GPON Class C+++ SFP OLT Transceiver

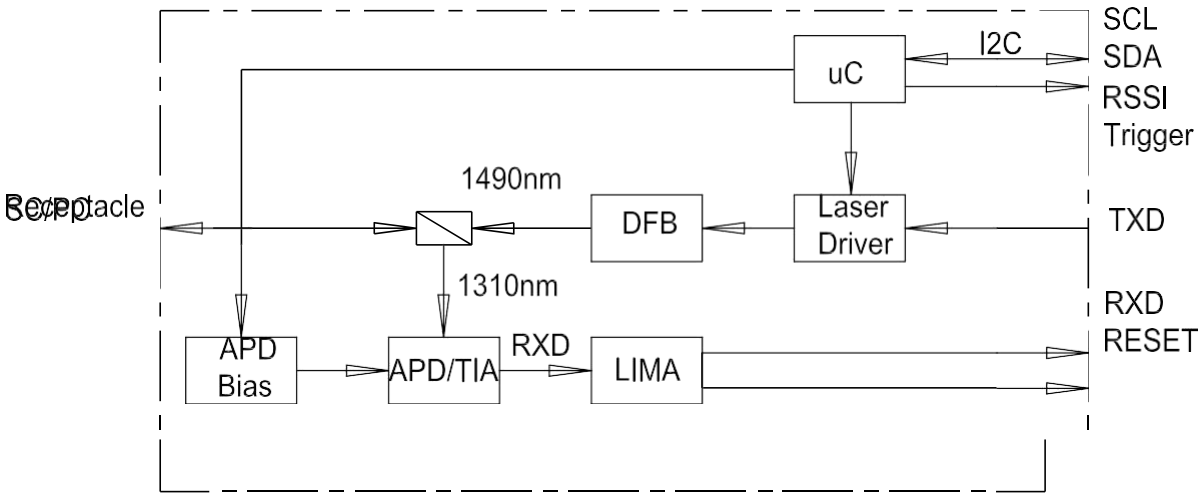
1. Features

- SFP with SC/PC Connector Transceiver
- 1490 nm DFB Tx with isolator
- 1310 nm APD Rx
- Digital diagnostics SFF-8472 Compliant
- 2488 Mbps continuous mode Transmission
- 1244 Mbps Burst mode receiver Data Rate
- RX Fast Burst Mode Detection
- Provide fast RSSI function
- Operation case temperature: 0~70°C
- Class D+ link budget
- Comply with ITU-T G984.2 Amendment 1
- Complies with RoHS directive (2002/95/EC)

2. Application

- GPON OLT Class C++
- FTTx

3. Function Diagram



4. Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_{STG}	-40	85	°C
Operating Case Temperature	T_C	0	70	°C
Power Supply Voltage	V_{CC}	3.1	3.5	V
Total Power Supply Current	Icc	-	500	mA

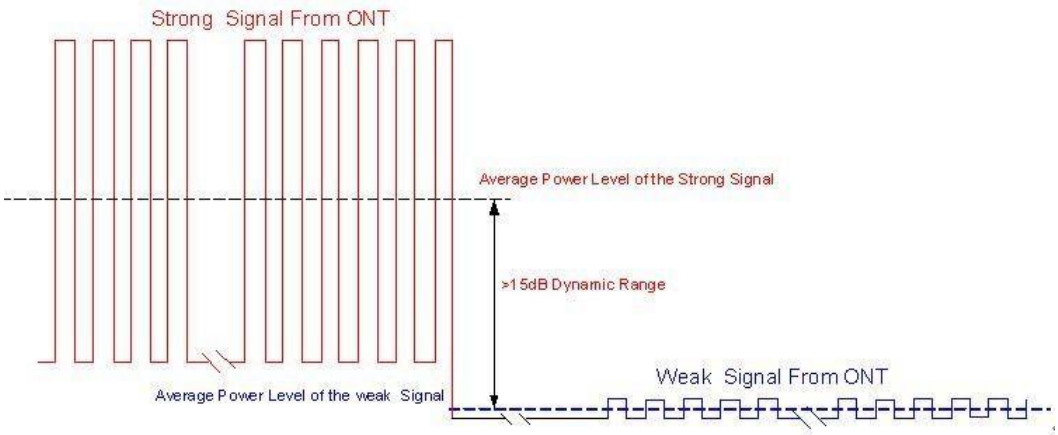
5. Transmitter Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Optical Transmitter Power	P0	8	-	10	dBm	1
Optical Transmitter Power off	POFF	-	-	-39	dBm	
Output Center Wavelength	λ	1480	-	1500	nm	
Output Spectrum Width	Δλ	-	-	1.0	nm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Extinction Ratio	ER	8.2	-	-	dB	
Optical Rise Time	-	-	-	160	ps	
Optical Fall Time	-	-	-	160	ps	
Optical Eye Diagram	Compliant with ITU-T G.984.2 Mask					
Tolerence to Tx Back Reflection	-	-15	-	-	dB	
Data Rate	-	-	2.488	-	Gb/s	
Differential Input Voltage	VPP	300	-	1200	mV	
Differential Input Impedance	ZIN	80	100	120	ohm	
Tx_fault Output Voltage- High	VIH	2.4	-	-	V	
Tx_fault Output Voltage- Low	VIL	-	-	0.4	V	
Tx_Dis Input Voltage- High	VIH	2.0	-	-	V	
Tx_Dis Input Voltage- Low	VIL	-	-	0.8	V	

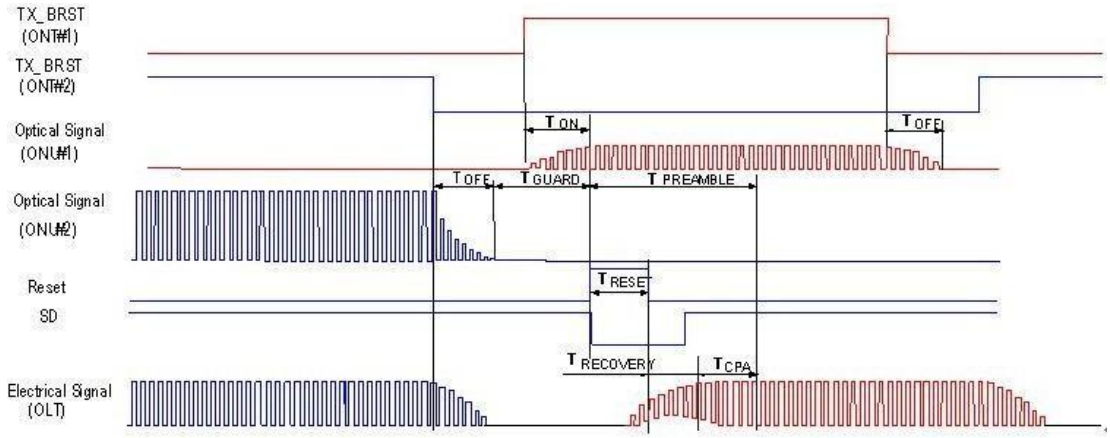
6. Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Wavelength of Operation	-	1260	-	1360	nm	-
Data Rate	-	-	1.244	-	Gb/s	-
Sensitivity	Sen	-	-	-34	dBm	1
Saturation Optical Power	Sat	-15	-	-	dBm	1
Burst Packet Detect sensitivity	-	-	-	-34	dBm	1
Receiver Reflectance	-	-	-	-12	dB	
Receiver Burst-mode Dynamic Range	-	15	-	-	dB	2
Data Output Voltage - High	VOH	VccR -1.05	-	VccR -0.85	V	-
Data Output Voltage - Low	VOL	VccR -1.84	-	VccR -1.60	V	-
Data Output Differential Swing	-	400	-	1600	mV	
RSSI accuracy	-	-3	-	3	dB	3
BPD Output Voltage- High	VIH	2.4	-	-	V	4
BPD Output Voltage- Low	VIL	-	-	0.4	V	4
Guard Time	T_{GUARD}	-	32	-	bits	-
Rest Width	T_{RESET}		16	-	bits	
Reset-Low		0		0.8	V	
Reset-High		2.0		Vcc	V	
Receiver Amplitude Recovery Time	$T_{RECOVERY}$	-	24	32	bits	
Signal Detect De-Asset Time				12.8	ns	
Signal Detect Assert Time				50	ns	
Optical Signal During Time	$T_{ONT\ EN\_DUR}$	550	-	-	ns	5
RSSI Trigger Delay	T_D	50	-	-	ns	6
RSSI Trigger Width	T_W	500	-	-	ns	

7. Burst Mode Receiver Dynamic Range



8. Timing Parameter Definitions in Burst Mode Sequence



10. Digital Diagnostic Monitoring Accuracy

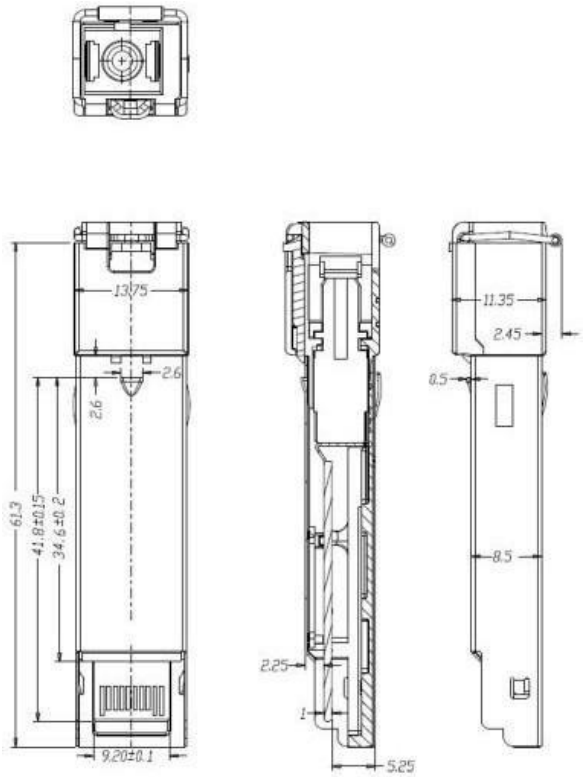
Parameter	Accuracy	Units	Notes
Transceiver Temperature	±3	°C	Temperature sensor
Power Supply Voltage	±3	%	Vcc=3.13~3.47V
TX Bias Current	±10	mA	
TX Optical Power	±3	dB	Average Power
Rx Power	±3	dB	

11. Pin Definitions

Pin#	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication, LVTTL Output, Active High
3	TX_Disable	Transmitter Disable, LVTTL Input. Optical output power is off when this PIN is high or left unconnected.
4	SDA	I2C Data
5	SCL	I2C Clock
6	MOD-DEF(0)	Internally grounded
7	Reset	Receiver Reset , LVTTL Input. Set “Reset” high at the end of previous burst, 2 bytes in duration
8	BPD	Burst Packet Detect, LVTTL output. BPD assert low when module receives “reset” signal, assert high when incoming burst is present.
9	RSSI_Trigger	RSSI Trigger Signal from Host, LVTTL input.
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inv. Received Data Out, LVPECL,DC coupled
13	RD+	Received Data Out, LVPECL,DC coupled
14	VeeR	Receiver Ground

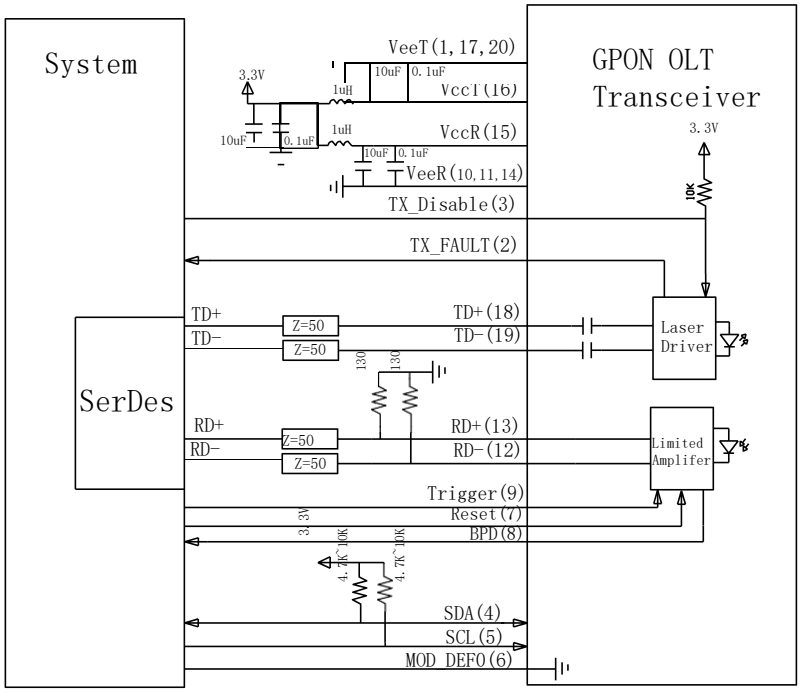
Pin#	Name	Function
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
19	TD-	Inv. Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
20	VeeT	Transmitter Ground

12. Outline Drawing



Unit:mm

13. Recommended Application Circuit



14. Order Information

Product Name	Product description
Gpon Pon Module	GPON Pon Module /Tx1490/Rx1310/20km/Tx2.5G/Rx1.25G/G984.2 Class D+/ 0~70°C/SC receptacle/Po＞8dBm