

## InGaAs APD-TIA Receivers

### KPDXA2GK-H33

#### Characteristics

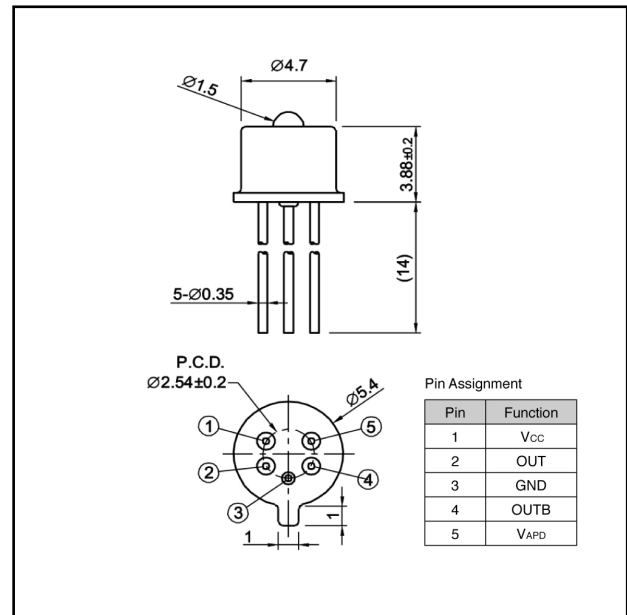
- High sensitivity (-38dBm)
- Differential output (50  $\Omega$ )
- 5 pin coaxial package

#### Applications

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

#### Package

- TO-CAN



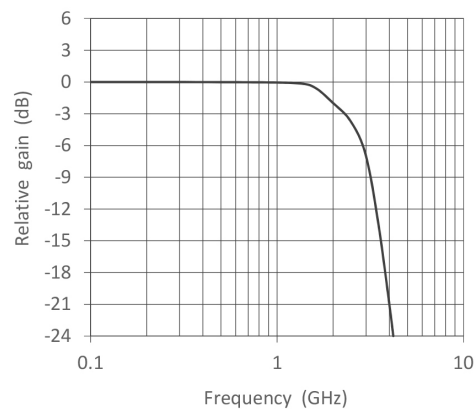
## Absolute Maximum Ratings

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		-

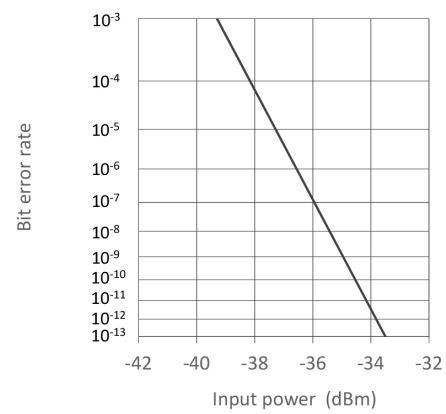
Electrical and Optical characteristics ( $T_a=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Sensitive wavelength		900	-	1700	nm	-
Responsivity	R	0.8 0.9	0.85 0.95	-	A/W	$\lambda=1310\text{nm}$ M=1 $\lambda=1550\text{nm}$ M=1
Dark current	$I_D$	-	10	50	nA	$V_R=V_B \times 0.9$
Breakdown voltage	$V_{BR}$	30	45	55	V	$I_D=10\mu\text{A}$
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	$V_{BR}/T$	41	48	58	mA	-
Bit rate	$B_R$	-	2.5G	-	bps	-
Bandwidth @-3dB	BW	1.5	1.8	-	GHz	$R_L=50$ , $P_i=-10\text{dBm}$ , M=10
Optical sensitivity	$P_{min}$	-	-35	-	dBm	Differential BER= $10^{-10}$ M=10 $B_R=2.5\text{Gbps}$
Differential output voltage	$V_O$	320	400	480	mVpp	Differential $R_L=100$
Transimpedance	$Z_t$	20	25	30	k	differential
Noise equivalent power	NEP	-	150	200	nArms	-

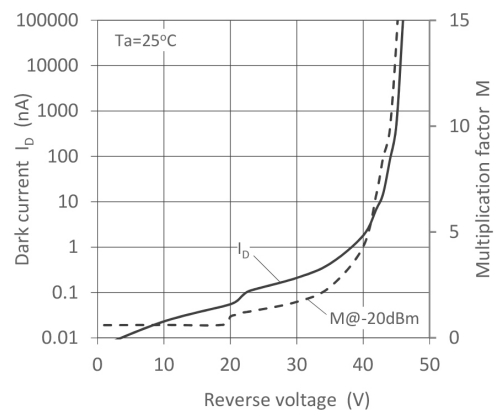
Frequency Response



Bit Error Rate



Dark Current - Reverse Voltage



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