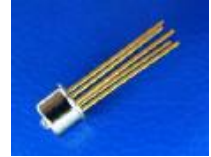




# PDT-A13P5-10GC3

## 10Gbps InGaAs PIN Photodiode with Pre-Amplifier



### Product Overview

The PDT-A13P5-10GC3 is a high-speed InGaAs PIN photodiode with integrated pre-amplifier, designed for fiber optic applications requiring data rates up to 11.3Gbps. The device features a 5-pin TO-46 package with long cap lens and tab-less design for reliable optical performance. Photocurrent monitoring is available, and the device operates from a single +3.3V power supply.

### Features

- InGaAs PIN photodiode with pre-amplifier
- Industry standard TO-46 package with long cap lens and tab-less design
- Photocurrent monitoring available
- Single power supply +3.3V

### Applications

- High-speed fiber optic communication systems
- Optical receivers for data rates up to 11.3Gbps

### 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:

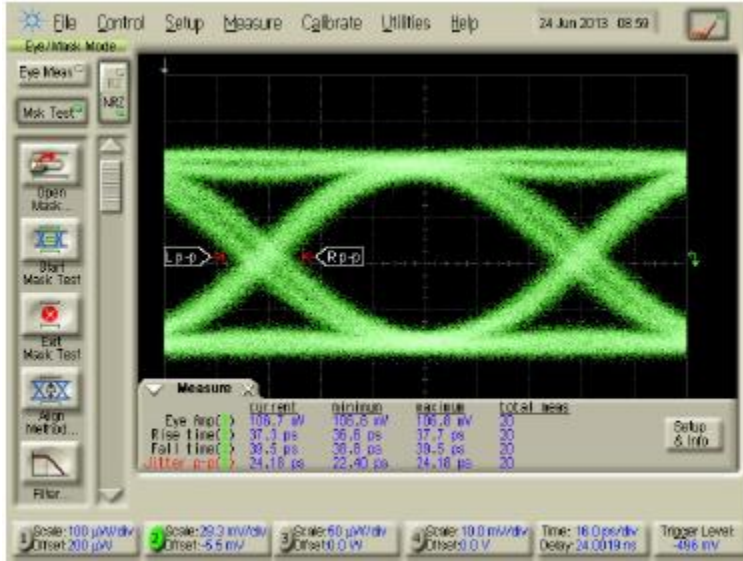
1. The spec and tested data are subject to ROSM level (flexible circuit attached) measurement.

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

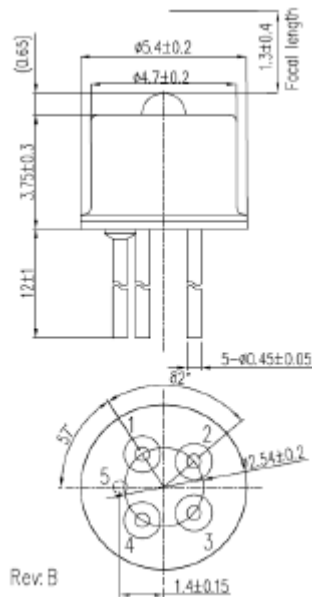
#### Eye Diagram

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.
2. The above specifications are subject to change without notice.