

SFP-EPON-ONU-PX10-I-C

MSA and TAA 1.2Gbps/2.4Gbps-PX10 EPON ONU SFP Transceiver (SMF, 1310nmTx/1490nmRx, PX10, 10km, SC, -40 to 85C)

Features:

- SFP Package with SC connector
- 1.25Gbps, 1310nm BM Transmitter
- 1.25Gbps, 1490nm Receiver
- Compliant With IEEE 802.3ah-2004
- BM Tx with burst on less than 512ns
- Compliant with SFP MSA
- Operating Temperature: -40C to +85C
- RoHS compliant and Lead Free



Applications:

- EPON ONU
- Access and Enterprise

Product Description

This MSA Compliant SFP transceiver provides 2.4Gbps/1.2Gbps-OLT throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nmTx/1490nmRx via a SC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	VCC	0		4.0	V	
Storage Temperature	Ts	-40		+85	°C	
Operating Case Temperature	Tc	-40		+85	°C	
Operating Relative Humidity	Hopr			95	%	
Relative Humidity	RH	5		95	%	
Data Rate	Upstream/Downstream		1.25/1.25		Gbps	

Electrical Characteristics

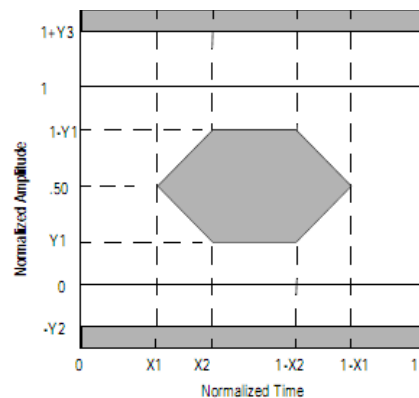
Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		VCC	3.13	3.3	3.47	V	
Power Supply Current		ICC			300	mA	
Transmitter							
LVPECL Compatible Inputs (Differential)		Vin	300		1600	mVpp	DC coupled internally
Power Supply Current		ICC_Tx			200	mA	
Input Impedance (Differential)		Zin	90	100	110	ohms	Rin > 100 kohms @ DC
Burst Control	Tx ON / Burst Enable	VIH	2		Vcc	V	
	Tx Off / Burst Disable	VIL	0		0.8	V	
Tx Fault_High			2.4		Vcc	V	
Tx Fault_Normal			0		0.4	V	
Receiver							
CML Outputs (Differential)		Vout	600		1000	mVpp	AC coupled outputs
Power Supply Current		ICC_Rx			150	mA	
Rx_SD	Normal		2		Vcc	V	
	SD		0		0.8	V	

Optical Characteristics (1310nm FP and PIN-TIA)

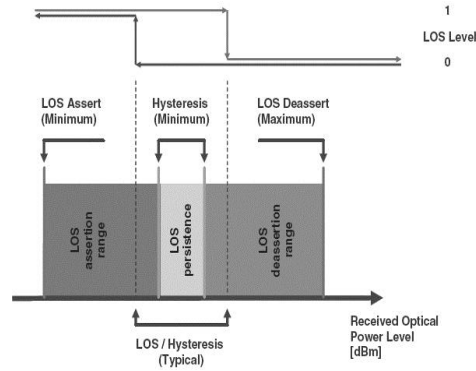
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Date Rate (Upstream/Downstream)			1.25/1.25		Gbps	
Transmitter						
Center Wavelength	λ_C	1280	1310	1360	nm	
Spectral Width (RMS)	$\Delta\lambda$			3.5	nm	
Average Output Power	P _{out}	-1		4	dBm	1
Extinction Ratio	ER	9			dB	2
Rise/Fall Time (20%~80%)	tr/tf			160	ps	2, 3
Tx Burst On Time	T _{on}			512	ns	
Output Optical Eye	IEEE 802.3ah Compliant					2, 5
Optical Output Power with TX OFF	P _{off}			-45	dBm	
Receiver						
Center Wavelength	λ_c	1480	1490	1500	nm	
Receiver Sensitivity	P _{min}			-24	dBm	4
Receiver Overload	P _{max}	-3			dBm	4
Receiver Reflectance	CR			-20	dB	
LOS De-Assert	LOSD			-25	dBm	
LOS Assert	LOSA	-35			dBm	
LOS Hysteresis		0.5		6	dB	6
Damage Threshold for Receiver	Pin, damage	3			dBm	
Maximum Receiver Reflectance	R _{x_r}			-20	dB	

Notes:

1. Measured with 9/125um G.652 SMF.
2. Filtered, Measured with PRBS²⁷-1 test pattern @1.25Gbps.
3. Measured with the Bessel-Thompson filter OFF.
4. Measured with a PRBS ²⁷-1 test pattern @1.25Gbps, BER 1X10⁻¹².
5. Eye pattern mask



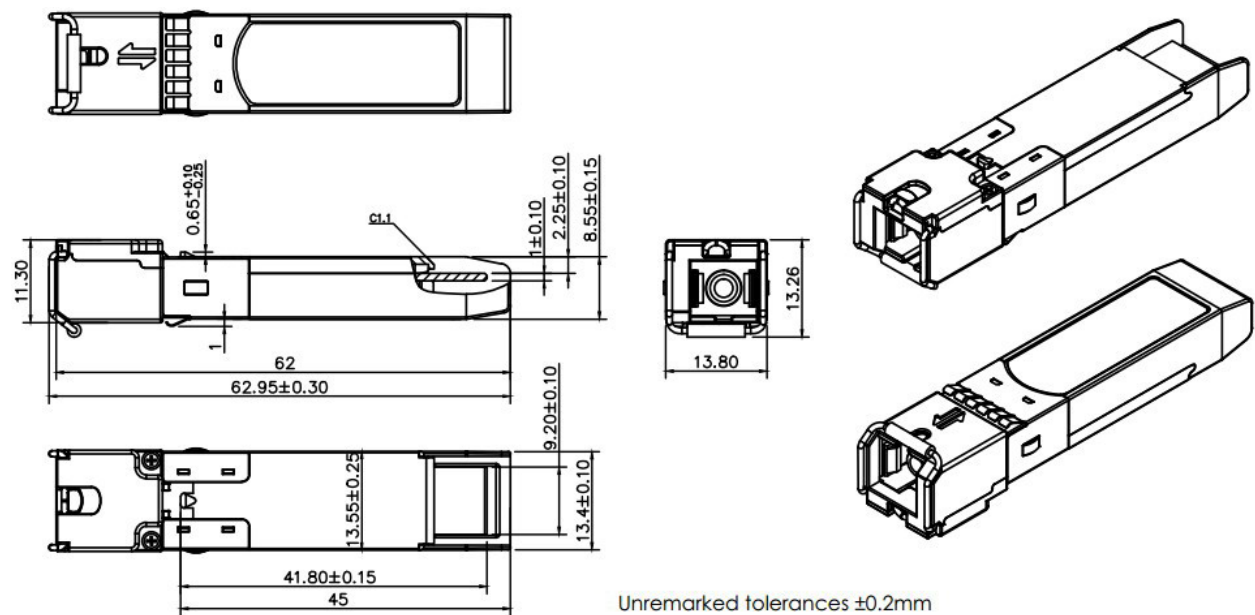
6. LOS Hysteresis(SD signal coincides with the LOS signal inversion)



SFP Pin Function Descriptions

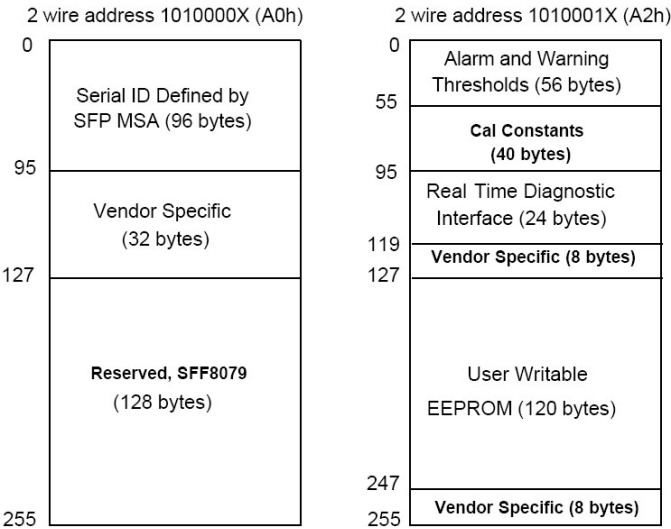
Pin	Name	Description
1	VeeT	Rx Ground
2	Tx Fault	The transceiver fails to work when default setting is active high.
3	TX Disable	LVTTTL input. The default (Low Burst) setting is that laser output is disable when this pin is asserted high and laser output is enabled when this pin is asserted low or (High Burst) laser output is disable when this pin is asserted low and laser output is enabled when this pin is asserted high. (BEN)
4	MOD_DEF(2)	2-Wire Serial Data I/O Pin.(SDA)
5	MOD_DEF(1)	2-Wire Serial Clock Input.(SCL)
6	MOD_DEF(0)	Internally Grounded
7	TX_SD	Tx Transmitter State Indication, Assert high when Transmitter ON. Or to the ground directly.
8	LOS/SD	The default setting is SD that active high when signal is detected. While the setting is LOS, it active low when signal is detected.(LVTTTL);
9	NC	Not Connect
10	VeeR	Rx Ground
11	VeeR	Rx Ground
12	RXD-	Inverted Receiver Data Output (AC-Coupled internally)
13	RXD+	Non-Inverted Receiver Data Output (AC-Coupled internally)
14	VeeR	Rx Ground
15	Vcc_RX	Rx Vcc
16	Vcc_TX	Tx Vcc
17	Veet	Tx Ground
18	TXD+	Non-Inverted Transmitter Data Input (DC-Coupled)
19	TXD-	Inverted Transmitter Data Input (DC-Coupled)
20	Veet	Tx Ground
	F	Mounting Studs

Mechanical Specifications



Digital Diagnostic Interface

The memory map in the following describes an extension to the memory map defined in SFF-8472. The enhanced interface uses the two wire serial bus address 1010001X (A2h) to provide diagnostic information about the module’s present operating conditions.



About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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