

10.31Gbps/25.78Gbps SFP+ 100m Transceiver

Product Features:

- Supports 10G/25GBASE-SR(10Gb/s/25Gb/s)
- Maximum link length of 70m on OM3 MMF and 100m on OM4 MMF
- 850nm VCSEL laser and PIN photo-detector
- High speed I/O electrical interface (25GAUI)
- I2C interface with integrated Digital Diagnostic monitoring
- SFP28 MSA package with duplex LC connector
- Maximum power consumption 1.0W
- Single +3.3V power supply
- Operating case temperature: Refer to Order info.
- Compliant to IEEE 802.3cc Draft3.0, SFF-8402 , SFF-8432, SFF-8472
- Complies with EU Directive 2011/65/EU (RoHS 6/6)



Applications:

- 10G/25GBase-SR
- CPRI

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit
Storage Temperature	TS	-40	-	+85	°C
Supply Voltage	VCC	-0.5	-	+4.0	V
Operating Relative Humidity	RH	-	-	+85	

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TC	-5	-	+70	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Power Supply Current	ICC	-	-	0.28	A
Maximum Power Dissipation	PD	-	-	1.0	W
Lane Bit Rate		10.31		25.78	Gb/s
Transmission Distance(OM3)	TD			70	m
Transmission Distance(OM4)	TD			100	m

3. Optical Characteristics

Transmitter						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	λ	840	850	860	nm	
Average Launch Power		-5	-	3	dBm	1
Optical Modulation Amplitude	OMA	-5	-	3	dBm	1
Average Output Power (Laser Turn off)	P _{off}	-	-	-30	dBm	
Extinction Ratio	ER	4	-	-	dB	
Transmitter and dispersion penalty (TDP)	TDP	-	-	4.3	dB	
Optical Return Loss Tolerance	ORLT	-	-	12	dB	
Optical Eye Mask	Compliant with IEEE 802.3cc Draft				3.0	
Receiver						
Center Wavelength	λ_0	840	850	860	nm	
Average Rx Power		-10.5	-	2.4	dBm	2

25G Receiver sensitivity (OMA)	Rx Sense	-8.5	-	-	dBm	2
10G Receiver sensitivity (OMA)	Rx Sense	-10	-	-	dBm	2
Receiver Overload	PIN-OL	3.4	-	-	dBm	
Reflectance	Ref	-	-	-12	dB	
LOS Assert per lane	LOSA	-30	-	-	dBm	
LOS De-assert	LOSD	-	-	-17	dBm	
LOS Hysteresis	LOSH	0.5	-	4	dB	

Notes:

1. Class 1 Laser Safety limit per FDA/CDRH, and EN (IEC) 60825 laser safety standards.
2. Informative Only

4. Electrical Characteristics

Transmitter (Module Input)						
Parameter		Symbol	Min.	Typical	Max.	Unit Notes
Differential Data Input Amplitude		VIN,P-P	90	-	800	mVpp
Differential Termination Mismatch			-	-	5	%
Tx_Disable	Normal Operation	VIL	-0.3	-	0.8	V
	Laser Disable	VIH	2.0	-	VCC+0.3	V
Receiver (Module Output)						
Differential Data Output Amplitude		VOUT,P-P	185	-	425	mVpp
Differential Termination Mismatch (1MHZ)			-	-	5	%
Output Rise/Fall Time, 20%~80%		TR	12	-	-	ps
Rx_LOS	Normal Operation	VOL	-	-	0.2	V
	Lose Signal	VOH	VCC-0.2	-	-	V

5. Pin Descriptions

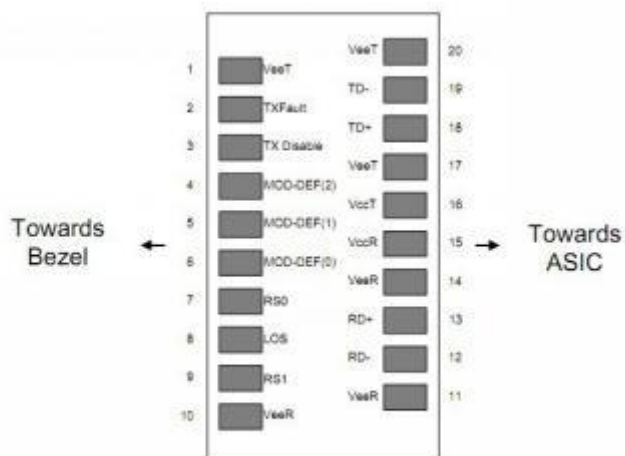


Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	RS0	Rate Select0, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	RS1	Rate Select1, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd	
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	

16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

6. EEPROM & DDM THRESHOLD

6.1 EEPROM

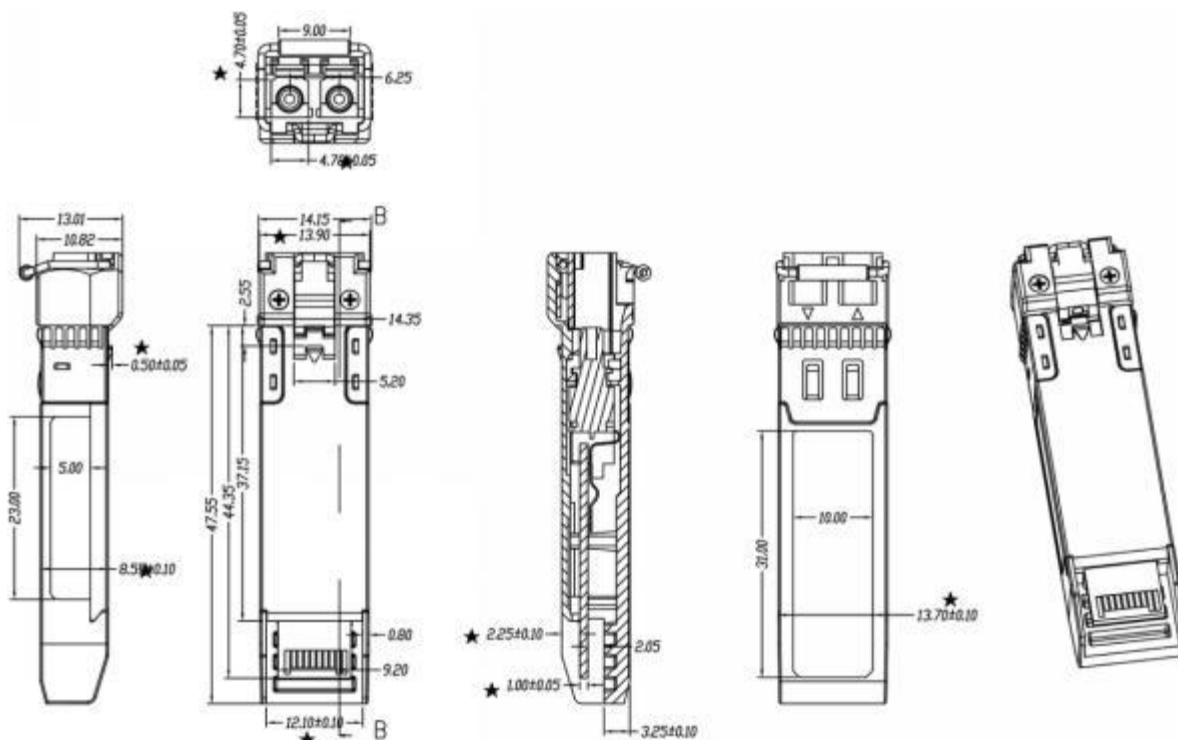
2 wire address 1010000X (A0h)

0~95
Serial ID Defined by SFP MSA (96 bytes)
96~127
Vendor Specific (32 bytes)
128~255
Reserved (128 bytes)

6.2 DDM THRESHOLD

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5℃	0℃	70℃	75℃
Voltage	3V	3.1V	3.5V	4V
Tx Bias	2mA	3mA	10mA	11mA
Tx Power	-9dBm	-6dBm	3dBm	3.5dBm
Rx Power	-13dBm	-10dBm	3dBm	3.5dBm

7. Mechanical Specifications



Ordering Information

Part No.	Data Rate	Wave	Fiber Type	Dist.	Temp.	Optical Interface
SFP-25GM-85-SR	10.31Gbps/ 25.78Gbps	850nm	MMF	100m	0~70°C	LC

NOTICE:

Connlight reserves the right to make changes to this product in this specification without notice, in order to improve product performance.