



## **2.5Gb/s 4pin PIN-TIA SC ROSA**

### ***PTCM965-406***

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### **Features**

- *High data-rate up to 2.7Gb/s*
- *High performance InGaAs PIN Photodiode with Transimpedance Amplifier (TIA)*
- *Operating wavelength range: 1250~1620nm*
- *4pin SC package*
- *Single +3.3V power supply*
- *Typical sensitivity: -23dBm*
- *Minimum overload: 0dBm*
- *RoHS compliant*

### **Application**

- *2.5Gb/s SFF/SFP Transceiver Module*
- *Gigabit Ethernet Transceiver Module*
- *Fiber Channel Transceiver Module*

## Description

The PTCM965-406 receiver integrates a 2.5Gb/s PIN Photodiode and a low noise trans-impedance amplifier (TIA) into a hermetic coaxial module. The PIN Photodiode transduces incident light into optical current with high efficiency. The TIA converts the current signal into a voltage signal with a very low input noise current contribution. 4-pin SC package of the receiver provide industry standard connection and the best inserting. The electrical output is differential. External AC-coupling is required.

It is optimized for 2.5Gb/s SFF/SFP transceiver module, Gigabit Ethernet Transceiver Module and Fiber Channel Transceiver Module. The receiver typically shows high sensitivity of  $-23\text{dBm}$ .

## Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	$T_s$	$^{\circ}\text{C}$	-40	85
Relative Humidity	RH	%	5	85
TIA Supply Voltage	$V_{cc}$	V	-0.5	4
Input optical power	$P_{in}$	dBm	-	6
Lead solder temperature	-	$^{\circ}\text{C}$	-	260
Lead solder duration	-	S	-	10

## Recommended Operating Conditions

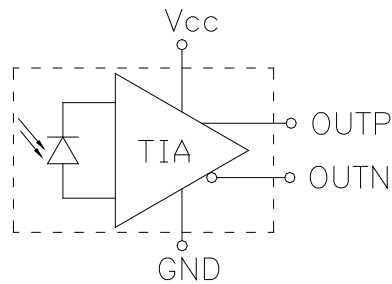
Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature	$T_c$	$^{\circ}\text{C}$	-40	25	85
TIA Supply Voltage	$V_{cc}$	V	2.97	3.3	3.63
Wavelength range	$\lambda$	nm	1250	1310	1620

## Specifications

*(tested under recommended operating conditions, unless otherwise noted)*

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
<b>Electrical Characteristics</b>						
-3dB Bandwidth	BW	GHz	1.8	2.2	-	$P_{IN} = -20\text{dBm}$ , from 130MHz
Low Frequency Cut-off	$f_{Low}$	KHz	-	50	80	-
Max. Output Swing	$V_{outp} - V_{outn}$	mVp-p	-	275	500	-
Output Impedance	$R_o$	$\Omega$	-	50	-	Single-ended
TIA Supply Current	$I_{cc}$	mA	-	42	60	No loads
<b>Optical Characteristics</b>						
Single-Ended Responsivity	$R_s$	$\text{mV}/\mu\text{W}$	-	3.4	-	$\lambda = 1310\text{nm}$ , $R_{load} = 50\text{ohm}$ , $P_{in} = -20\text{dBm}@8\text{MHz}$
Sensitivity	S	dBm	-	-23	-21	NRZ, ER=10dB, 2.48832Gb/s,

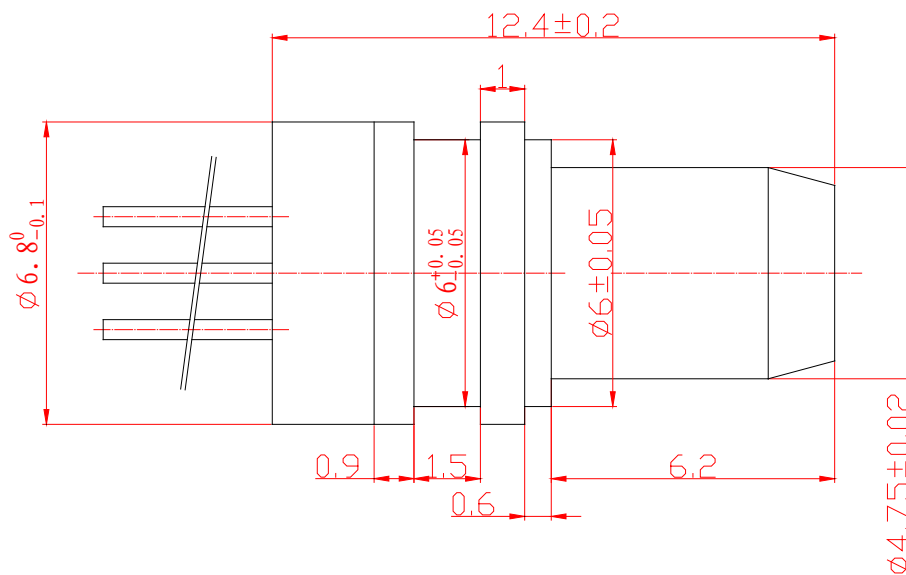
## Block diagram



## Pin Description

Pin	Description	Bottom View
1	Vcc	
2	Data plus	
3	Data minus	
4	GND	

## Package Outline



## Ordering Information

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Part No.	Specification						
	Package	Data-rate	Detector	Sensitivity	Overload	Temp	Others
PTCM965-406	4pin SC ROSA	2.5Gb/s	PIN+TIA	<-21dBm	0dBm	-40~85°C	+3.3V, RoHS

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