SFP 1.25G Duplex CWDM 80km LC

TSXXCAZ-CN

FEATURES

- Duplex LC receptacle optical interfacecompliant
- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Up to 80km on 9/125μm SMF
- Duplex LC connector
- DFB laser transmitter
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- Maximum Power <1W

APPLICATIONS

- Metro/Access Networks
- 1.25 Gb/s 1000Base-EX Ethernet
- 1×Fibre Channel
- Other Optical Links

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Part Number	From Factor	Data Rate	Media	Distance (km)	Wavelength (nm)	Temperature (℃)
TSXXCAZ-CN	SFP	1.25G	SMF	80	CWDM	0~70

NOTE:

CWDM:1270、1290、1310、1330、1350、1370、1390、1410、1430、1450、1470、1490、1510、1530、1550、1570、1590、1610

1. ABSOLUTE MAXIMUM PARAMETERS

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

Parameter	Symbol	Min.	Max.	Unit.
Storage Temperature Range	Ts	-40	85	℃
Relative Humidity	RH	5	95	%
Maximum Supply Voltage	Vcc3	-0.5	4.0	V

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.
Operating Case Temperature Range	Tc	0		70	℃
Power Supply Voltage	Vcc	3.14	3.3	3.46	V
Bit Rate	BR		1.25		Gb/s
Bit Error Ratio	BER			1E-12	
Max Supported Link Length	L			80	Km

3. ELECTRICAL CHARACTERISTICS

Parameter	Min.	Typ.	Max.	Unit.	Notes
Input Differential Impedance	80	100	120	Ω	
Differential Data Input	150		1100	mVp-p	
Transmit Disable Voltage	2		VCCHOST	V	
Transmit Enable Voltage	VEE		VEE+0.8	V	
Transmit Fault Assert Voltage	2		VCCHOST	V	
Transmit Fault De-Assert Voltage	VEE		VEE+0.4	V	
Differential Data Output	300		600	VOD	
Output Rise Time	25			tRISE	
Output Fall Time	25			tFALL	
LOS Fault	2		VCCHOST	VLOSFT	

LOS Normal	VEE		VEE+0.4	VLOSNR	

4. OPTICAL CHARACTERISTICS

Optical transmitter Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Nominal Wavelength	λ	λ-6.5	λ	λ+6.5	nm	
Optical Output Power	Pav	0		5	dBm	
Spectral Width(RMS)	σRMS			3	nm	
Extinction Ratio	ER	9			dB	
Average Launch Power of OFF Transmitter	POFF			-45	dBm	
Optical receiver Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Receiver Sensitivity	RSENSE			-28	dBm	1
Receiver Overload		-3			dBm	
LOS Assert	LOSA			-30	dBm	
LOS De-Assert LOS	LOSD	-38			dBm	
LOS Hysteresis		0.5	2	6	dB	

NOTE:

1. Measured at CWDM,ER>9dBm, PRBS 2^7-1 and BER better than or equal to 1E-12

5. PIN DESCRIPTIONS

Pin	Symbol	Function/Description	Ref.
1	VeeT	Transmitter Ground	
2	TX Fault	Transmitter Fault Indication	1
3	TX Disable	Transmitter Disable-Module disables on high or open	2
4	MOD-DEF2	Module Definition 2-Two wire serial ID interface	3
5	MOD-DEF1	Module Definition 1-Two wire serial ID interface	3
6	MOD-DEF0	Module Definition 0-Two wire serial ID interface	3
7	Rate Select	Not Connected	
8	LOS	Loss of Signal	4
9	VeeR	Receiver Ground	
10	VeeR	Receiver Ground	
11	Veer	Receiver Ground	
12	RD-	Inverse Received Data out	5
13	RD+	Received Data out	5
14	VeeR	Receiver Ground	
15	VccR	Receiver Power —— +3.3V±5%	6
16	VccT	Transmitter Power —— +3.3 V±5%	6

17	VeeT	Transmitter Ground	
18	TD+	Transmitter Data In	7
19	TD-	Inverse Transmitter Data In	7
20	VeeT	Transmitter Ground	

NOTE:

1. TX Fault is open collector/drain output which should be pulled up externally with a 4.7K–10KΩresistoronthehostboardtosupply<VccT+0.3VorVccR+0.3V.Whenhigh,thisoutputindicates alaserfault of some kind. Low indicates normal operation. In the low state, the output will be pulled to<0.8V

2. TXDisableinputisusedtoshutdownthelaseroutputperthestatetablebelow.Itispulledupwithin the module with a 4.7 – 10Kresistor.

Low (0 to 0.8V): Transmitter on Between (>0.8V, < 2.0V): Undefined

High (2.0 to 3.47V): Transmitter Disabled Open: Transmitter Disabled

3. Mod-Def 0, 1, 2. These are the module definition pins. They should be pulled up with a 4.7 - 10K resistor on the host board to supply less than VccT+0.3V or VccR+0.3V.

Mod-Def 0 is grounded by the module to indicate that the module is present

Mod-Def 1 is clock line of two wire serial interface for optional serial ID.

Mod-Def 2 is data line of two wire serial interface for optional serial ID.

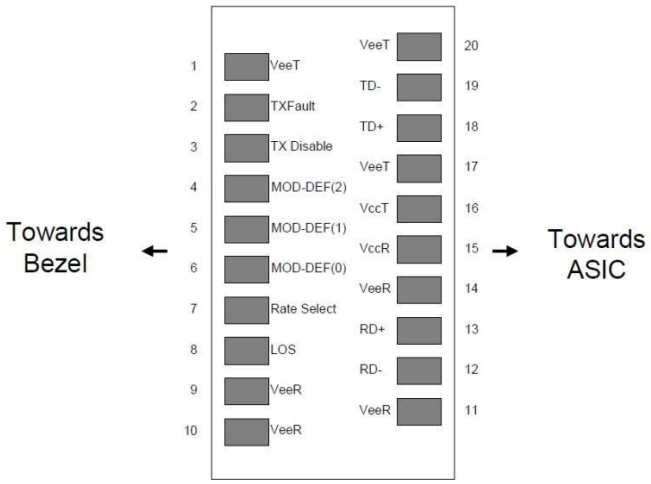
4. LOS(Lossofsignal)isanopencollector/drainoutputwhichshouldbepulledupexternallywitha 4.7K – 10K resistor on the host board to supply <VccT+0.3V or VccR+0.3V. When high, this output indicates the received optical power is below the worst case receiver sensitivity (as defined by the standard in use). Low indicates normal operation. In the low state, the output will be pulled to <0.8V.

5. RD-/+:Thesearethedifferentialreceiveroutputs.TheyareACcoupled100Ωdifferentiallinesw hichshouldbeterminatedwith100Ωdifferentialattheuser SERDES.TheACcouplingisdoneinsidethemod ule and thus not required on the hostboard.

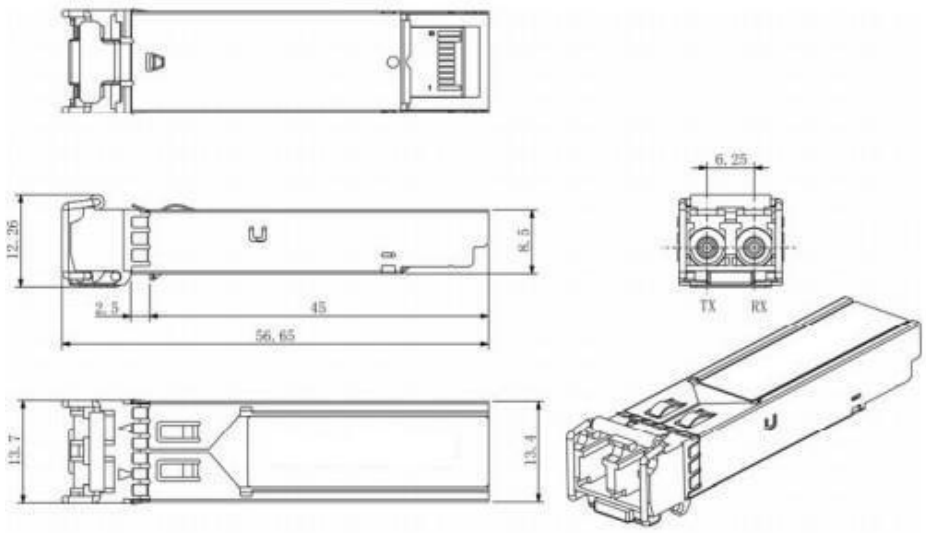
6. VccRandVccTarethereceiverandtransmitterpowersupplies.Theyaredefinedas3.3V±5%at theSFPconnectorpin.Thein-rushcurrentwilltypicallybenomorethan30mAabovesteadystatesupplycurr ent after500ns

7. TD-/+:Thesearethedifferentialtransmitterinputs.TheyareACcoupleddifferentiallineswith10 0 Ω differential termination inside the module. The AC coupling is done inside the module and is thus not required on hostboard

6. PIN DIAGRAM



7. Mechanical Design Diagram



8. LABEL DIAGRAM