



SFP-25GB-BXD32-80-SKY

MSA Compliant 25GBase-BX SFP28 Transceiver (SMF, 1309.14nmTx/1295.56nmRx, 80km, LC, DOM)

Product Description

This MSA compliant SFP28 transceiver provides 25GBase-BX throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1309.14mTx/1295.56nmRx via an LC connector. This bidirectional unit must be used with another transceiver or network appliance of complementing wavelengths. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Skylane's transceivers are RoHS compliant and lead-free.

Features:

- Supports Data Rate Up to 25.78125Gbps
- Hot-Pluggable SFP Footprint
- Compliant to IEEE 802.3cc, SFF-8472, and SFF-8419
- Up to 80km on SMF
- EML Tx and Integrated SOA and PIN TIA Rx
- Single LC Connector
- Operating Temperature: 0 to 70 Celsius
- Power Consumption: 2.2W
- RoHS Compliant and Lead-Free



Applications:

- 25GBase Ethernet
- Access and Enterprise

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 / JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Operating Case Temperature	Tc	0		70	°C	
Storage Temperature	Tstg	-40		85	°C	
Relative Humidity – Storage	RHstg	5		95	%	
Relative Humidity – Operating	RHc	5		85	%	
Supply Voltage	Vcc	0		3.6	V	
Transmission Distance	TD			80	km	Over SMF

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		Vcc	3.135	3.3	3.465	V	
Power Supply Current		Icc			660	mA	
Power Consumption		PC			2.2	W	
Transmitter							
Differential Input Resistance		R_RDIN	90	100	110	Ω	
Input Differential Voltage		R_VDIFF			900	mVp-p	
Tx_Disable	Normal Operating	VIL	-0.3		0.8	V	
	Laser Disable	VIH	2.0		Vcc+0.3	V	
Receiver							
Differential Resistance		T_RD	90	100	110	Ω	
Output Differential Voltage		T_VDIFF			900	mVp-p	
Differential Termination Resistance Mismatch		T_RDM			10	%	
Rx_LOS	Normal Operating	VOL	-0.3		0.4	V	
	Loss of Signal	VOH	2		Host_Vcc	V	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ_C	1308.09	1309.14	1310.19	nm	
Average Output Power	POUT	2		7	dBm	1
Average Output Power (Laser Off)	POFF			-30	dBm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	8			dB	
RIN _{20OMA}	RIN			-128	dB/Hz	
Transmitter Dispersion Penalty	TDP			2.7	dB	
Receiver						
Center Wavelength	λ_C	1294.53	1295.56	1296.59	nm	
Receiver Sensitivity	PIN			-27	dBm	1
Optical Power Overload	PIN(SAT)	-4			dBm	
Damage Threshold		3			dBm	2
Rx_LOS of Signal Assert	PA	-40			dBm	
Rx_LOS of Signal De-Assert	PD			-28	dBm	
Rx_LOS of Signal Hysteresis	PHY	0.5		2	dB	
Optical Return Loss Tolerance	ORLT	20			dB	

Notes:

1. Test pattern: PRBS31. BER<5x10⁻⁵.
2. The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiver does not have to operate correctly at this input power.

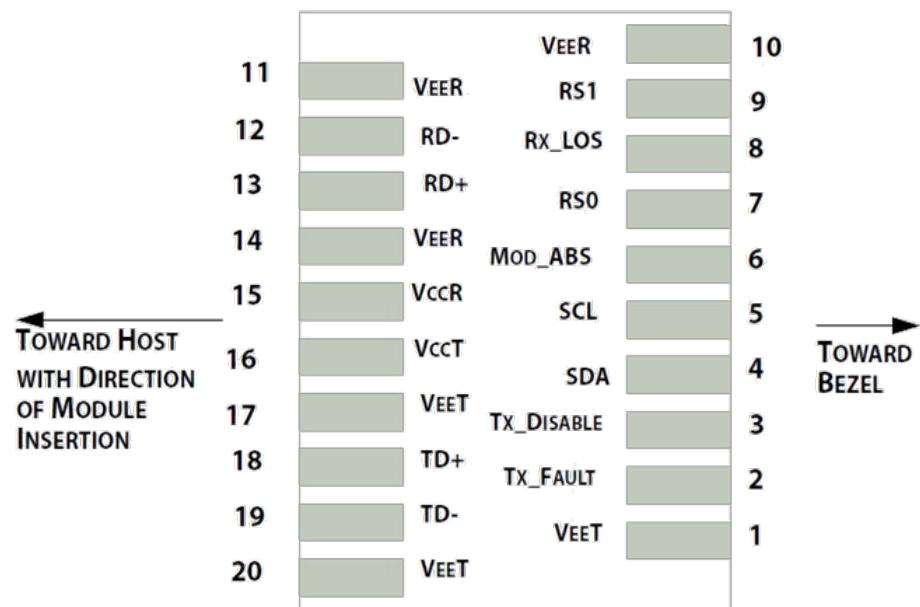
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault Indication.	2
3	Tx_Disable	Transmitter Disable. Turns off transmitter laser output.	3
4	SDA	2-Wire Serial Interface Data Input/Output (SDA).	4
5	SCL	2-Wire Serial Interface Clock Input (SCL).	4
6	MOD_ABS	Module Absent. Connect to VeeR or VeeT in the module.	4
7	RS0	Rate Select 0. Optionally control SFP+ receiver. When “high,” input data rate >4.5Gbps; when “low,” input rate ≤4.5Gbps.	5
8	LOS	Receiver Loss of Signal.	6
9	RS1	Rate Select 1. Optionally control SFP+ transmitter. When “high,” input data rate >4.5Gbps. When “low,” input rate ≤4.5Gbps.	1
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Receiver Inverted Data Output.	
13	RD+	Receiver Non-Inverted Data Output.	
14	VeeR	Receiver Ground.	1
15	VccR	+3.3V Receiver Power Supply.	
16	VccT	+3.3V Transmitter Power Supply.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Inverted Data Output.	
19	TD-	Transmitter Non-Inverted Data Output.	
20	VeeT	Transmitter Ground.	1

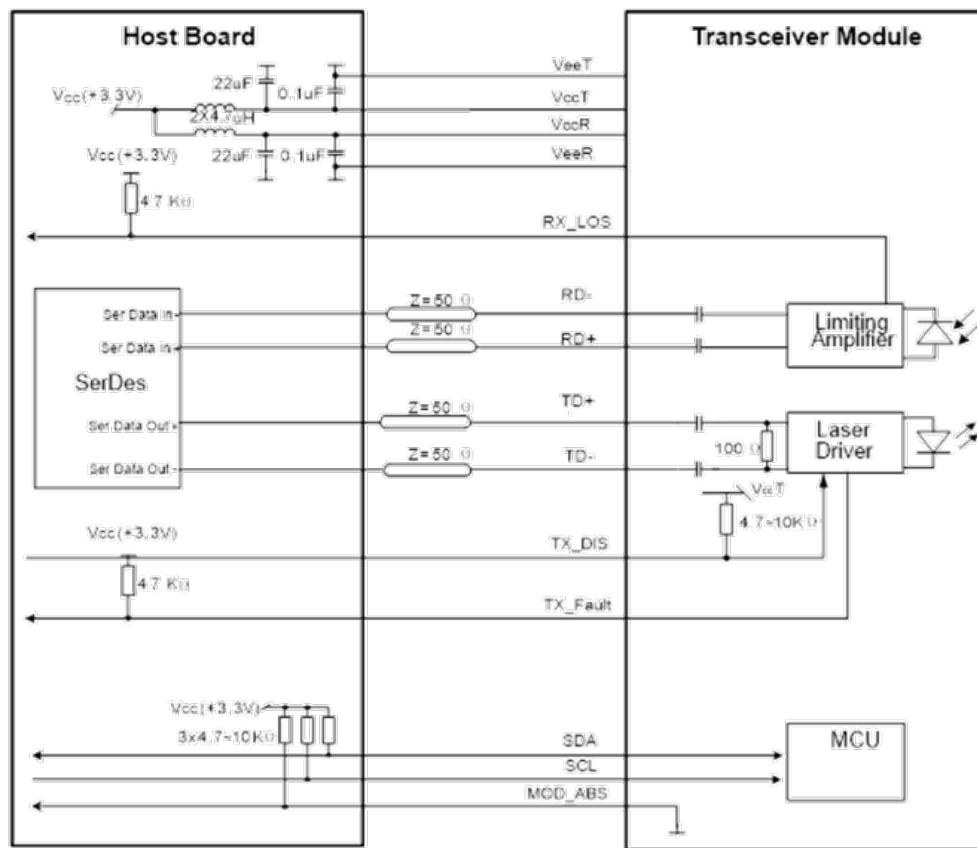
Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Tx_FAULT is an open collector/drain output that should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board if intended for use. Pull-up voltage should be between 2.0V to Vcc+0.3V. A “high” output indicates a transmitter fault caused by either the Tx bias current or the Tx output power exceeding the preset alarm thresholds. A “low” output indicates normal operation. In the “low” state, the output is pulled to <0.8V.
3. Laser output disabled on Tx_DIS >2.0V or open, enabled on Tx_DIS <0.8V.
4. Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. Internally pulled down per SFF-8431 Rev 4.1.
6. LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. “Logic 0” indicates normal operation. “Logic 1” indicates loss of signal.

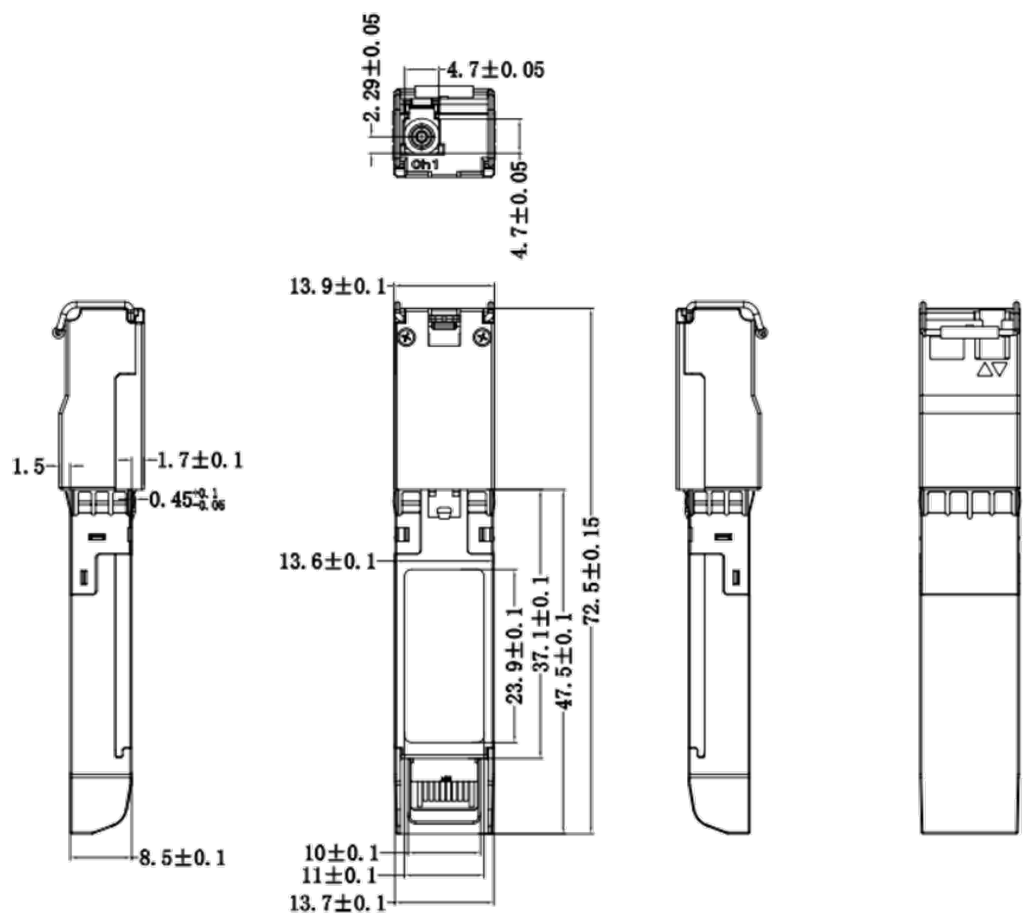
Pin-Out Details



Recommended Circuit Schematic



Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

