



S2DTU0152R1F000

MSA Compliant 10/25GBase-DWDM SFP28 Transceiver Dual-Rate 100GHz (SMF, Tunable, 80/15km, LC, DOM, -20 to 85C)

Product Description

This MSA compliant Dual-Rate SFP28 transceiver provides 10/25GBase-DWDM throughput up to 80/15km over single-mode fiber (SMF) using a tunable wavelength via an LC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. 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:

- Compliant with SFP28 MSA
- Duplex LC Connector
- CPRI/eCPRI: 24.33024/25.78125Gbps (with FEC); 9.8304/10.1376/10.3125Gbps
- 48 Channels
- 100GHz channel spacing
- 25G electrical interface (OIF CEI-28G-VSR)
- Metal with lower EMI and excellent ESD protection
- Industrial Temperature -20 to 85 Celsius, cold start at -40C
- RoHS Compliant and Lead Free



Applications:

- 25GBase
- Access, Metro 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
Maximum Supply Voltage	V _{cc}	0	3.3	3.6	V	
Storage Temperature	T _{stg}	-40		85	°C	
Operating Case Temperature	T _c	-20		85	°C	1
Relative Humidity	RH	0		85	%	2
Damage Threshold Per Lane	THd	0		dB		

Notes:

1. Operating case temperature cold start at -40°C.
2. Non-condensing.
3. Operation exceeding any individual absolute maximum rating might cause permanent damage to the module.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR	24.33024		25.78125	Gbps	
	DR	9.8304		10.3125	Gbps	1
Data Rate Accuracy		-100		100	ppm	
Link Distance with G.652				15	km	
Supply Voltage	V _{cc}	3.135	3.3	3.465	V	
Supply Current	I _{cc}			0.76	A	
Power Dissipation	P _{DISS}			2.5	W	
Transmitter						
Differential Voltage pk-pk	V _{IN,pp}	180		900	mV	
Tx Differential Input Impedance	Z _{IN}		100		Ω	
Transmitter Disable Voltage	V _D	2.0		V _{cc} +0.3	V	
Transmitter Enable Voltage	V _{EN}	0		0.8	V	
Receiver						
Differential Voltage pk-pk	V _{OUT,pp}	450	600	900	mV	
Rx Differential Output Impedance	Z _{OUT}		100		Ω	
LOS Assert Voltage	V _{LOSA}	2.4		V _{cc}	V	
LOS De-Assert Voltage	V _{LOSD}	V _{ee}		V _{ee} +0.4	V	
Eye Height	EH ₁₅	228			mV	
Eye Width	EW ₁₅	0.57			UI	
Vertical Eye Closure	VEC			5.5	dB	

Notes:

1. CDR bypass.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Average Power	Pavg	0		4	dBm	
Data Rate	DR	24.33024		25.78125	Gbps	
	DR	9.8304		10.3125	Gbps	1
Data Rate Accuracy		-100		100	ppm	
Wavelength Range	λC	191.4		196.1	THz	
Wavelength Accuracy		-12.5		12.5	GHz	
Channel Spacing			100		GHz	
Extinction Ratio	ER	3.5			dB	
Side-Mode Suppression Ratio	SMSR	30			dB	
RIN _{20OMA}				-130	dB/Hz	
Optical Return Loss Tolerance	ORLT			20	dB	
Transmitter Reflectance	TR			-26	dB	
Transmitter Eye Mask Definition: (X1, X2, X3, Y1, Y2, Y3)		(0.31, 0.4, 0.45, 0.34, 0.38, 0.4)				2
Receiver						
Data Rate	DR	24.33024		25.78125	Gbps	
	DR	9.8304		10.3125	Gbps	
Wavelength Range	λC	191.4		196.1	THz	
Saturation Power		-2			dBm	
Receiver Sensitivity				-19.5 (5e ⁻⁵ FEC)	dBm	
Receiver Reflectance	RR			-26	dB	
LOS Assert	LOSA	-35			dBm	
LOS De-Assert	LOSD			-24	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. CDR bypass.
2. Hit ratio 5x10⁻⁵ hits per sample.

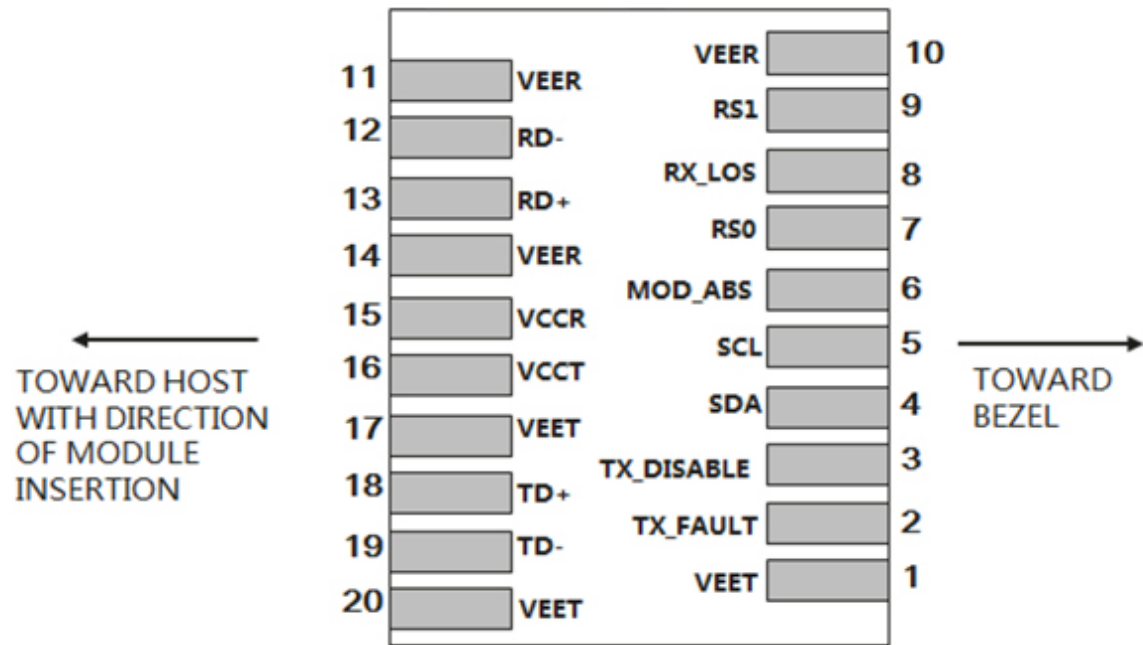
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault Indication.	
3	Tx_Disable	Disables the transmitter or laser output.	2
4	SDA	Data line for an I ² C series interface.	2
5	SCL	Clock line for an I ² C series interface.	2
6	MOD_ABS	Indicates the module online state. This pin is connected to the VeeT or VeeR pin.	
7	RS0	Selects a rate for the module. This pin is connected to the 33kΩ resistor.	
8	Rx_LOS	Indicates a loss of received signals.	2
9	RS1	Selects a rate for the module. This pin is connected to the 33kΩ resistor.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Output.	
13	RD+	Received Data Output.	
14	VeeR	Receiver Ground.	1
15	VccR	+3.3V Receiver Power.	1
16	VccT	+3.3V Transmitter Power.	1
17	VeeT	Transmitter Ground.	1
18	TD+	Transmit Data Input.	
19	TD-	Inverse Transmit Data Input.	
20	VeeT	Transmitter Ground.	1

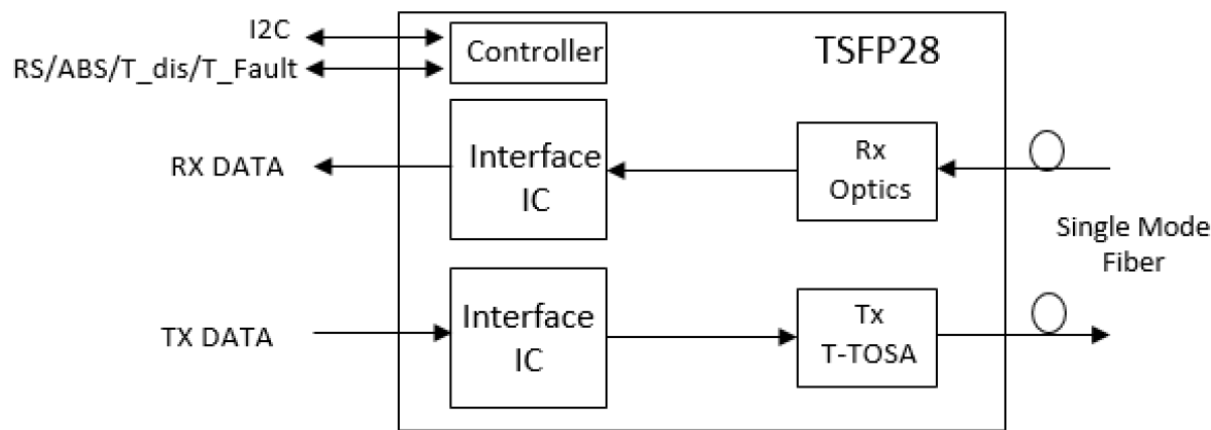
Notes:

1. The ground of the module (operating module ground) and that of the module shell are separate from each other.
2. 4.7kΩ to 10kΩ resistor is used on the module to pull the output up to 3.15V-3.45V.

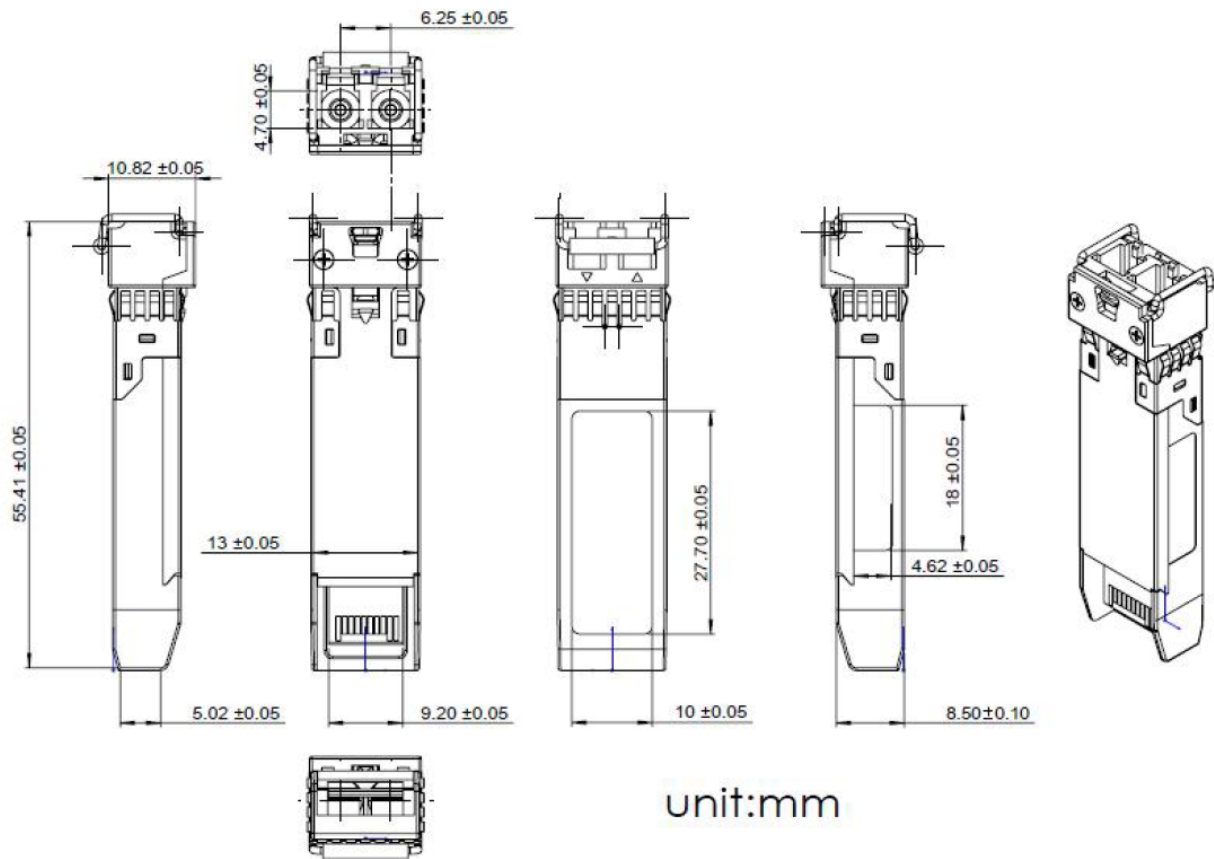
Electrical Pin-Out Details



Transceiver Block Diagram



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.

