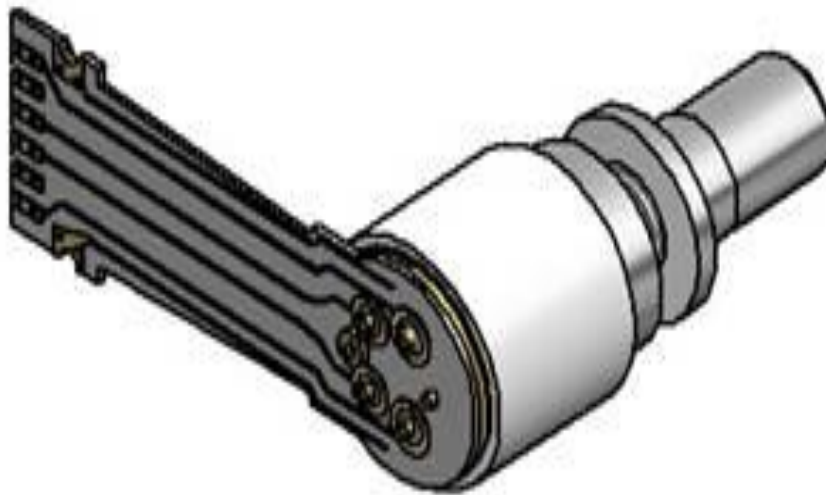


Wooriro Photo Diode

WOORIRO 10G PIN TIA ROSA
SPECIFICATIONS



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General Description

The 10Gbps PIN ROSA is a low cost receiver module for using in the XFP/300pin optical transceiver. It guarantees high sensitivity and its low deviation over an operating temperature range.

Features

- 10Gbps InGaAs/InP PIN PD chip
- High gain of 7kΩ transimpedance
- Operation at 1100nm and 1620nm
- Differential data output
- High sensitivity: typ. -20dBm
- Low Cost

Applications

- Digital fiber optic receiver in short, medium and long haul optical telecommunications transmission systems and in high speed optical data networks
- SFP+/XFP optical transceiver

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
TIA supply voltage	V _{CC}	-0.3 to 4.0	V
Voltage at RSSI	V _{RSSI}	-0.3 to 4.0	V
PIN reverse current	I _{PD}	3.5	mA
Operating case temperature range	T _C	-40 to +85	°C
Storage temperature range	T _{STG}	-40 to +85	°C

Table 1. Absolute Maximum Ratings

Electro-Optical Characteristics

Inspection sheet shall be appended to products when they are delivered. Test report shall be submitted in papers and in electronic media. It shall contain the major in following items.

Optical Characteristics(Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Optical wavelength range	λ	-	1100		1620	nm
Sensitivity	P_S	9.95Gbps NRZ, PRBS=2 ³¹ -1, BER=1×10 ⁻¹² , ER=11.3dB, λ =1550nm		-20	-18	dBm
Maximum overload	P_{MAX}	9.95Gbps NRZ, PRBS=2 ³¹ -1, BER=1×10 ⁻¹² , ER=11.3dB, λ =1550nm			0	dBm
Responsivity	R	λ = 1550nm, V_R =5V	0.85			A/W

Table 2. Optical Characteristics

Electrical Characteristics(Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Power supply voltage	V_{CC}	-	2.97	3.3	3.63	V
Power supply current	I_{CC}	-	21	28	41	mA
Dark current	I_d	V_R =5V		0.1	1	nA
Transimpedance	Z_T	-	5	7	10	k Ω
O/E bandwidth	f_{ch}	-3dB, Pin=-20dBm	7	10		GHz
Low cut-off frequency	f_{cl}	-		30	100	kHz
Maximum output voltage	V_{out}	Differential	240	280	350	mV _{p-p}
Output impedance	Z_O	Single-ended	40	50	60	Ω
RSSI gain internal bias	I_{RSSI}	Resistive load to GND ⁽¹⁾	0.48	0.5	0.52	A/A

(1) The RSSI output is a current output, which requires a resistive load to ground (GND). The voltage gain can be adjusted for the intended application by choosing the external resistor; however, for proper operation, ensure that the voltage at RSSI does not exceed $V_{CC} - 0.65V$.

Table 3. Electrical Characteristics

Mechanical Dimension

(unit : mm)

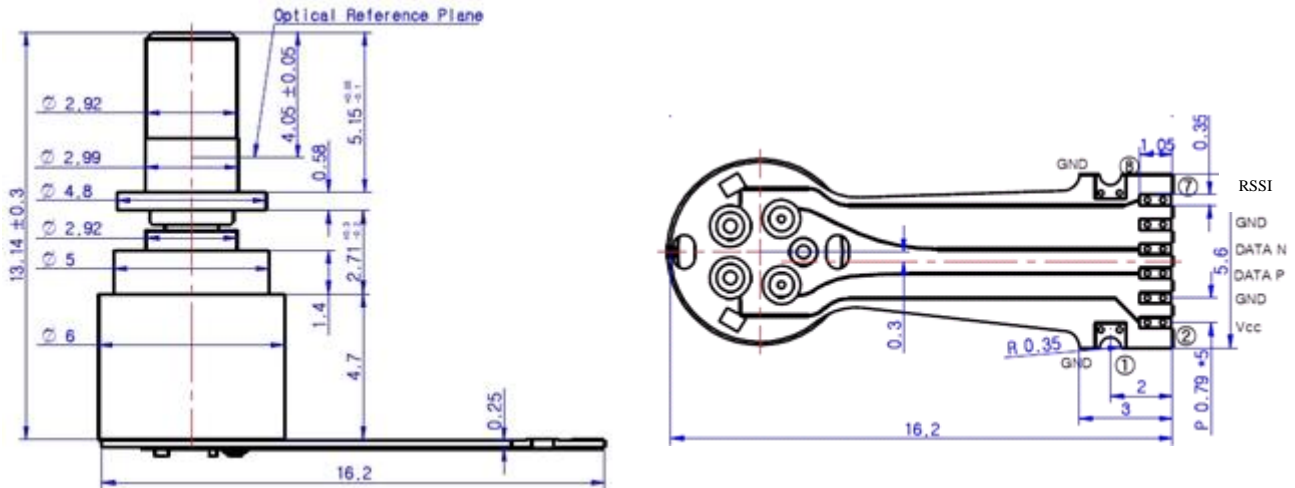


Figure 1. Mechanical Dimension

Pin Configuration

No.	Symbol	I/O	Description
1	GND	I/O	Not internal connection
2	V _{cc}	I	Supply voltage
3	GND	I/O	Signal ground
4	Data P	O	Positive data output
5	Data N	O	Negative data output
6	GND	I/O	Signal ground
7	I _{RSSI}	O	RSSI output
8	GND	I/O	No internal connection

Other Requirements

Precautions for use

This device is susceptible to damage as a result of ESD(electrostatic discharge). Use of ground straps, anti static mats, and other standard ESD protective equipment is recommended when handling or testing an InGaAs PIN/APD or any other junction photodiode. Soldering temperature of the leads should not exceed 350°C for more than 10 seconds.

Ordering Information

