

2.5Gbps InGaAs PIN PD-TIA

Features

- High sensitivity -29dBm
- Low noise and high speed trans-impedance amplifier built-in to meet OC-48
- Products available for OC-48, 2.5Gb/s
- AGC circuit built-in
- 5 pin package available for an independent PD connection
- Pigtail type and LC-ROSA are available as an option

Package drawings are seen in datasheet of 'Package Option for KPDX, KPDXA, KPGX, KPIX Series.'

Applications

- Optical communication
- Optical LAN
- OE converters

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Maximum optical power input	$P_{i\max}$	4	mW
Supply voltage	V_{cc}	-0.5 to 6.5	V
Operating temperature	T_{opr}	-40 to +85	°C
Storage temperature	T_{stg}	-40 to +85	°C

Electrical and Optical characteristics (Ta=25°C unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating voltage	V_{op}	3.0	3.3	3.6	V	
Supply current	I_{cc}	40	48	60	mA	
Bit rate	BR		2.5		Gbps	
Bandwidth @-3dB	BW		1.8		GHz	$R_L=50\Omega$, $P_i=-10\text{dBm}$, small signal modulation
Optical sensitivity	P_{min}		-29		dBm	differential, BER=10 ⁻¹⁰
Output impedance	Z_o	40	50	60	Ω	single ended
Differential output voltage	V_o	320	400	480	mVpp	$R_L=100\Omega$
Photo-electric conversion efficiency	η_{PE}	20	25	30	kV/W	single ended, $R_L>50\Omega$

Specifications are subject to change without notice.

Specifications of Pigtail Type and LC ROSA Type

A standard single mode fiber is coupled to a hermetically sealed PD-TIA module. A multimode fiber pigtail is available as an option. A plastic LC ROSA provides an efficient coupling with a single or multi mode fiber with a stub.

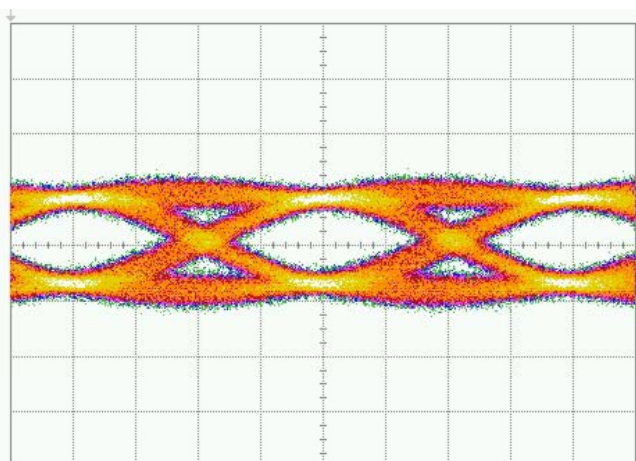
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Electrical parameters	See maximum ratings of respective PD-TIA devices		
Operating temperature	T _{opr}	-40 to +85	°C
Storage temperature	T _{stg}	-40 to +85	°C

Electrical and Optical characteristics (Ta=25°C unless otherwise noted)

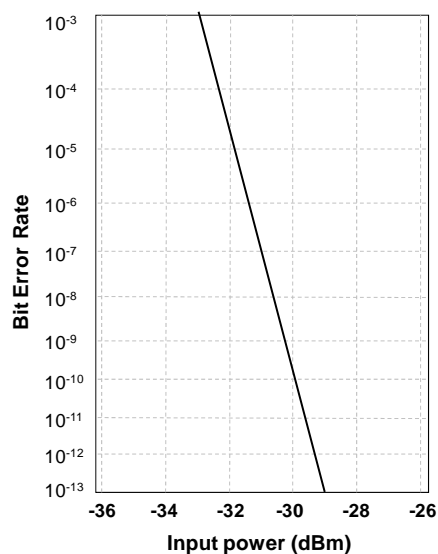
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical reflection	ORL	27			dB	λ= 1310nm
Electrical parameters	See electric performances of respective PD-TIA devices (only for pigtail type)					
Fiber type	Single mode fiber (non-flammable material, only for pigtail type)					
Fiber connector type	SC connector					only for pigtail type
Mode field diameter		8.5	9.5	10.5	μm	
Clad diameter		123	125	127	μm	
Differential index		0.26	0.30	0.34	%	
Fiber diameter		0.8	0.9	1.0	mm	
Fiber length		1000	1100	1200	mm	
Minimum bending radius			20		mm	

Eye diagram



Hor.: 20mV/div, Ver.: 100ps/div, P_r=-26dBm, BR: 2.488Gbps, single ended

KPDX2GK Bit error rate



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