	V_B			5		7.5	V
Optical Return Loss	ORL					-40	dB
Optical Input Power[2)]	P_{in}	V_B= 7.5V		-	-	18	mW

1) S_{21} Frequency Response: ripple: resonant peaks/dips, dBp-p: total peak to peak S_{21} difference.
2) While the max optical input power can be higher than these spec limits if properly biased (see also the max rating table above), the spec values here are determined by unbiased conditions, given that it can be hard, in practice, to guarantee that there will be no situation where light hits the photodetector when not biased.
3) 1m long fiber length FC/APC is standard, other connectors are available upon the request

Ordering Options:



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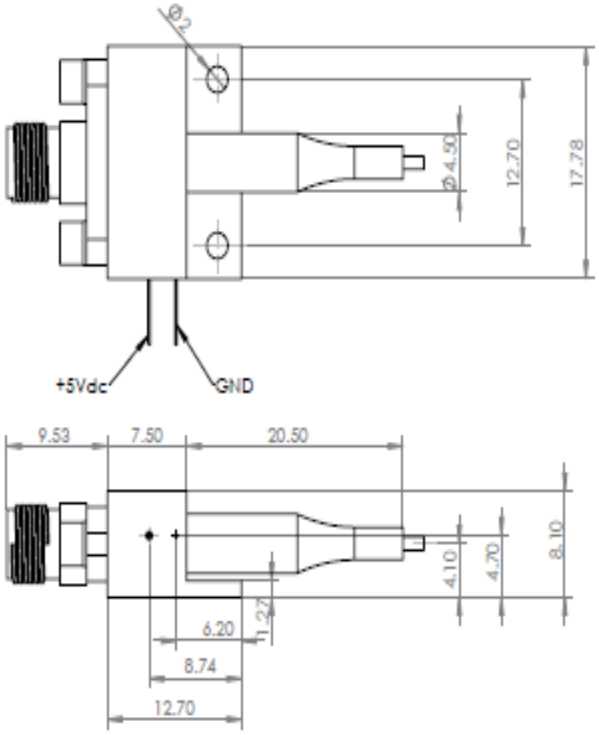
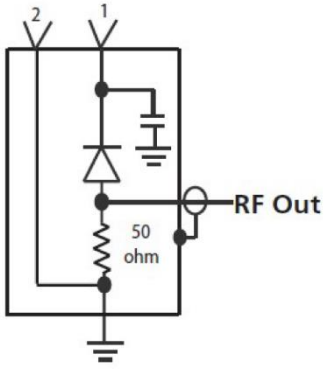
Outline drawing (unit: mm)



Electrical Schematic



Pin assignment

Pin	Symbol	Description
1	V_b	Bias Voltage for PD
2	GND	Case Ground

