北亿纤通科技有限公司

F-TONE GROUP 集团旗下

Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

	Unit	Values
Operating Reach	**m**	**20K**
Transmit		
Center wavelength (range)	nm	1260 -1355
Side Mode Suppression Ratio (min)	dB	30
Launched power		
– maximum	dBm	+1
– minimum	dBm	-5 Notes1
– OMA	dBm	-5.2
– OMA-TDP (min)	dBm	-6.2
Transmitter and dispersion penalty	dB	0 Notes4
Average launch power of OFF transmitter (max)	dBm	-30
Extinction ratio (min)	dB	3.5 Notes2
RIN12 OMA (max)	dB/Hz	-128
Optical Return Loss Tolerance (min)	dB	12
Receiver		
Center wavelength (range)	nm	1260-1355
Receive overload (max) in average power[1]	dBm	0.5
Receive sensitivity (min) in average power[1]	dBm	-14.4 Notes3
Receiver sensitivity (max) in OMA (footnote 2)	dBm	-12.6 Notes3
Receiver Reflectance (max)	dB	-12
Stressed receiver sensitivity (max) in OMA[2]	dBm	-10.3
Vertical eye closure penalty (min)[3]	dB	2.2
Stressed eye jitter (min)[2]	UIp-p	0.7
Receive electrical 3dB upper cutoff frequency (max)	GHz	12.3
Receiver power (damage, Max)	dBm	1.5

Notes:

1. The optical power is launched into SMF
2. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps
3. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps BER$\leqslant 10^{-12}$
4. In G.652 and G.655(NDSF)

Electrical characteristics

The following electrical characteristics are defined over the Recommended Operating Environment

unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		-	10.3125	-	Gbps	
Power Consumption		-	1200	1500	mW	
Transmitter						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
C common mode voltage tolerance		15	-	-	mV	
Tx Input Diff Voltage	VI	400		1600	mV	
Tx Fault	VoL	-0.3		0.4	V	At 0.7mA
Data Dependent Input Jitter	DDJ			0.10	UI	
Data Input Total Jitter	TJ			0.28	UI	
Receiver						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
Rx Output Diff						

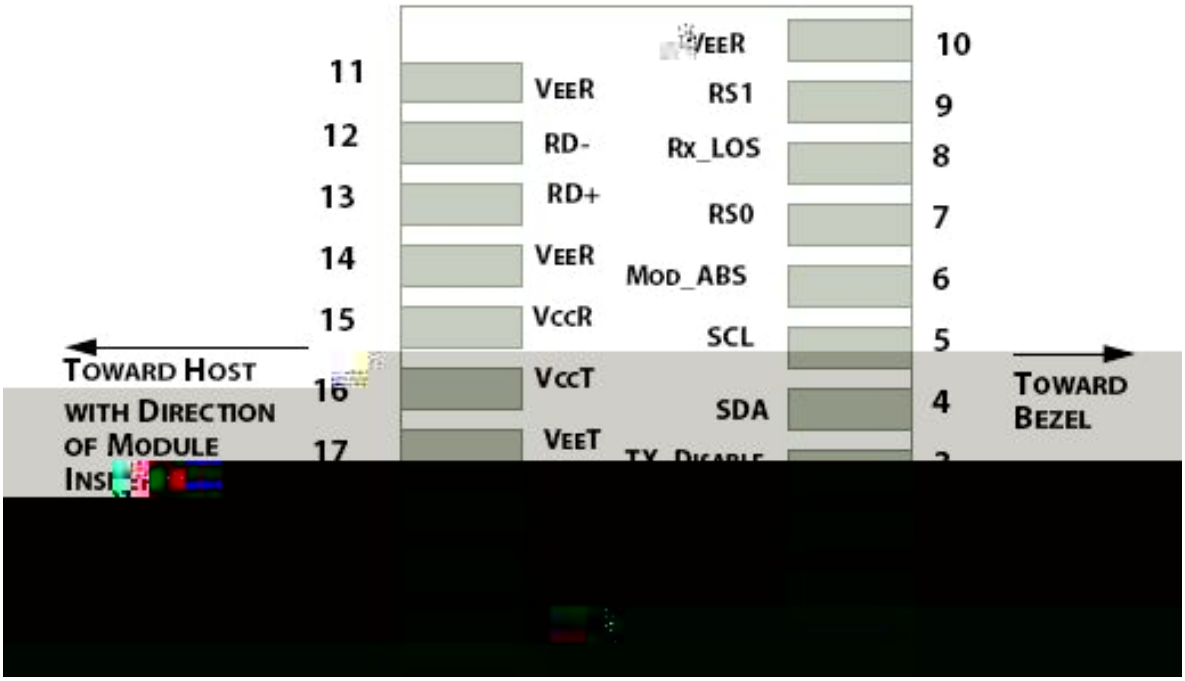

Figure 1: Interface to Host PCB

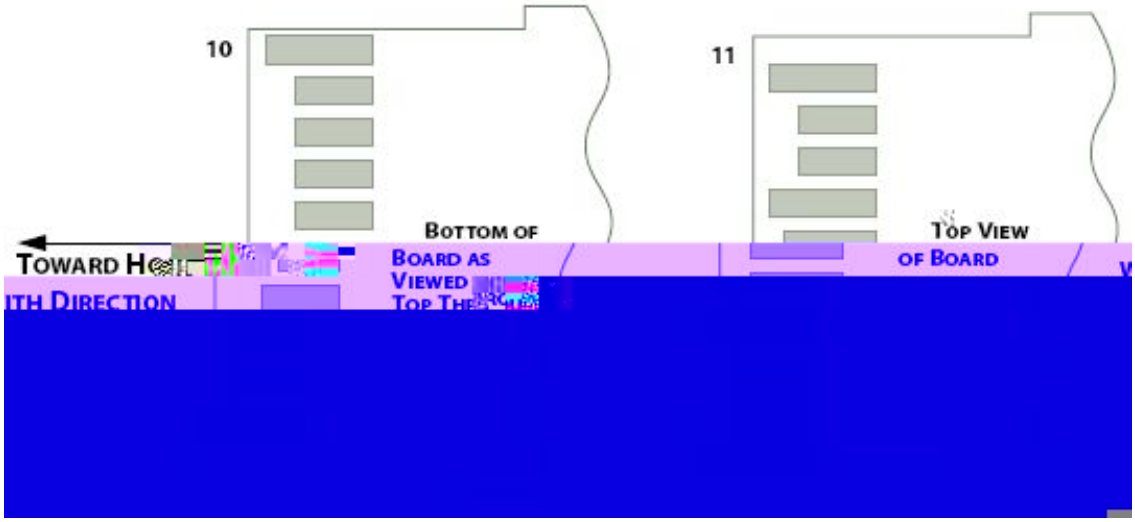

Figure 2: Module Contact Assignment

Pin definition

Pin	Symbol	Name/Description
1	VEET [1]	Transmitter Ground

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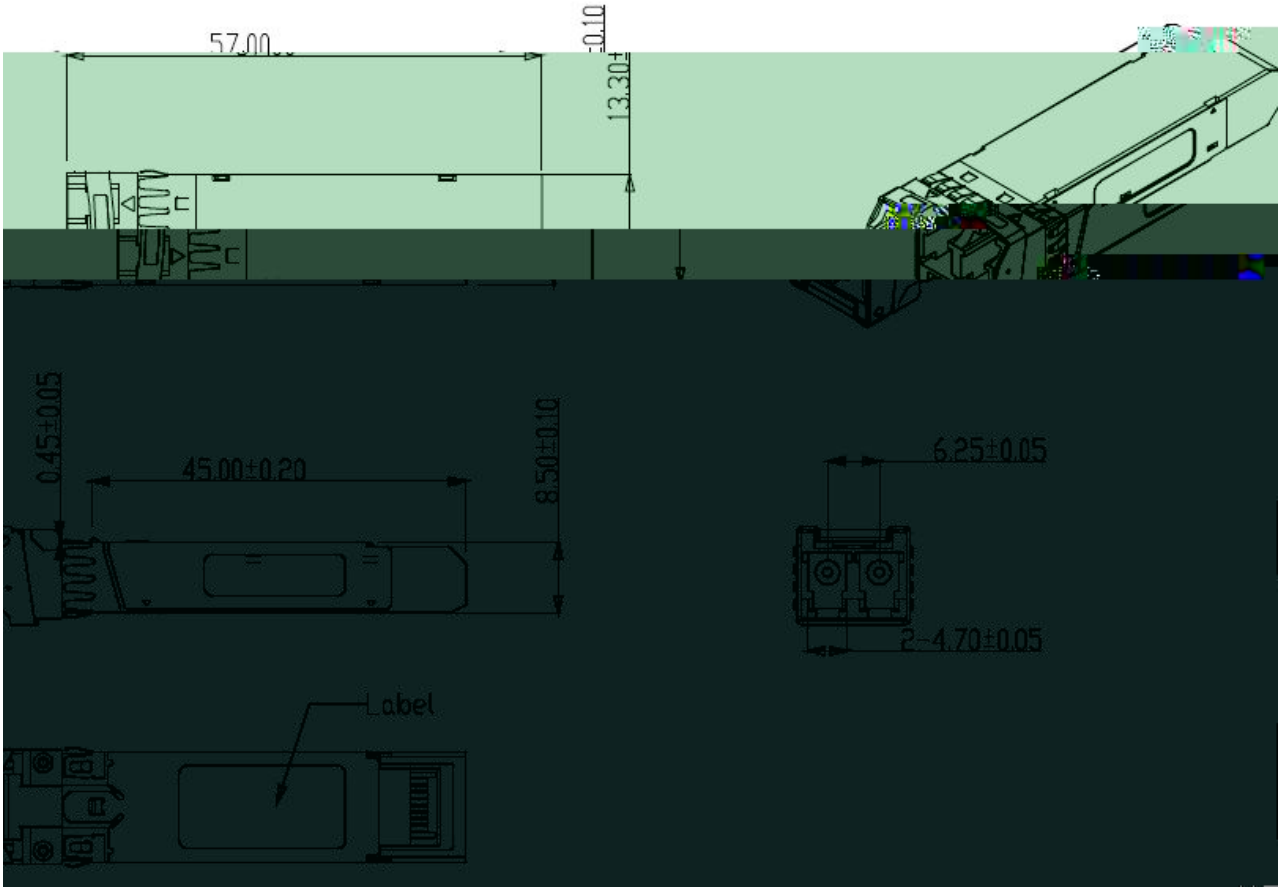

Figure5. Mechanical Specifications

Regulatory Compliance

F-tone Networks SFP+ transceiver is designed to be Class I Laser safety compliant and is certified per the following standards:

Feature	Agency	Standard
Laser Safety	FDA	CDRH 21 CFR 1040 annd Laser Notice No. 50
Product Safety	UL	UL and CUL EN60950-2:2007
Environmental protection	SGS	RoHS Directive 2002/95/EC
EMC	WALTEK	EN 55022:2006+A1:2007 EN 55024:1998+A1+A2:2003

Ordering information

Part Number	Product Description
FTCS-131X-20D	1310nm, 10Gbps, SFP+ 20km, 0ºC ~ +70ºC
FTCS-131X-20DI	1310nm, 10Gbps, SFP+ 20km, -40 to +85°C

References

1. "Specifications for Enhanced Small Form Factor Pluggable Module SFP+", SFF-8431, Rev 4.1, July 6, 2009.
2. "Improved Pluggable Formfactor",SFF-8432, Rev 4.2,Apr 18,2007
3. IEEE802.3ae – 2002
4. "Diagnostic Monitoring Interface for Optical Transceivers" SFF-8472, Rev 10.3, Dec 1,2007

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by F-tone Networks before they become applicable to any particular order or contract. In accordance with the F-tone Networks policy of continuous improvement specifications may change without notice.

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