

## 1310nm 1.25Gbps PIN-TIA for GE-PON

### DI1F-8053-x series

**TYPE NAME: DI1F-8053-6**

#### Product Description:

The LuxNet DI1F-8053-x is designed for high-speed, high-performance GE-PON communication applications. This device integrates our high-speed 1310 nm PIN detector with a 1.25G trans-impedance amplifier (TIA) and capacitors into a TO-46 header with cap window. The PIN-TIA assembly can be integrated with a bi-directional fiber receptacle housing to receive light from fiber through a receptacle into the PIN detector with high coupling efficiency.

#### Product Specifications:

Absolute Maximum Ratings (T = 25°C):

Parameter	Symbol	Unit	Min.	Max.	Note
Operating Temperature	T <sub>op</sub>	°C	-40	85	
Storage Temperature	T <sub>stg</sub>	°C	-40	100	
Solder Reflow Temperature		°C		260	10 seconds max.
Power Supply Voltage	V <sub>p</sub>	V		4	
Optical Power	P <sub>in</sub>	dBm		3	

Electro-Optical Characteristics (T = 25°C, unless noted otherwise):

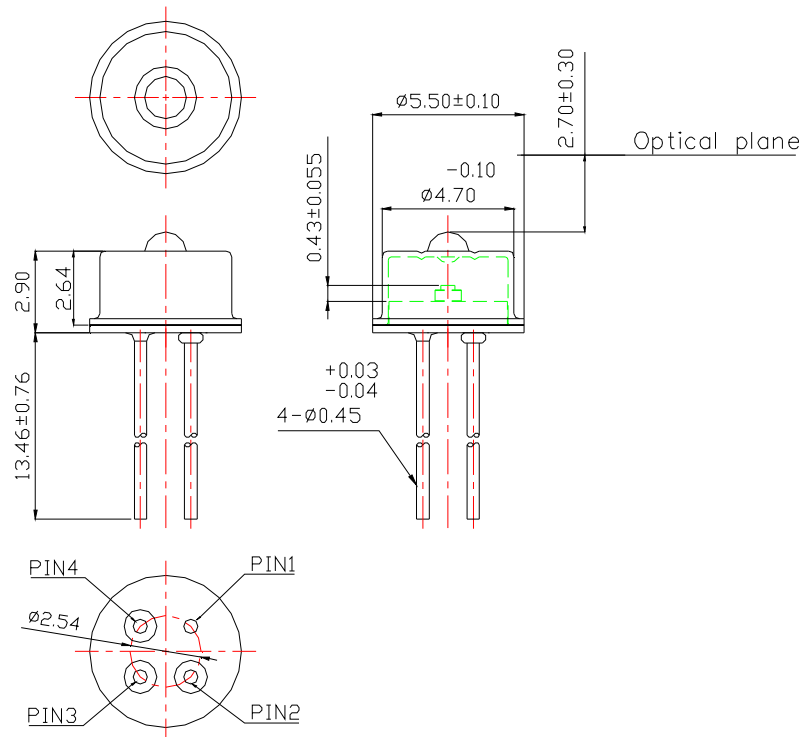
Parameter	Symbol	Unit	Min.	Typ.	Max.	Test Condition
Supply Voltage	V <sub>cc</sub>	Volts	3.0	3.3	3.6	
Supply Current	I <sub>cc</sub>	mA	23	28	35	P <sub>in</sub> = 0 μW, R <sub>L</sub> = 50Ω
Output Voltage (differential)	V <sub>out</sub>	mV		275	500	P <sub>in</sub> = 1.5 μW, R <sub>L</sub> = 100Ω
Responsivity	R	KV/W		23		λ=1310nm P <sub>in</sub> = 1.5 μW, AC Coupled, R <sub>L</sub> = 50Ω
Upper -3dB Bandwidth	BW	MHz	730	812	893	R <sub>L</sub> = 50Ω
Low frequency cut off	LFC	kHz	50	70	115	P <sub>in</sub> = 1 μW
Sensitivity	S	dBm			-29	λ=1310nm 2 <sup>7</sup> - 1 PRBS, BER= 10 <sup>-10</sup>
Saturation Power	P <sub>sat</sub>	dBm		-3		
Wavelength	λ	nm	1100	1310	1650	
Rise/Fall Time	τ <sub>r</sub> /τ <sub>f</sub>	ps	200	300	400	20%-80%

\* Specifications are subject to change without notice.  
\* Screening per customer-specified reject limits is available.

Version 1.2

## DI1F-8053-6(PIN-TIA)

**Dimensions:** (mm)  
*All dimensions are nominal*



### PINOUT

DI1F-8053-6	
Number	Function
1	Gnd
2	Vcc
3	Inverted Output (D*)
4	Non-Inverted Output (D)

\* Specifications are subject to change without notice.  
\* Screening per customer-specified reject limits is available.