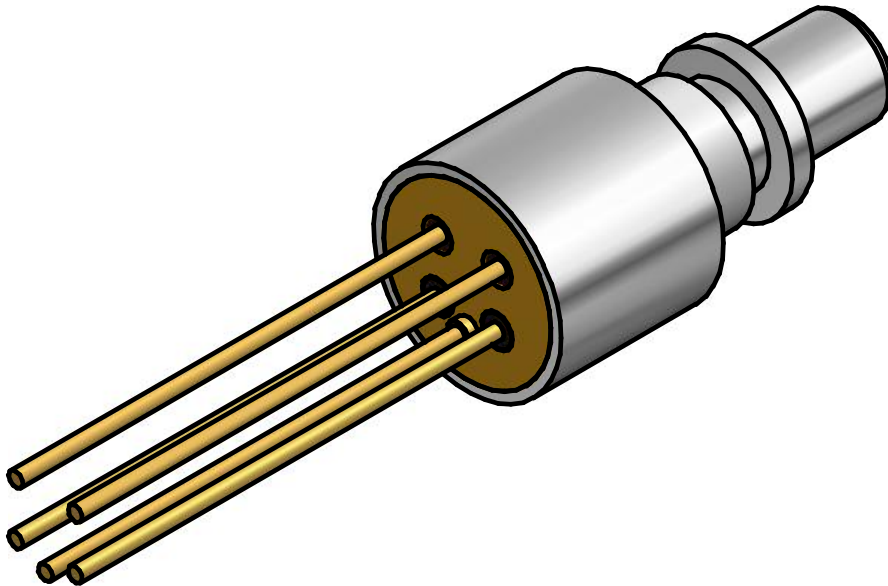


Wooriro's 2.5Gbps APD TIA ROSA
SPECIFICATION



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General Description

The 2.5Gbps APD TIA ROSA is a low cost receiver module with a miniaturized size for using in the SFP optical transceiver and is assembled with LC/SC receptacle by high power Nd-YAG laser welding method. It guarantees high sensitivity and its low deviation over an operating temperature range.

Features

- InGaAs Avalanche Photo Diode
- High gain 4.4kΩ transimpedance pre-amplifier
- Operating at 1100nm and 1650nm
- Differential data outputs
- High sensitivity: typ. -33dBm

Applications

- Digital fiber optic receiver in short, medium and long haul optical telecommunications transmission systems and in high speed optical data networks
- G-PON
- Ethernet
- Fiber Channel

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
TIA Supply Voltage	V _{CC}	5	V
APD Supply Voltage	V _{APD}	0 to V _{BR}	V
APD Reverse Current	I _{APD}	2	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 or in electronic media. It shall contain the major in following items.

Optical Characteristics (Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Responsivity	R	@ M=1, 1550nm	0.8			A/W
Optical Wavelength Range	λ	-	1100		1650	nm
Sensitivity	P _S	2.5Gbps NRZ, PRBS=2 ²³ -1, BER=1×10 ⁻¹⁰ , λ =1550nm ER=10dB		-33	-32	dBm
Maximum Overload	P _{MAX}	2.5Gbps NRZ, PRBS=2 ²³ -1, BER=1×10 ⁻¹⁰ , λ =1550nm ER=10dB	- 6			dBm

Table 2. Optical Characteristics

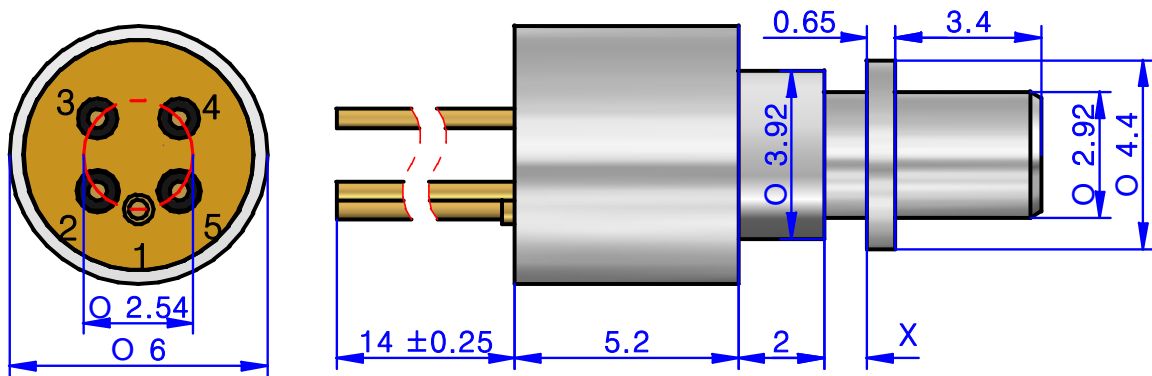
Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
TIA Supply Voltage	V _{CC}	-	3.0	3.3	3.6	V
TIA Supply Current	I _{CC}	-		25		mA
Breakdown Voltage	V _{BR}	Dark current, I _d =10 μ A	35	45	55	V
Transimpedance	Z _T	Differential(50 Ω on each output), f=100MHz	2.7	4.4	6.2	K Ω
3dB Bandwidth	F _{CH}	M=9, Pin=-20dBm	1.9	2.5		GHz
Low Frequency Cut-off	F _{CL}	-		20		KHz
Maximum Output Voltage	V _{OUT}	Single-ended	170	260	375	mV _{P-P}
Output Impedance	Z _O	Single-ended		50		Ω
Temperature Coefficient of V _{BR}	δ	$\Delta V_{BR}/\Delta T$	0.08	0.1	0.12	V/°C

Table 3. Electro Characteristics

Mechanical Dimension & Pin Layout

Mechanical Dimension



x = 0.5~1.5mm

Figure 1. Mechanical Dimension

Pin Configuration

No.	Symbol	I/O	Description
1	GND	I/O	Signal ground
2	Data P	O	Positive data output
3	V _{CC}	I	TIA Supply voltage
4	V _{APD}	I	APD bias voltage
5	Data N	O	Negative data output

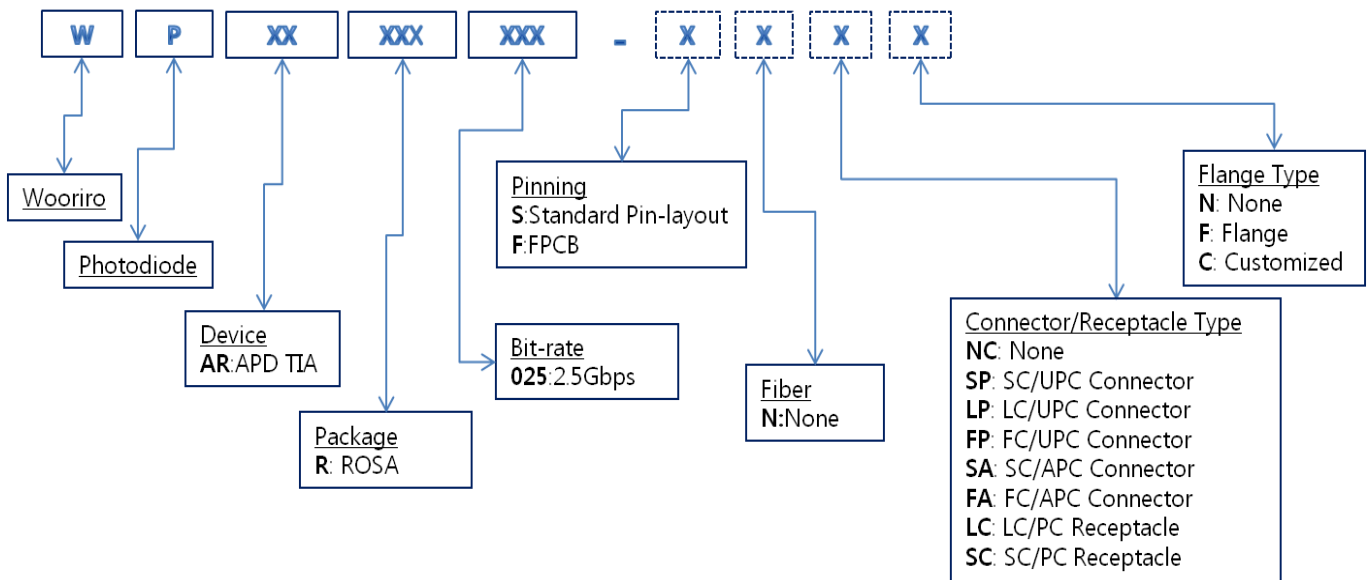
Table 4. PIN Configuration

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



Ex) WPARR025-SNNCN: 2.5G APD TIA ROSA with Standard Pin-layout