

10G DFB 1270T / 1.25G DFB 1310T

10G 1577R APD-TIA / 2.5G 1490R PIN-STIA

COMBO PON ONU

CL-LA-XGSCBONU-SA-P

Features

- ◆ 1310nm 1.25G Transmitter with DFB laser diode
- ◆ 1270nm 10G Transmitter with DFB laser diode
- ◆ 1490nm 2.5G Receiver with PIN STIA
- ◆ 1577nm 10G Receiver with APD TIA
- ◆ High output power
- ◆ Support SC/APC Pigtail
- ◆ Support Industrial temperature (-10~85C)
- ◆ ROHS Compliant Products Available



Application

- ◆ The BOSA is used for Combo PON ONU (GPON+XGS PON ONU)

Main optoelectronic and environmental indicators of the product

1、 Absolute Maximum Ratings(Tc=25℃, unless otherwise noted)

Parameter	Symb	Min.	Max.	Unit
Storage Temperature	Tstg	-40	85	°C
Operating Case Temperature	Top	-10	85	°C
APD Damage Power	---	---	-3	dBm
Hand Lead Soldering (Temperature)/(Time)	---	---	260/10	°C/Sec

2、Transmitter Optical And Electrical Characteristics

(Unless specified else, the specifications below are defined at $T_C=25\pm3^{\circ}\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
10G Trasmitter						



Transmitter Signal Rate	---	---	9.95G	---	Gbps	---
Threshold Current	I _{th}	---	6	15	mA	25°C
		---	---	30	mA	85°C
LD Forward Voltage	V _f	---	---	1.8	V	CW, I _{op} =I _{th} +20mA
Center wavelength	λ _c	1260	1270	1280	nm	I _{op} =I _{th} +20mA
Side Mode Suppression Ratio	SMSR	35	---	---	dB	I _{op} =I _{th} +20mA
Output Power	P ₀	3.2	---	4.5	mW	25°C, I _{op} =I _{th} +20mA
Slope Efficiency	SE	0.16	---	0.25	mW/mA	25°C, I _{op} =I _{th} +20mA
Monitor Current	I _{mon}	100	---	1000	uA	I _{op} =I _{th} +20mA
Monitor Dark Current	I _d	---	---	100	nA	V _r =1V
Tracking Error	TE	-1.5	---	1.5	dB	10log(P _f @T _c)/P _f @25°C), CW, I _{mon} =constant@25°C, -10~85°C
1.25G Trasmmitter						
Center Wavelength	λ	1300	1310	1320	nm	I _{op} =I _{th} +20mA
Transmitter Bit Rate	---	---	1.244	---	Gbps	
Threshold Current	I _{th}	---	11	15	mA	25°C
		---	---	45	mA	85°C
Output Power	P _o	1.4		3.5	mW	I _{op} =I _{th} +20mA, 25°C
Slope efficiency	SE	0.07		0.175	mW/mA	CW, I _{op} =I _{th} +20mA, 25°C
Side Mode Suppression	SMSR	30	---	---	dB	I _{op} =I _{th} +20mA
Spectral Width((-20dB)	Δλ	---	0.2	1.0	nm	I _{op} =I _{th} +20mA
Monitor Current (PD)	I _m	100	---	1000	uA	CW, I _f =I _{th} +20mA
LD Forward Voltage	V _f	---	---	1.8	V	CW, I _f =I _{th} +20mA
Monitor Dark Current	I _d	---	---	100	nA	V _r =1V

Tracking Error	TE	-1.5	---	1.5	dB	If=Ith+20mA, -10°C~+85°C
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3、Receiver Optical and Electrical Characteristics

(Unless specified else, the specifications below are defined at $T_C=25\pm3^{\circ}\text{C}$)

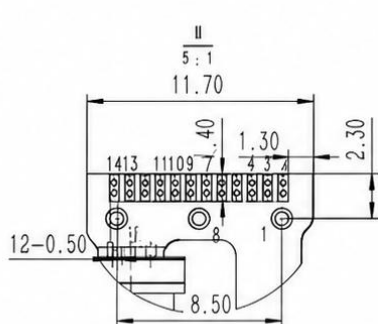
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
10G Receiver						
Operating Wavelength	λ	1575	1577	1580	nm	
Rx Rate	---	---	9.95	---	Gbps	
Sensitivity	Sen	---	---	-29	dBm	9.95G, PRBS 231-1, BER $\leq$ 10-3, ER=8.2dB, Vop=Vbr-3V
Saturation Power	PSA	-7	---	---	dBm	
Break Down Voltage	Vbr	30	---	48	V	Id=10uA
TIA SupplyVoltage	Vcc	2.97	3.3	3.465	V	
SupplyCurrent	Icc	25	37	53	mA	
Dark Current	Id	---	---	100	nA	Vop=Vbr-3, TC=25°C
2.5G Receiver						
Operating Wavelength	λ	1480	1490	1510	nm	
Rx Rate	---	---	2.488	---	Gbps	
Sensitivity	Sen	---	---	-29	dBm	2.488Gb/s, $\lambda=1490\text{nm}$ ER=9dB, BER=10-10 PRBS=2 23-1
Saturation Power	PSA	-3	---	---	dBm	
Dark Current	Id	---	---	100	nA	
TIA SupplyVoltage	Vcc	2.97	3.3	3.63	V	---
SupplyCurrent	Icc	---	---	46	mA	---
Optical Isolation (Rx 1490)	ISO1	25	---	---	dB	@1260~1360nm
	ISO2	20	---	---	dB	@1400~1450nm



	ISO3	25	---	---	dB	@1530~1620nm
Optical Isolation (Rx 1577)	ISO4	35	---	---	dB	@1260~1560nm
	ISO5	30	---	---	dB	@1595~1620nm
Optical Crosstalk (RX1490)	XTALK	---	---	-40	dB	@1270nm
		---	---	-40	dB	@1310nm
Optical Crosstalk (RX1577)	XTALK	---	---	-40	dB	@1270nm
Rx Optical Return loss	ORL	---	---	-20	dB	$\lambda = 1310$

Product structure and outline drawing

Note: Dimensions are in mm, and unstated tolerances are $\pm 0.05\text{mm}$



10G Tx&Rx Pinout	
1	GND
2	Vcc
3	GND
4	D+
5	D-
6	GND
7	Vapd
8	GND
9	MPD-
10	GND
11	LD-
12	LD+
13	GND
14	GND
15	GND

