EPON OLT SFP PX20++

ES9116T-CN Product Specification

FEATURES

- Single fiber bi-directional data links symmetric 1.25Gbps application
- 1490nm continuous-mode DFB laser transmitter and 1310nm burst-mode APD-TIA receiver
- Reset-less burst-mode receiver simply the system design
- More than 24dB wide dynamic range
- 0 to 70° C operating case temperature,
- Single 3.3V power supply
- Digital diagnostic monitoring interface
- Digital burst RSSI function to monitor the input optical power level
- LVPECL compatible data input/output interface
- LVTTL transmitter disable control
- LVTTL transmitter laser fault alarm
- LVTTL receiver loss of signal indication
- Low EMI and excellent ESD protection
- Class I laser safety standard IEC-60825 compliant
- RoHS-6 compliance

APPLICATIONS

- Gigabit Ethernet Passive Optical Networks (GEPON) 20Km 1:32 application or 10Km 1:64 application

ORDERING INFORMATION

Part Number	From Factor	Data Rate（Gbps）	Media	Distance (km)	Wavelength (nm)	Temperature (℃)
ES9116T-CN	SFP	1.25Gb/s	-	20	1490/1310	0~70

1. ABSOLUTE MAXIMUM PARAMETERS

Exceeding the limits below may damage the active optical cable permanently.

Parameter	Symbol	Min.	Typ.	Max.	Unit.	Ref.
Storage Ambient Temperature	TSTG	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Operating Humidity	OH	5		90	%	
Power Supply Voltage	VCC	0		3.6	V	
Receiver Damaged Threshold		+4			dBm	

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.	Ref.
Operating Case Temperature	Tc	0		70	°C	
Power Supply Voltage	VCC	3.13	3.3	3.47	V	
Operating Humidity Range	OH	5		90	%	
Data Rate			1.25		Gbit/s	
Data Rate Drift		-100		+100	PPM	

3. OPTICAL CHARACTERISTICS

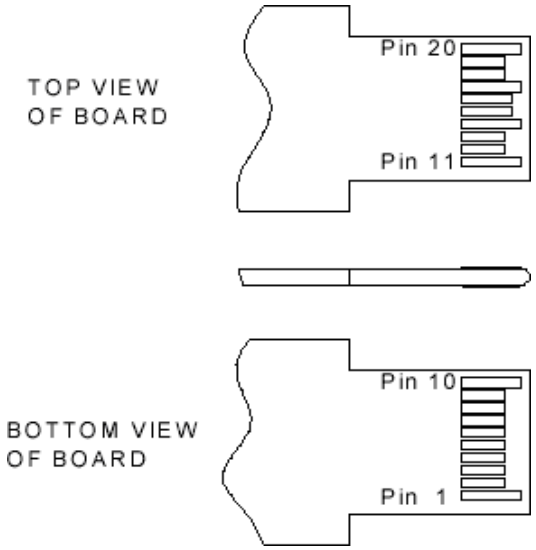
Parameter	Symbol	Min.	Typ.	Max.	Unit.	Ref.
Transmitter						
Optical Center Wavelength	λC	1480	1490	1500	nm	
Optical Spectrum Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Launch Optical Power	AOP	+2		+7	dBm	EOL, Over Temperature
Power-OFF Transmitter Optical Power				-39	dBm	Launched into SMF
Extinction Ratio	ER	9			dB	PRBS 2^7-1 test pattern @1.25Gbit/s
Total Jitter	TJ			0.43	UI	PRBS 2^7-1 test pattern @1.25Gbit/s
Rise/Fall Time (20%-80%)	TR/TF			260	ps	Bessel-Thompson Filter OFF.
RIN15OMA				-115	dBc/Hz	
Optical Return Loss Tolerance				15	dB	
Transmitter Reflectance				-10	dB	
Transmitter and Dispersion Penalty	TDP			2.3	dB	Transmit on 20km SMF

Optical Waveform Diagram	Compliant with IEEE Std 802.3ah™-2004					Figure 1
Receiver						
Operating Wavelength		1260		1360	nm	
Sensitivity	SEN			-30	dBm	PRBS 2^7-1@1.25Gbps BER ≤1×1E-10
Saturation Optical Power	SAT	-6			dBm	PRBS 2^7-1@1.25Gbps BER ≤1×1E-10
Loss Of Signal De-assert Level	LOSD			-31	dBm	
Loss Of Signal Assert Level	LOSA	-45			dBm	
Loss Of Signal Hysteresis		0.5		6	dB	
Receiver Reflectance				-12	dB	

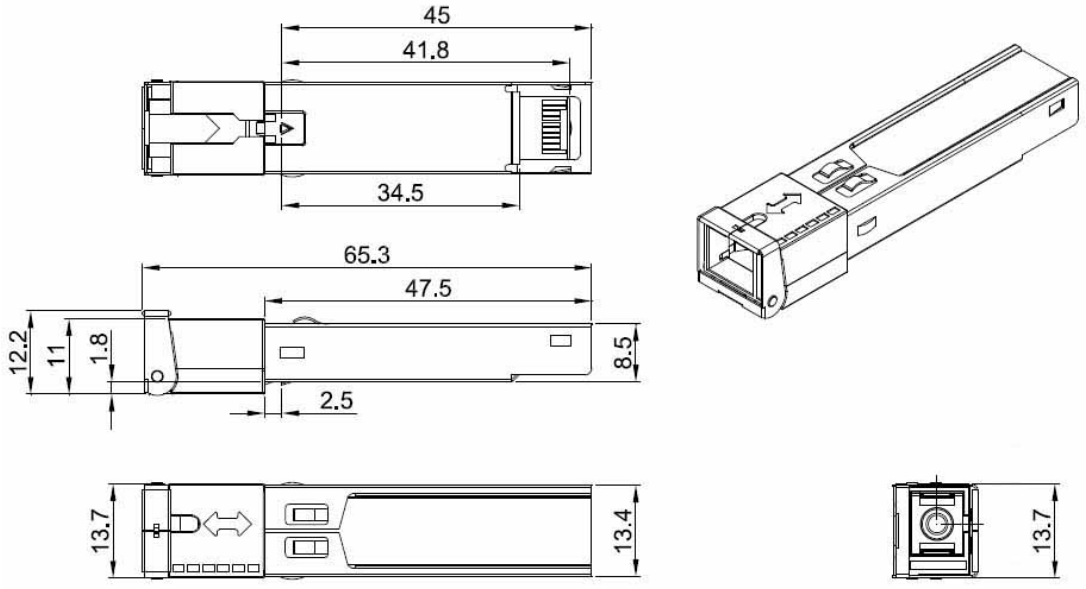
4.PIN DESCRIPTION

PIN	Symbol	Description	Ref.
1	VEET	Transmitter Ground	
2	TX Fault	Transmitter Fault Indication	High: abnormal; Low: normal
3	TX Disable	Transmitter Disable	High: transmitter disable; Low: transmitter enable
4	MOD-DEF2	Module Definition 2	The data line of two wire serial interface
5	MOD-DEF1	Module Definition 1	The clock line of two wire serial interface
6	MOD-DEF0	Module Definition 0	Connected to Ground in the transceiver
7	RSSI Trigger	RSSI Trigger for Transceiver	High: enable RSSI A/D conversion
8	LOS	Loss of Signal	High: Loss Of Signal; Low: Signal Detected
9	VEER	Receiver Ground	
10	VEER	Receiver Ground	
11	VEER	Receiver Ground	
12	RD-	Inv. Receiver Data Out	LVPECL logic output, DC coupled
13	RD+	Receiver Data Out	LVPECL logic output, DC coupled
14	VEER	Receiver Ground	
15	VCCR	Receiver Power	
16	VCCT	Transmitter Power	
17	VEET	Transmitter Ground	
18	TD+	Transmit Data In	LVPECL logic input, AC coupled
19	TD-	Inv. Transmit Data In	LVPECL logic input, AC coupled
20	VEET	Transmitter Ground	

5.PIN DIAGRAM



6.MECHANICAL SPECIFICATION



7.LABEL DIAGRAM

Optowire **ES9116T-CN**

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Class 1 Laser

MADE IN CHINA

S/N: ?????????

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