



SPD62080102D000

MSA Compliant 10GBase-DWDM SFP+ Transceiver C-Band 50GHz (SMF, 1527.99nm, 80km, LC, DOM, -40 to 85C)

Product Description

This MSA compliant SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1527.99nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. All of our transceivers are built to comply with Multi-Source Agreement (MSA) standards and are uniquely serialized and tested for data-traffic and application to ensure seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows 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:

- SFF-8432 and SFF-8472 Compliance
- Single-mode Fiber
- Duplex LC Connector
- Hot Pluggable
- Metal with Lower EMI
- Industrial Temperature -40 to 85 Celsius
- RoHS Compliant and Lead Free
- Excellent ESD Protection



Applications:

- 10x Gigabit Ethernet over DWDM
- Access and Enterprise
- 8x/10x Fibre Channel

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
Maximum Supply Voltage	Vcc	-0.5		3.6	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	-40		85	°C	
Operating Relative Humidity	RH	5		95	%	
Power Supply Current	Icc			2000	mW	
Bit Rate	BR			11.1	Gbps	1
Bit Error Rate	BER			10E ⁻¹²		2
Maximum Supported Link Length	Lmax			80	km	1

Notes:

- 10GBASE-ZR, 10GBASE-ZW, and 1200-SM-LL-L 10GFC.
- Tested with a 2³¹-1 PRBS.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Transmitter						
Input Differential Impedance	RIN	80	100	120	Ω	
Differential Data Input	VIN	180		700	mVp-p	
Transmit Disable Voltage	VDIS	2		Host_Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	
Transmit Fault Assert Voltage	VFA	2		Host_Vcc	V	
Transmit Fault De-Assert Voltage	VFDA	Vee		Vee+0.4	V	
Receiver						
Differential Data Output	VOD	mVp-p	350		850	
Output Rise Time	Tr	pS	25			
Output Fall Time	Tf		25			
LOS Fault	VLOSft		2		Host_Vcc	
LOS Normal	VLOSnr		Vee		Vee+0.4	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Side-Mode Suppression Ratio	SMSR	30			dB	
Optical Output Power	Pavg	0		4	dBm	
Extinction Ratio	ER	8.2			dB	
Average Launch Power of Off Transmitter	Poff			-30	dBm	
Relative Intensity Noise	RIN			-128	dB/Hz	
Receiver						
Center Wavelength	λ_C	1260		1620	nm	
Receiver Sensitivity	Rsense			-24	dBm	1
Receiver Sensitivity @80km Fiber	Rsense			-21	dBm	2
Receiver Overload		-7			dBm	
Optical Return Loss		27			dB	
LOS Assert	LOSA	-37			dBm	
LOS De-Assert	LOSD			-27	dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. Measured at 1528-1600nm, ER=9dBm, PRBS 2³¹-1, and BER better than 10E⁻¹².
2. Loopback using 80km fiber (SMF-28).

Pin Descriptions

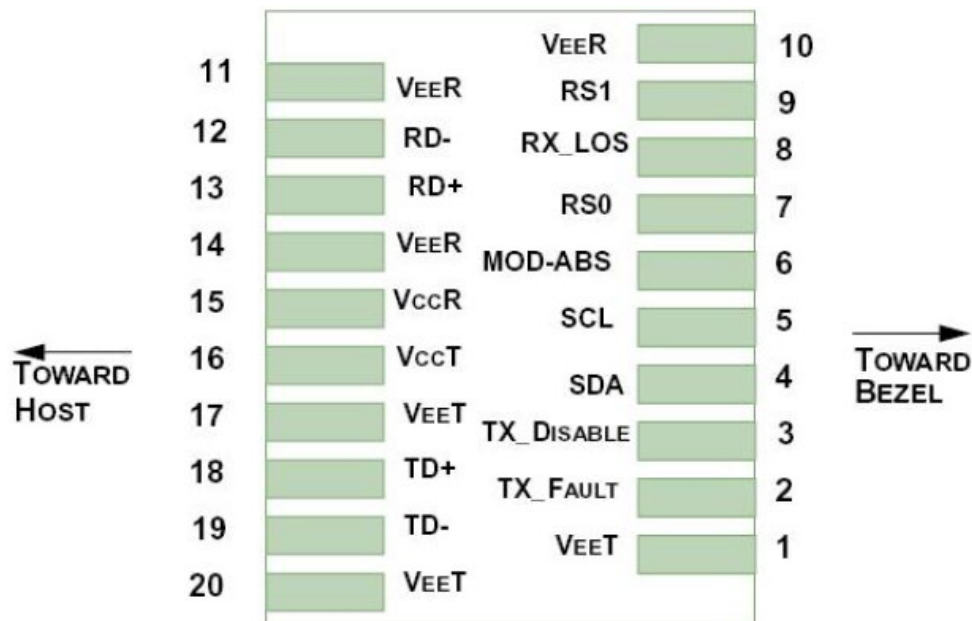
Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault Out.	2
3	Tx_Disable	Transmitter Disable In. LVTTTL.	3
4	SDA	Module Definition Identifiers.	4
5	SCL	Module Definition Identifiers.	4
6	MOD_ABS	Module Definition Identifiers.	4
7	RS0	Receiver Rate Select. LVTTTL. Transmitter Rate Select.	5
8	LOS	Loss of Signal.	6
9	RS1	Receiver Rate Select. LVTTTL. Transmitter Rate Select.	5
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Receiver Negative Data Out. CML.	7
13	RD+	Receiver Positive Data Out. CML.	8
14	VeeR	Receiver Ground.	1
15	VccR	Receiver Power Supply.	9
16	VccT	Transmitter Power Supply.	9
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Positive Data In. CML.	10
19	TD-	Transmitter Negative Data In. CML.	11
20	VeeT	Transmitter Ground.	1

Notes:

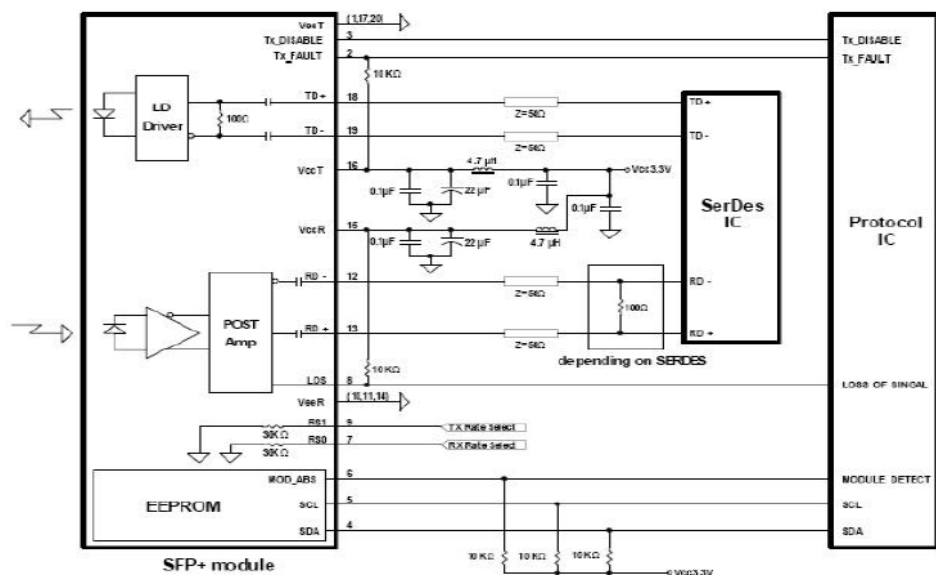
- These pins should be connected to the signal ground on the host board.
- Logic "1" Output = Laser fault (Laser off before Tx_Fault).
Logic "0" Output = Normal operation.
This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.
- Logic "1" Input (or No Connection) = Laser off.
Logic "0" Input = Laser on.
This pin is internally pulled up to the VccT with a 10kΩ resistor.
- Serial ID with SFF-8472 diagnostics module definition pins should be pulled up to the Host_Vcc with 10kΩ resistors.
- These pins have an internal 30kΩ pull-down to ground. A signal on either of these pins will not affect module performance.
- Sufficient optical signal for potential $BER < 1 \times 10^{-12}$ = Logic "0."
Insufficient optical signal for potential $BER < 1 \times 10^{-12}$ = Logic "1."
This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.

7. Light On = Logic "0" output receiver data output is internally AC coupled and series terminated with a 50Ω resistor.
8. Light On = Logic "1" output receiver data output is internally AC coupled and series terminated with a 50Ω resistor.
9. This pin should be connected to a filtered +3.3V power supply on the host board.
10. Logic "1" Input = Light on transmitter data inputs are internally AC coupled and terminated with a 100Ω resistor.
11. Logic "0" Input = Light on transmitter data inputs are internally AC coupled and terminated with a 100Ω resistor.

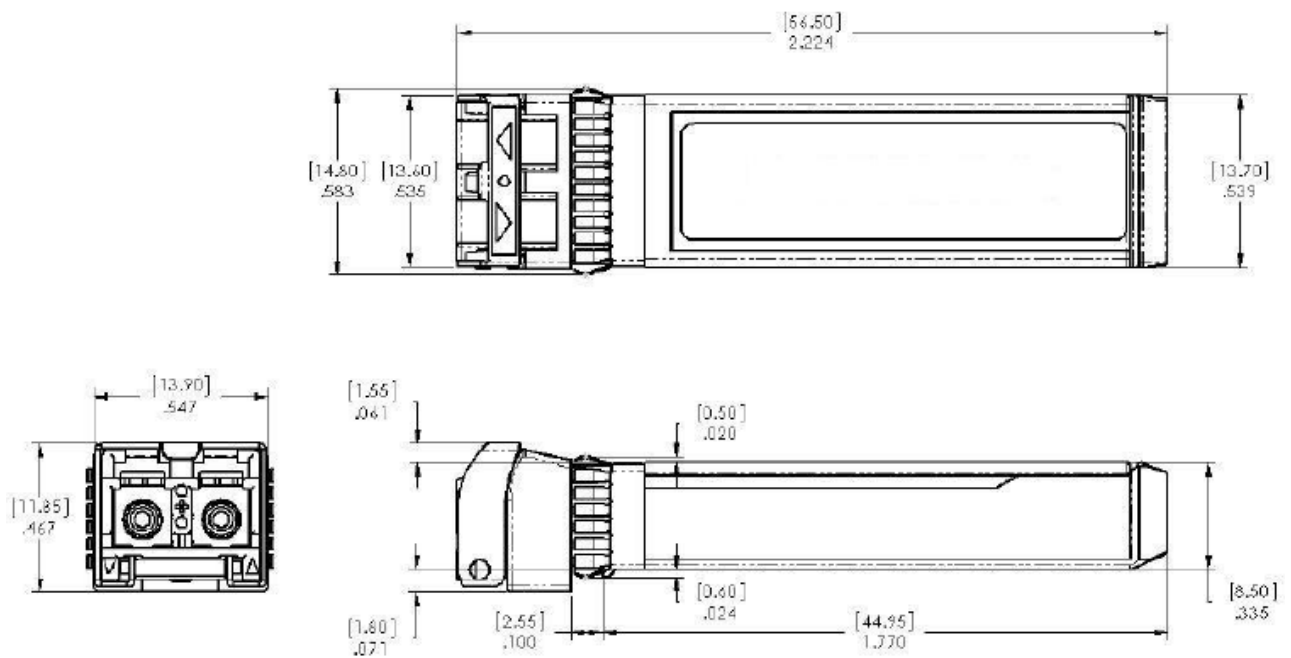
Pin Connectors



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.

