

### Features:

- Support ITU-T 984.2/984.5 GPON Networks application
- Single fiber bi-directional data links with asymmetric 1.244 Gbps Tx and 2.488 Gbps Rx
- 1310 nm burst-mode transmitter with DFB laser
- 1490 nm continuous-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic Monitoring
- Transmitter state indication (TX\_SD)
- SFP package with SC/UPC receptacle optical interface
- Single +3.3V power supply
- Operation case temperature -40~85°C for industrial and -10~70°C for commercial
- RoHS6 compliance

### Operating Condition

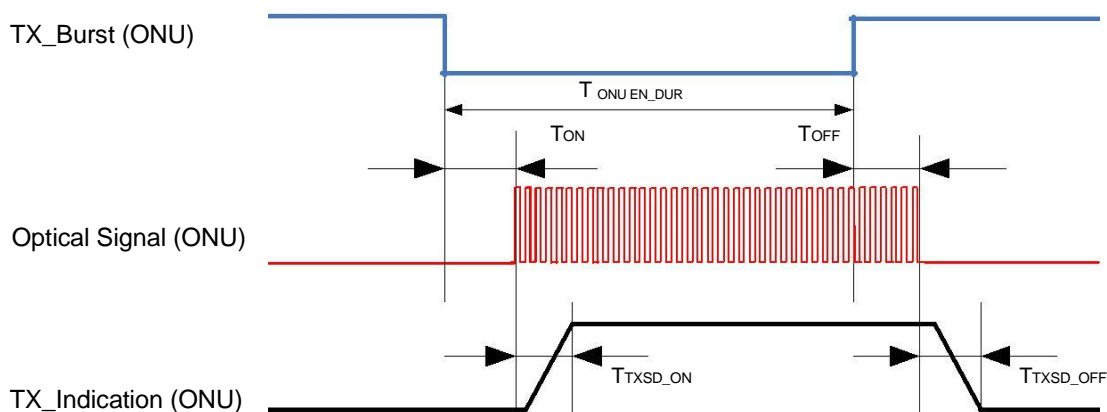
Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Case Temp for C-temp	°C	0		70
Operating Case Temp for I-temp	°C	-40		85
Power Supply Voltage	V	3.15	3.3	3.45
Supply Current	mA		200	400
Bit Rate for Tx	Gbps		1.244	
Bit Rate for Rx	Gbps		2.488	

### Characteristics

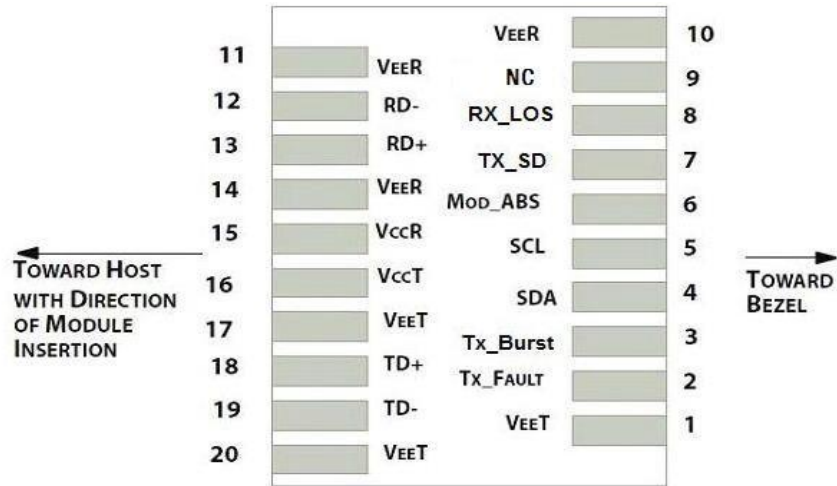
All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.
Transmitter				
TX Central Wavelength	nm	1290	1310	1330
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio (SMSR)	dB	30		
Mean Launched Power	dBm	0.5		5

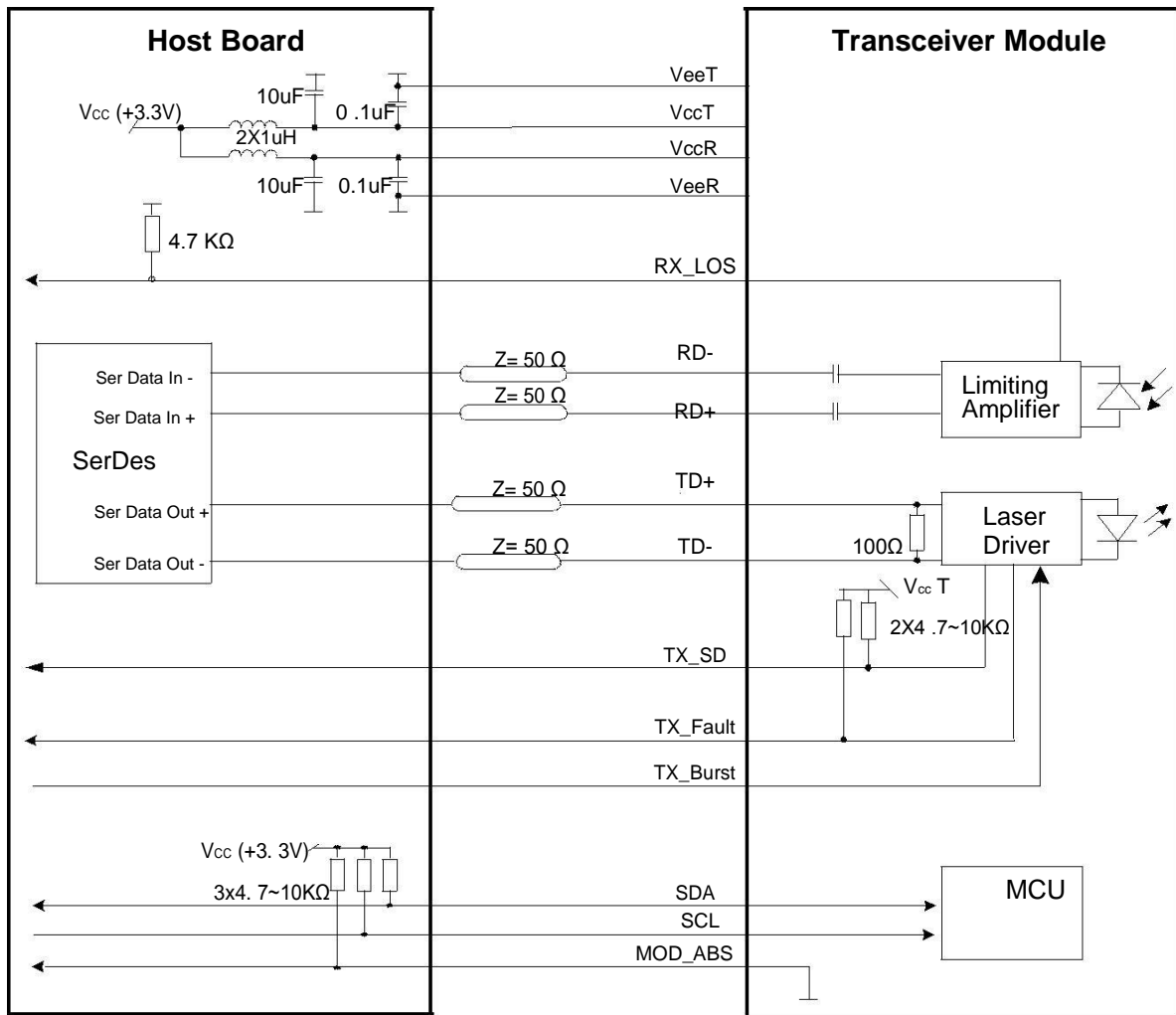
Mean Launched Power (TX Off)	dBm			-45
Extinction Ratio	dB	10		
Optical Return Loss Tolerance	dB	-15		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask (PRBS2 <sup>23</sup> -1@1.244G)	Compliant With ITU-T G984.2			
<b>Receiver</b>				
Receive Wavelength	nm	1480	1490	1500
Sensitivity (PRBS2 <sup>23</sup> -1@2.488G, ER=8.2, BER<10 <sup>-10</sup> )	dBm			-28
Overload (PRBS2 <sup>23</sup> -1@2.488G, ER=8.2, BER<10 <sup>-10</sup> )	dBm	-8		
Loss of signal De-assert Level	dBm			-29
Loss of signal assert Level	dBm	-39		
LOS Hysteresis	dB	0.5		6
WDM Filter isolation to 1441 nm ~1450 nm,1530 nm ~1539 nm	dB	25		
WDM Filter isolation to 1250 nm ~1441 nm,1539 nm~ 1625 nm	dB	36		
<b>Electrical Interface Characteristics</b>				
Data Input Swing Differential/TX	mV	200	-	2000
Data Output Swing Differential/RX	mV	400		1600
Date Differential Impedance	Ω	90	100	110
LVTTTL Output High	V	2.4		V <sub>cc</sub>
LVTTTL Output Low	V	0		0.4
LVTTTL Input High	V	2.0		V <sub>cc</sub> +0.3
LVTTTL Input Low	V	0		0.8
<b>Timing Characteristics</b>				
Turn On Time at Burst mode (T <sub>ON</sub> )	ns			12.8
Turn Off Time at Burst mode (T <sub>OFF</sub> )	ns			12.8
TX-SD Assert Time (T <sub>TXSD ON</sub> )	ns			100
TX-SD De-assert Time (T <sub>TXSD OFF</sub> )	ns			100
LOS Assert Time (T <sub>LOSA</sub> )	us			100
LOS De-assert Time (T <sub>LOSD</sub> )	us			100

**Burst Mode Transmitter Timing (TX\_Burst signal low active transmitter on)****PIN Definition**

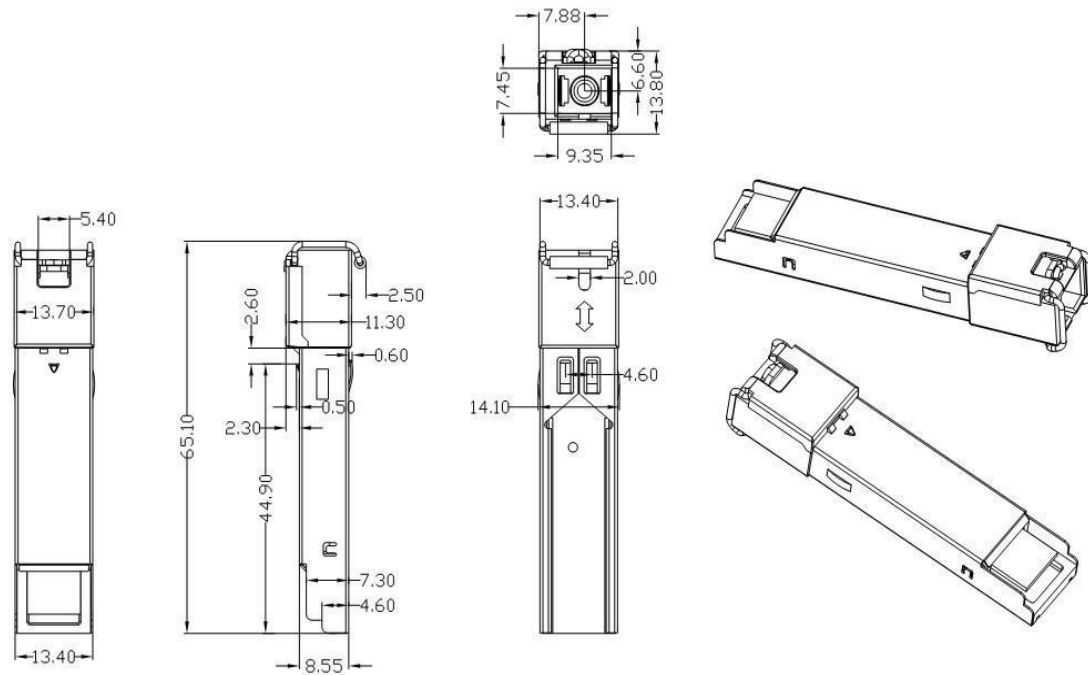
Pin No.	Symbol	Level / Logic	Description
1	VeeT		Module Transmitter Ground
2	Tx_Fault	LVTTL-O	Module Transmitter Fault
3	Tx_Burst	LVTTL-I	Transmitter Burst Control, active low for transmitter on
4	SDA	LVTTL-I	2-Wire Serial Interface Data Line
5	SCL	LVTTL-I/O	2-Wire Serial Interface Clock
6	MOD_ABS	LVTTL-O	Module Absent, connected to ground in the module
7	TX_SD	LVTTL-O	Tx Signal Detect, active high when transmitter on
8	RX_LOS	LVTTL-O	Loss of Receiver Signal Indication
9	NC		
10	VeeR		Module Receiver Ground
11	VeeR		Module Receiver Ground
12	RD-	CML-O	Receiver Inverted Data Output, AC-coupled
13	RD+	CML-O	Receiver Non-Inverted Data Output, AC-coupled
14	VeeR		Module Receiver Ground
15	VccR		Module Receiver 3.3V Supply
16	VccT		Module Transmitter 3.3V Supply
17	VeeT		Module Transmitter Ground
18	TD+	LVPECL-I	Transmitter Non-Inverted Data Input, DC-coupled
19	TD-	LVPECL-I	Transmitter Inverted Data Input, DC-coupled
20	VeeT		Module Transmitter Ground



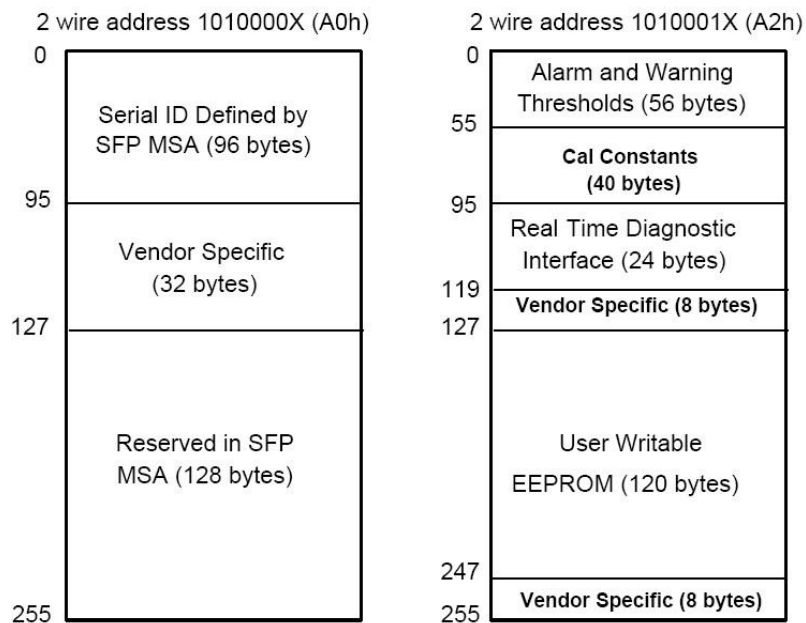
Typical Interface Circuit



### Mechanical Diagram



### EEPROM Memory Map



**Ordering information<sup>1</sup>**

PN	Description
XSB34X-20SY	GPON SFP ONU, B+,1.25G, Tx 1310nm, Rx 1490nm, TX_Burst signal low active transmitter on, SFP form-factor, SC/UPC receptacle connector, Commercial temperature
XSB34X-20SE	GPON SFP ONU, B+,1.25G, Tx 1310nm, Rx 1490nm, TX_Burst signal low active transmitter on, SFP form-factor, SC/UPC receptacle connector, Industrial temperature

**Notes:**

<sup>1</sup> For accurate order specification please contact Xenya before placing an order. The content of this document is subject to change without notice. Xenya does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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To find out more, please contact:

Xenya d.o.o  
 Celovška cesta 172  
 1000 Ljubljana  
 Slovenija  
 +386 (0)1 514 06 10  
[info@xenia.si](mailto:info@xenia.si)