

InGaAs APD-TIA Receivers

KPDXA1GK-T

Characteristics

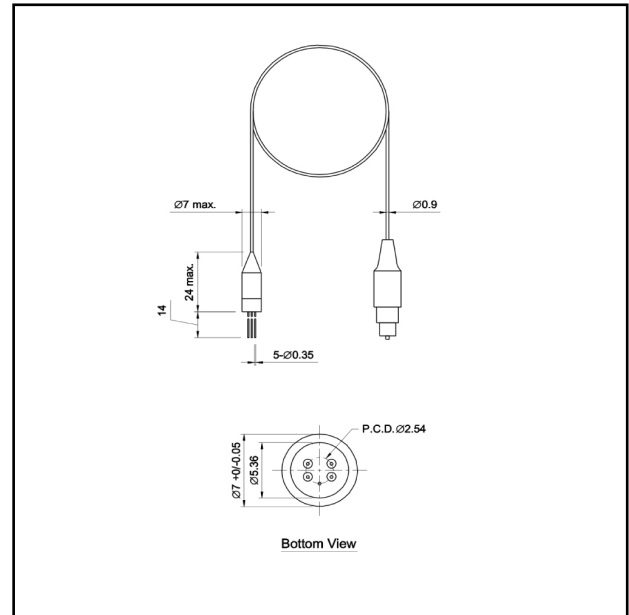
- High sensitivity (-38dBm)
- Differential output (50 Ω)
- 5 pin coaxial package

Applications

- Laser Imaging Detection and Ranging (LIDAR)
- Measurement of very weak light
- Spectroscopy, Fluorescence, and Medical Analysis

Package

- PIGTAIL



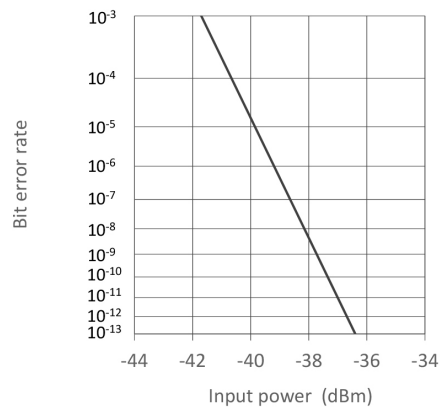
Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Conditions
APD Reverse voltage	V_R	0 to V_B	V	-
Reverse current	I_R	2	mA	-
Power supply	V_{cc}	-0.5 to 6.0	V	-
Operating temperature	T_{opr}	-40 to +85		-
Storage temperature	T_{stg}	-40 to +85		-

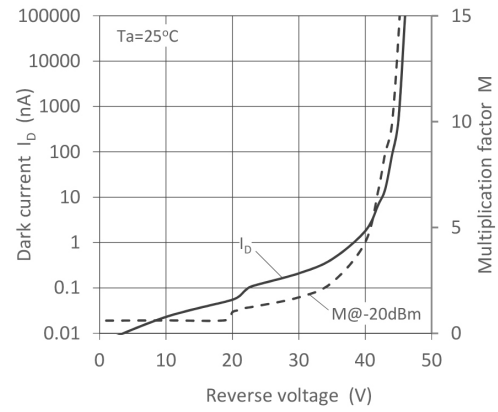
Electrical and Optical characteristics ($T_a=25$ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Sensitive wavelength		900	-	1700	nm	-
Responsivity	R	0.8 0.9	0.85 0.95	-	A/W	=1310nm M=1 =1550nm M=1
Dark current	I_D	-	10	50	nA	$V_R=V_B \times 0.9$
Breakdown voltage	V_{BR}	30	45	55	V	$I_D=10\mu A$
Temperature coefficient of V_B	V_{BR}/T	-	0.09	0.12	V/	-
Operating voltage	V_{op}	3.1	3.3	3.5	V	-
Supply current	V_{BR}/T	32	42	53	mA	-
Bit rate	B_R	-	1.25G	-	bps	-
Bandwidth @-3dB	BW	0.75	0.85	-	GHz	$R_L=50$, $P_i=-10dBm$, M=10
Optical sensitivity	P_{min}	-	-38	-	dBm	Differential BER= 10^{-10} M=10 $B_R=1.25Gbps$
Differential output voltage	V_O	320	400	480	mVpp	Differential $R_L=100$
Transimpedance	Z_t	-	50	60	k	differential

Bit Error Rate



Dark Current - Reverse Voltage



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