



## PDT-A13P5-10GB3

### 10Gbps InGaAs PIN plus Pre-Amplifier Photodiode in TO-46 Package

#### Overview

The Lasermate PDT-A13P5-10GB3 is a high-speed, high sensitivity 10Gb/s InGaAs photodetector integrated with a transimpedance amplifier (TIA) in a 5-pin TO-46 package with short cap lens, specifically designed for 1310nm/1550nm band optical fiber communications.



#### Features

- InGaAs PINTIA 5 pin TO
- Industry standard TO-46 package with short cap lens and tab-less
- Photocurrent monitoring available
- Single power supply +3.3V

#### Applications

- Optimized for fiber optic application
- Supports up to 11.3Gbps application

#### Specifications

Electro-Optical Characteristics (T <sub>A</sub> =25°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Power Supply	V <sub>CC</sub>	3.0	3.3	3.6	V	
Supply Current	I <sub>CC</sub>		27	34	mA	No loads
Differential Responsivity	R <sub>d</sub>	2.0	3.2	5.0	mV/uW	λ=1310nm, R <sub>load</sub> =100ohm, P=-15dBm
Single Ended Responsivity	R <sub>s</sub>	1.0	1.6	2.5	mV/uW	λ=1310nm, R <sub>load</sub> =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 <sup>(1)</sup>
Low-Frequency Cut Off	LF			30	kHz	
Rise/Fall Time (20-80%)	tr/tf			50	ps	P=-15dBm, λ=1310nm <sup>(1)</sup>
Saturation Power	P <sub>sat</sub>	0.5			dBm	
Single Ended Output Impedance	R <sub>o</sub>		50		ohm	
Wavelength	λ	1260		1620	nm	
Sensitivity				-17.0	dBm	λ=1310nm, @10.3125Gbps <sup>(1)</sup> , PRBS31, ER=7dB, BER=10 <sup>-12</sup>
				-15.5		λ=1310nm, @10.3125Gbps <sup>(1)</sup> , PRBS31, ER=4.5dB, BER=10 <sup>-12</sup>

#### Notes:

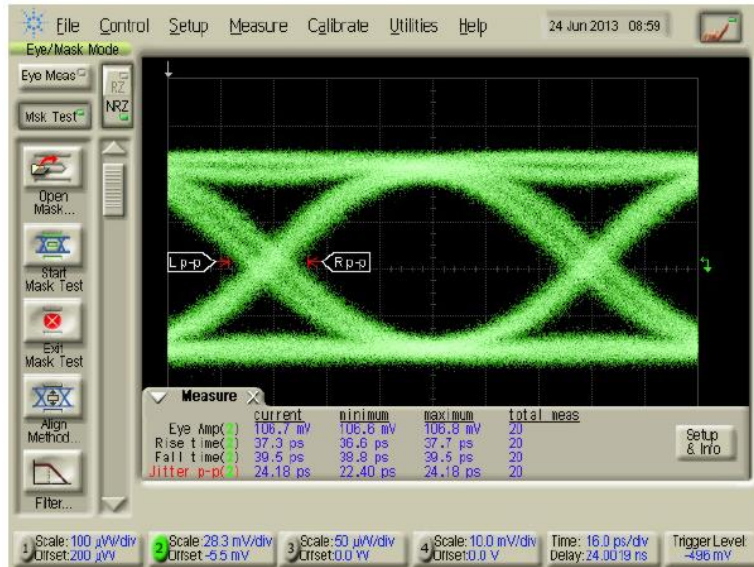
1. The spec and tested data are subject to ROSM level (flexible circuit attached) measurement.
2. The above specifications are subject to change without notice.

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

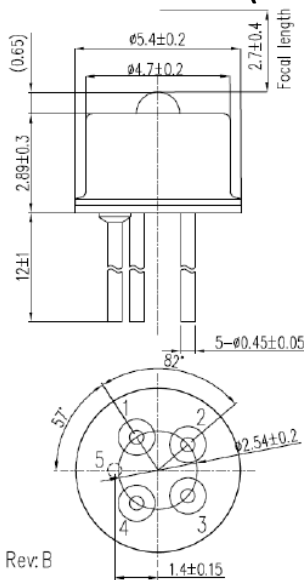
### Eye Diagram

R<sub>load</sub> = 50ohm, P = -15dBm@10.3125Gbps, 1310nm, PRBS 31<sup>(1)</sup>



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

1. The spec and tested data are subject to ROSM level (flexible circuit attached) measurement.
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