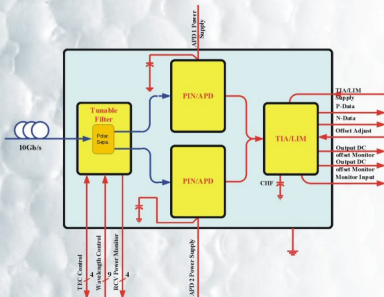




The main use of tunable receivers is in data distribution applications. A typical application is a PON application (access), where a single information source (data, video, analog...) distributes the information to many users (offices, home...). Each customer selects the needed information by tuning the optical filter to a certain wavelength

Block Diagram and functional description:

The following figure describes a basic block diagram of the receiver



Absolute maximum ratings

Parameter	Symbol	Min	Max	Unit
Optical input power	Pin		+5	dBm
Operating Case Temperature Range	Tc	-5	70	°C
Storage Case Temperature Range	TS	-40	85	°C
3.3 V Supply Voltage	V _{DD}	-0.3	5	V
APD Voltage (TBD max current)	V _{APD}		40	V
ESD Tolerance Human Body ¹	ESD _{HB}	2000	—	V
ESD Tolerance Charged Device ¹	ESD _{CD}	500	—	V
Relative Humidity (non-condensing)	RH	—	85	%
Short Circuit Current	ID _{Short}		TBD	mA

¹Human Body Model - 100pf and 1.5Kohm.

Receive optical specifications (0C to 70C, EOL)

Parameter		Symbol	Min	Typ	Max	Units
Receiver Sensitivity ^{1,2}	PIN	P_{IN}			-12	dBm
	APD				-20	
Receiver Overload ¹	PIN	P_{OL}		+5		dBm
	APD			+2		
Bit Rate		B	9.953		10.709	Gb/s
Receiver Reflectance		Γ	27			dB
Wavelength Range		λ	1530		1565	nm
Wavelength spacing		$\Delta\lambda$	49		51	GHz
Isolation	Adjacent	IA	30			dB
	N-Adjacent	INA	40			
Polarization Depending Loss		PDL			0.5	dB

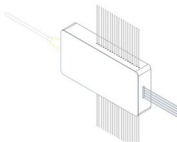
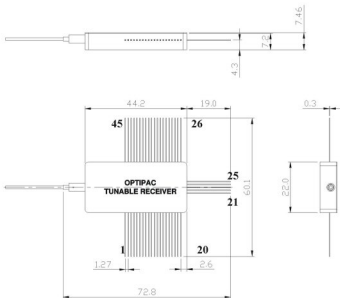
1. Data PRBS 2-1, BER.

2. Reference transmitter according to ITU-T G691

Receiver Electrical Characteristics (0C to 70C)

Parameter		Symbol	Min	Typ	Max	Units
Maximum differential P_P output voltage, 50Ω load.		V_{DIFF_PP}	1.45		1.9	V
Data output return loss (50 Ω, 100KHz to 10GHz)		S_{22}	-10			dB
Output data rise/fall time (20% to 80%)		T_R/T_F			30	ps
Transfer jitter (10Hz to 2MHz)		TJ			0	dB
Generated jitter (10Hz to 20MHz)		$J_{OUT/PP}$			14.6	ps
Wavelength tuning time		T_{TUNE}			10	ms
Thermistors resistance (@ 25°C)		R_{TH}	9500		10500	Ohm
Output DC offset		V_{O-OFF}	-7		+7	mV
OSADJ	Input resistance		15			KΩ
	Voltage Range		VCC-2.1		VCC-0.4	V
	Voltage for zero off.		VCC-1.375		VCC-1.125	V
Input DC monitor		V_{I-OFF}				

10Gb/s Optical Tunable Receiver



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Elisra Microwave Company Division is a technology company with over 30 years of proven experience in supplying best-of-class components and subassemblies of wide range of RF, microwave and millimetres - wave applications.

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