2.5Gb/s PIN-TIA Coaxial Pigtail Receiver

Applications

- High data-rate up to 2.5Gb/s
- High reliability planar InGaAs PIN Photodiode
- Packaged in 5-pin coaxial pigtailed
- Single +3.3V power supply
- Minimum sensitivity: -25dBm
- Minimum overload: 0dBm
- Meets ORL for SONET/SDH applications (27dB)
- RoHS compliant

Description

The PPD2 receiver is designed with a 2.5Gb/s PIN Photodiode integrated with a low noise transimpedance amplifier (TIA) in an industry standard 5-pin hermetic pigtailed module. It converts received light signals into low noise differential output voltage signals. The receiver exhibits minimum sensitivity of –25dBm under 2.5 Gb/s operation. Device comes with a flange for convenient board mounting.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	Ts	-40	85	°C
Relative Humidity	RH	5	95	%
TIA Supply Voltage	V_{CC}		5	V
Photodiode Bias Voltage	V_{PD}	-0.5	20	V
Input optical power	P_{IN}	-	6	dBm
Solder temperature	-	-	260	°C
Solder duration	-	-	10	S

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T_C	-40	25	85	°C
TIA Supply Voltage	V_{CC}	2.97	3.3	3.63	V
Photodiode Bias Voltage	V_{PD}	4.0	5.0	6.0	V
Wavelength range	λ	1260	1310	1650	nm

Specifications (Tc=25°C, unless otherwise noted)

Parameter	Test condition	Symbol	Min	Typ	Max	Unit
Modulation Bandwidth (-3dB)	P_{IN}=-20dBm, R_L=50Ω T_C= -40 °C to +85 °C	BW	1.8	2.2	-	GHz
Low Frequency Cut-off	-	F_L	-	50	80	kHz
Trans-impedance	Differential, p-p, f=100MHz	Z_T	-	2500	-	Ω
Max. Output Swing	Peak to Peak	V_{P-P}	-	275	500	V
Output Impedance	-	R_O	-	50	-	Ω
TIA Supply Current	DC, V_{CC}=3.3V	I_{CC}	18	21	24	mA
Dark Current	V_{CC}=3.3V	I_D		0.1	5	nA
Responsivity	λ= 1310 nm	R	0.80	0.85	-	A/W
Sensitivity	2.5Gb/s NRZ,PRBS=2^{23}-1, λ=1550nm,ER=9,BER=10^{-10}	S	-	-25.5	-25	dBm
Overload	2.5Gb/s NRZ,PRBS=2^{23}-1, λ=1550nm,ER=9,BER=10^{-10}	OL	0	-	-	dBm
Optical Return Loss	λ= 1550nm	ORL	-	-	-27	dB

Block Diagram

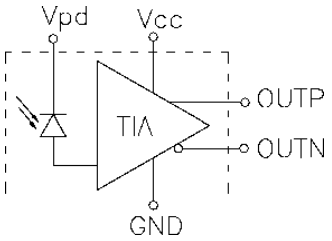
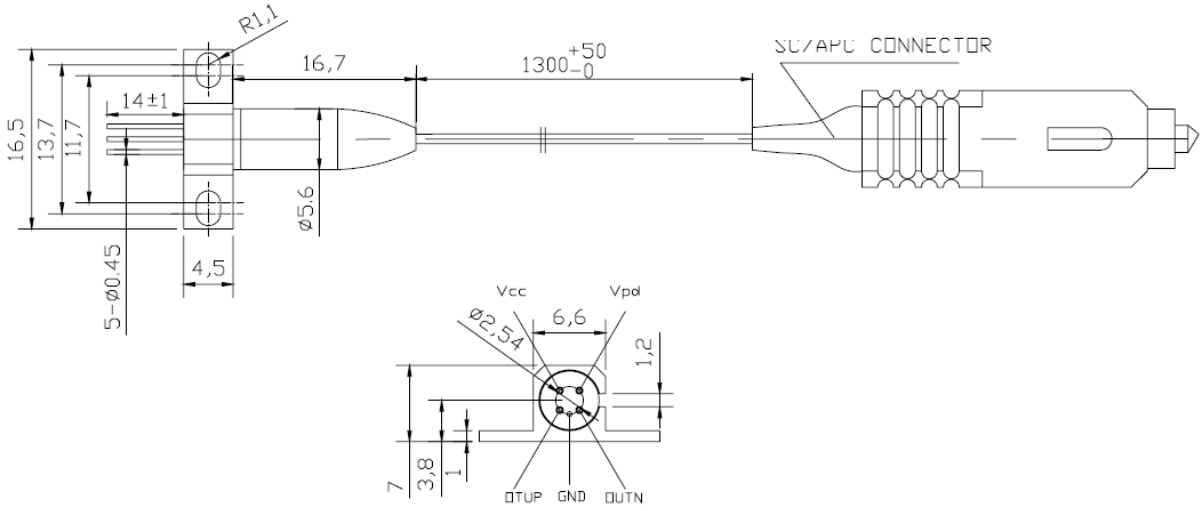


Fig.1 PPDT2 Internal Schematic Diagram

Mechanical Information (mm)



Ordering Information

Part No	Specifications						
	Package	Data-rate	Detector	Sensitivity	Overload	Temp	Connector
PPDT2 – AR	5pin coaxial pigtail with flange	2.5Gb/s	PIN+TIA	< -25dBm	> 0 dBm	-40~85°C	SC/APC