2.5Gb/s APD-TIA Coaxial Pigtail Receiver

Applications

- High data-rate up to 2.5Gb/s
- High reliability planar InGaAs APD with TIA
- Packaged in 5-pin coaxial pigtailed
- Minimum sensitivity: -32dBm
- Minimum overload: -7 dBm
- Meets ORL for SONET/SDH applications (27dB)
- RoHS compliant

Description

The PAPDT2 receiver is designed with a 2.5Gb/s Avalanche Photodiode (APD) 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 typical sensitivity of –32 dBm 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
APD Bias Voltage	$V_{\APD}$	-	V_{BR}	V
APD Reverse Current	I_{APD}	-	0.5	mA
Input optical power	P_{IN}	-	0.5	mW
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
APD Bias Voltage	V_{APD}		V_{BR}		V
APD Reverse Current				5	mA
Wavelength range	λ	1260		1650	nm

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

Parameter	Test condition	Symbol	Min	Typ	Max	Unit
Modulation Bandwidth (-3dB)	AC, P_{IN}=-30 dBm, R_L=50Ω λ=1550nm	BW	1.5	1.8	-	GHz
Output Impedance	-	R_O	-	50	-	Ω
TIA Supply Current	DC, V_{CC}=3.3V	I_{CC}	32	42	60	mA
Breakdown Voltage	Id=10uA	V_{BR}	38	50	60	V
Dark Current	V_{CC}= 0.9V_{BR}	I_D	-	-	100	nA
Sensitivity	2.5Gb/s NRZ,PRBS=2^{23}-1, λ=1550nm,ER=10,BER=10^{-10}	S	-	-32.5	-32	dBm
Overload	2.5Gb/s NRZ,PRBS=2^{23}-1, λ=1550nm,ER=10,BER=10^{-10}	OL	-7	-5	-	dBm
Optical Return Loss	λ= 1550nm	ORL	-	-	-27	dB

Block Diagram

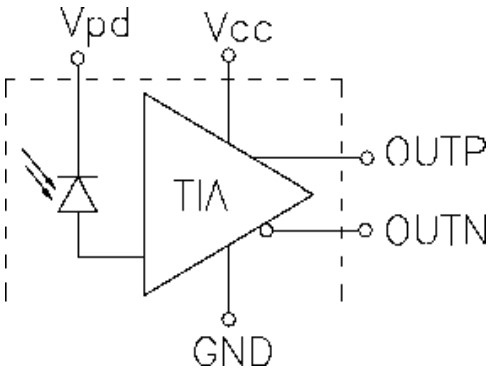
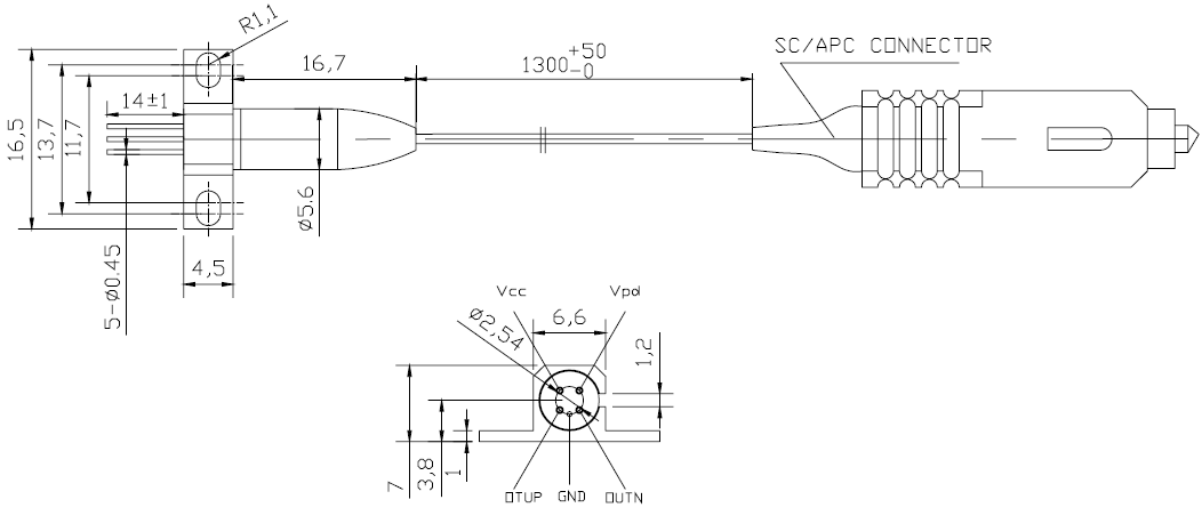


Fig.1 PAPDT2 Internal Schematic Diagram

Mechanical Information (mm)



Ordering Information

Part No	Specifications						
	Package	Data-rate	Detector	Sensitivity	Overload	Temp	Connector
PAPDT2	5pin coaxial pigtail with flange	2.5Gb/s	APD+TIA	< -32dBm	> -7 dBm	-40~85°C	SC/APC