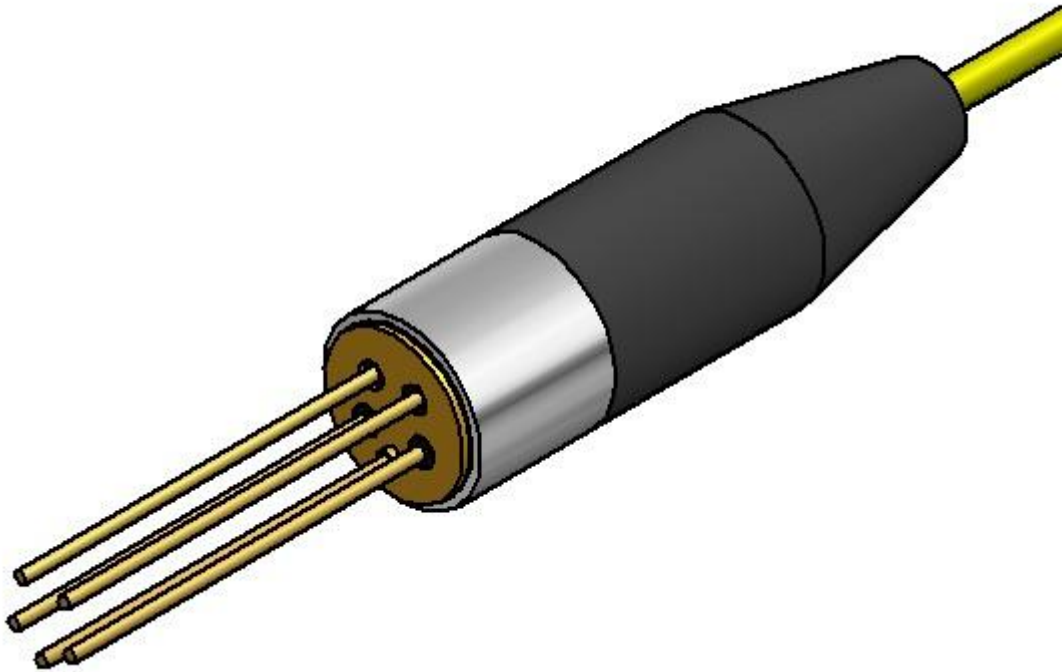


Wooriro's 2.5Gbps APD TIA PIGTAIL
SPECIFICATION



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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, $I_d=10\mu A$	35	45	55	V
Transimpedance	Z_T	Differential(50Ω on each output), f=100MHz	2.7	4.4	6.2	KΩ
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

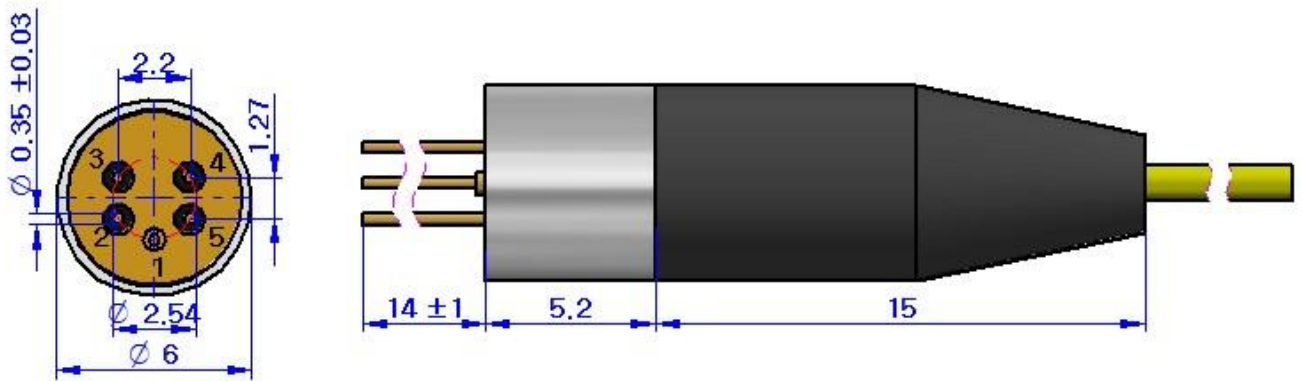


Figure 1. Mechanical Dimension

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

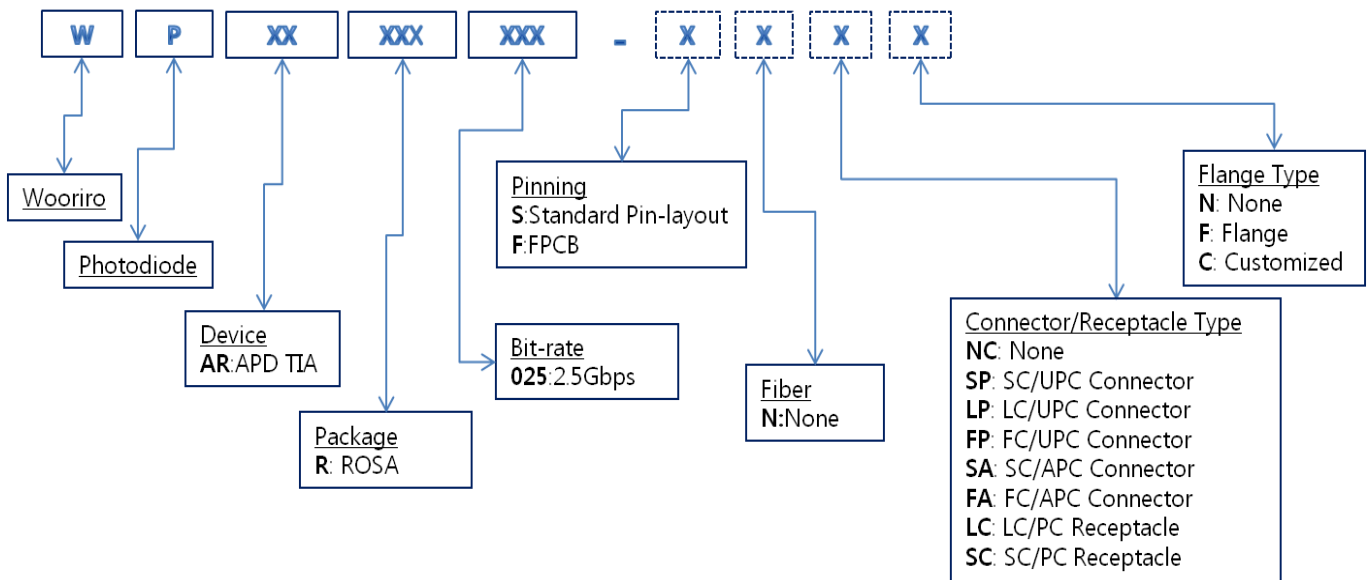
Table 4. PIN Configuration

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