



PDT-A13P5-10GB3

10Gbps InGaAs PIN Photodiode with Pre-Amplifier

Data Sheet



Overview

The Lasermate PDT-A13P5-10GB3 is a high-speed, high-sensitivity 10Gb/s InGaAs photodetector with integrated transimpedance amplifier (TIA). Packaged in a 5-pin TO-46 with short cap lens and tab-less design, it is optimized for 1310nm/1550nm fiber optic communications. Photocurrent monitoring is available, and the device operates from a single +3.3V supply.

Features

- InGaAs PIN photodiode with integrated TIA, 5-pin TO-46 package
- Industry standard TO-46 package with short cap lens and tab-less design
- Photocurrent monitoring available
- Single +3.3V power supply requirement

Applications

- High-speed fiber optic communication systems
- Optical receivers for 1310nm/1550nm band
- Systems supporting up to 11.3Gbps

Specifications

Electro-Optical Characteristics (T _A =25°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Power Supply	V _{CC}	3.0	3.3	3.6	V	
Supply Current	I _{CC}		27	34	mA	No loads
Differential Responsivity	R _d	2.0	3.2	5.0	mV/uW	λ=1310nm, R _{load} =100ohm, P=-15dBm
Single Ended Responsivity	R _s	1.0	1.6	2.5	mV/uW	λ=1310nm, R _{load} =50ohm, P=-15dBm
TIA RSSI	Slope	0.9	1.0	1.1	mA/mA	
	Offset			100	nA	
	Linearity Limit			1.6	mA	
Small-Signal Bandwidth	BW	7.0			GHz	P=-15dBm ⁽¹⁾
Low-Frequency Cut Off	LF			30	kHz	
Rise/Fall Time (20-80%)	tr/tf			50	ps	P=-15dBm, λ=1310nm ⁽¹⁾
Saturation Power	P _{sat}	0.5			dBm	
Single Ended Output Impedance	R _O		50		ohm	
Wavelength	λ	1260		1620	nm	
Sensitivity				-17.0	dBm	λ=1310nm, @10.3125Gbps ⁽¹⁾ , PRBS31, ER=7dB, BER=10 ⁻¹²
				-15.5		

Notes:

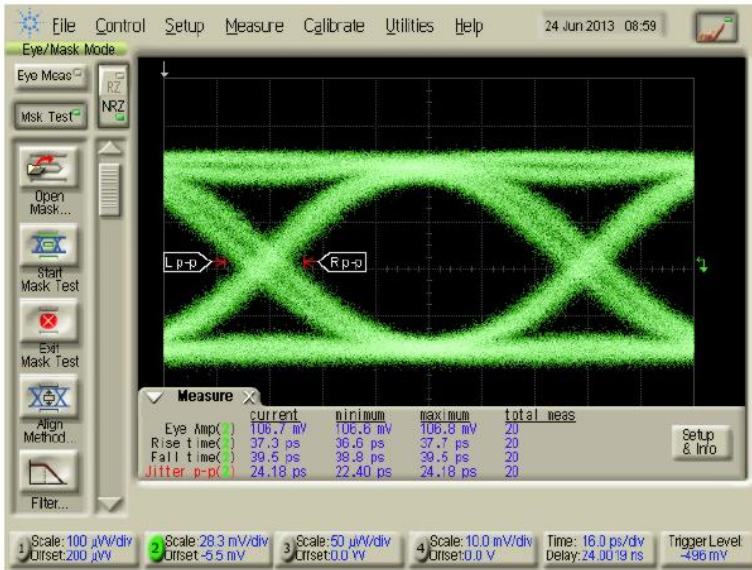
1. The spec and tested data are subject to ROSM level (flexible circuit attached) measurement.
2. The above specifications are subject to change without notice.

Absolute Maximum Ratings					
Parameters	Min.	Max.	Unit	Conditions	
Storage Temperature	-40	100	°C		
Operating Temperature	-40	85	°C		
Lead Solder Temperature		260	°C	10 seconds	

Typical Characteristics

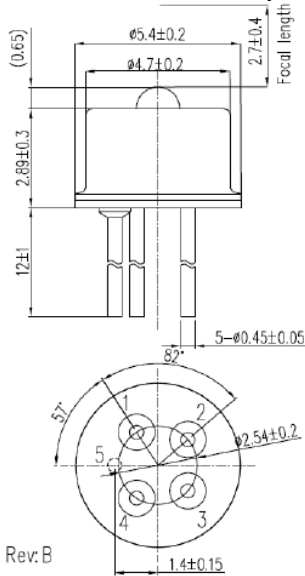
Eye Diagram

R_{load} = 50ohm, P = -15dBm@10.3125Gbps, 1310nm, PRBS 31⁽¹⁾



tr=37.3ps, tf=39.5ps, Jitter p-p=24.18ps

Outline Dimensions (unit: mm)



Pin Configuration:

Pin Number	Function
1	Dout(+)
2	Vcc
3	Isource
4	Dout(-)
5	Gnd

Additional Notes

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