

25G SFP28 CWDM 10km C47~C57 Optical Transceiver

Product Features:

- Operating data rate up to 25.78Gbps
- Up to 10km (PIN) transmission distance directly
- CWDM EML Laser and PIN receiver
- LC duplex connector
- Hot pluggable 20pin connector
- Low power consumption: Commercial <2W
- Single +3.3V±5% power supply
- Compliant with SFF-8472
- Fully RoHS Compliant
- Case operating temperature: Commercial: 0°C to +70°C



Applications:

- 25GE Ethernet
- CPRI Option 10

Description:

The Transceiver is intended for 10km(PIN)reach service from 24.33Gb/s to 25.78Gb/s CWDM C47-C57 single mode high-speed communications equipment where low-cost, extraordinary performance and reliability are essential. It consumes low power, operates base on 3.3V DC power supply and is offered in the industrial temperature range. They are compliant with SFP28 MSA, SFF-8431 and SFF-8432.

The low jitter and low bit error rate optical assembly features a C47-C57 EML laser transmitter and PIN receiver. It utilizes internal clock and data recovery (CDR) units on transmitter and the receiver chains for low jitter compliance. The differential AC coupled Tx and Rx data interfaces are CML compatible. The device is Class I laser safety compliant.

Specification:

● Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T _s	°C	-40	85
Relative Humidity	RH	%	0	95
Maximum Supply Voltage	V _{cc}	V	-0.5	4.0

● Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Power Supply Voltage	V _{cc}	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s		25.78	
Bit Error Ratio	BER				5*10 ⁻⁵

● Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	V _{CC}	V	3.14	3.3	3.46	
Power consumption	P	W			2W	C-temp
Transmitter						
Input Differential Impedance	R _{IN}	Ω		100		
Single-ended Data Input Swing	V _{IN}	mVp-p	90		450	
Transmit Disable Voltage	V _{DIS}	V	2		V _{CCHOST}	
Transmit Enable Voltage	V _{EN}	V	V _{EE}		V _{EE} +0.8	
Transmit Fault Assert Voltage	V _{FA}	V	2		V _{CCHOST}	
Transmit Fault De-Assert Voltage	V _{FDA}	V	V _{EE}		V _{EE} +0.4	
Receiver						
Single-ended Data Output Swing	V _{OD}	mVp-p	200		450	
LOS Fault	V _{LOSFT}	V	2		V _{CCHOST}	
LOS Normal	V _{LOSNR}	V	V _{EE}		V _{EE} +0.4	

● Optical Characteristics (T_c=0 to 70 °C and V_{cc}= 3.14 to 3.46V)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Nominal Wavelength	λ _C	nm	1470,1490,1510,1530,1550,1570			
Wavelength Drift	Δλ	nm	-6.5		6.5	
Average Output Power	P _{av}	dBm	-2		5	

Spectral Width (-20dB)	σ	nm			1	
Extinction Ratio	ER	dB	6			
Side Mode Suppression Ratio	SMSR	dB	30			
Transmitter and Dispersion Penalty	TDP	dB			4	
Average Launch Power of OFF Transmitter	POFF	dBm			-30	
Relative Intensity Noise	RIN	dB/Hz			-128	
Receiver (PIN/TIA)						
Center Wavelength	λ_C	nm	1260		1620	
Receiver Sensitivity(OMA)	RSENSE	dBm			-14.5	1
Receiver Overload (OMA)	Pmax	dBm	2			
Optical Return Loss		dB			-26	
LOS Assert	LOSA	dBm	-30			
LOS De-Assert LOS	LOSD	dBm			-17	
LOS Hysteresis		dB	0.5			

Note1: Measured at 25.78125Gb/s, ER>=6dBm, PRBS 2³¹-1 and BER better than or equal to 5E-5;

● PIN Assignment

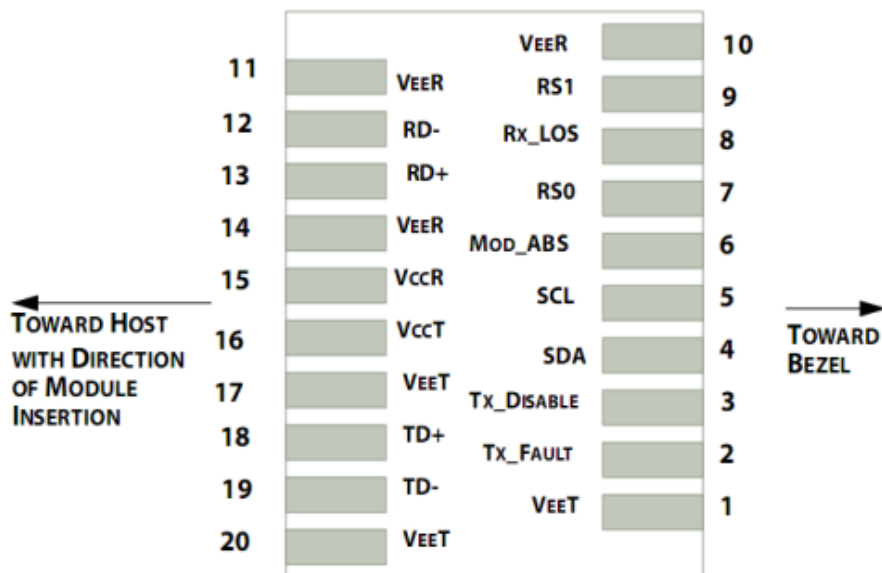


Figure 1.Pin function definitions

Table 1: Transceiver pin descriptions

Pin Number	Symbol	Name	Description
1,17,20	VeeT	Transmitter Signal Ground	Connected to signal ground on the host board.
2	TX Fault	Transmitter Fault Out (OC)	Module transmitter fault output.
3	TX Disable	Transmitter Disable In (LVTTL)	Module transmitter disable control.
4	SDA	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
5	SCL		
6	MOD-ABS		
7	RS0	Receiver Rate Select (LVTTL)	Rate select 0(Rx):Low=CDR Bypass; High=CDR Select Rate select 1(Tx):Low=CDR Bypass; High=CDR Select
9	RS1	Transmitter Rate Select (LVTTL)	
8	LOS	Loss of Signal Out (OC)	Receiver loss of signal.
10,11,14	VeeR	Receiver Signal Ground	Connected to signal ground on the host board.
12	RD-	Receiver Negative DATA Out (CML)	Receiver inverted data output, internally AC coupled and terminated
13	RD+	Receiver Positive DATA Out (CML)	Receiver non-inverted data output, internally AC coupled and terminated.
15	VccR	Receiver Power Supply	Receiver Power 3.3V Supply.
16	VccT	Transmitter Power Supply	Transmitter Power 3.3V Supply.
18	TD+	Transmitter Positive DATA In (CML)	Transmitter non-inverted data input, internally AC coupled and terminated.
19	TD-	Transmitter Negative DATA In (CML)	Transmitter inverted data Input, internally AC coupled and terminated.

● Recommended Interface Circuit

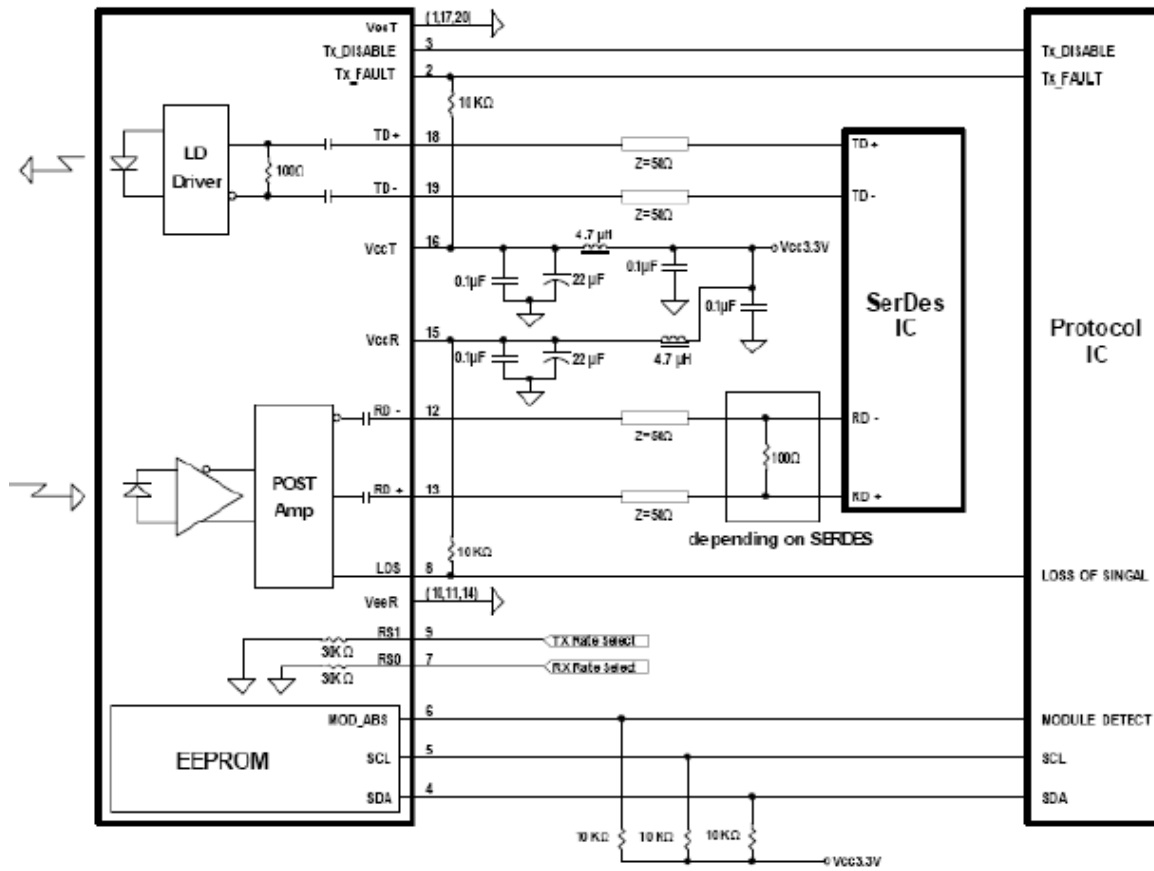


Figure 2. Typical application circuit

● Mechanical Dimensions

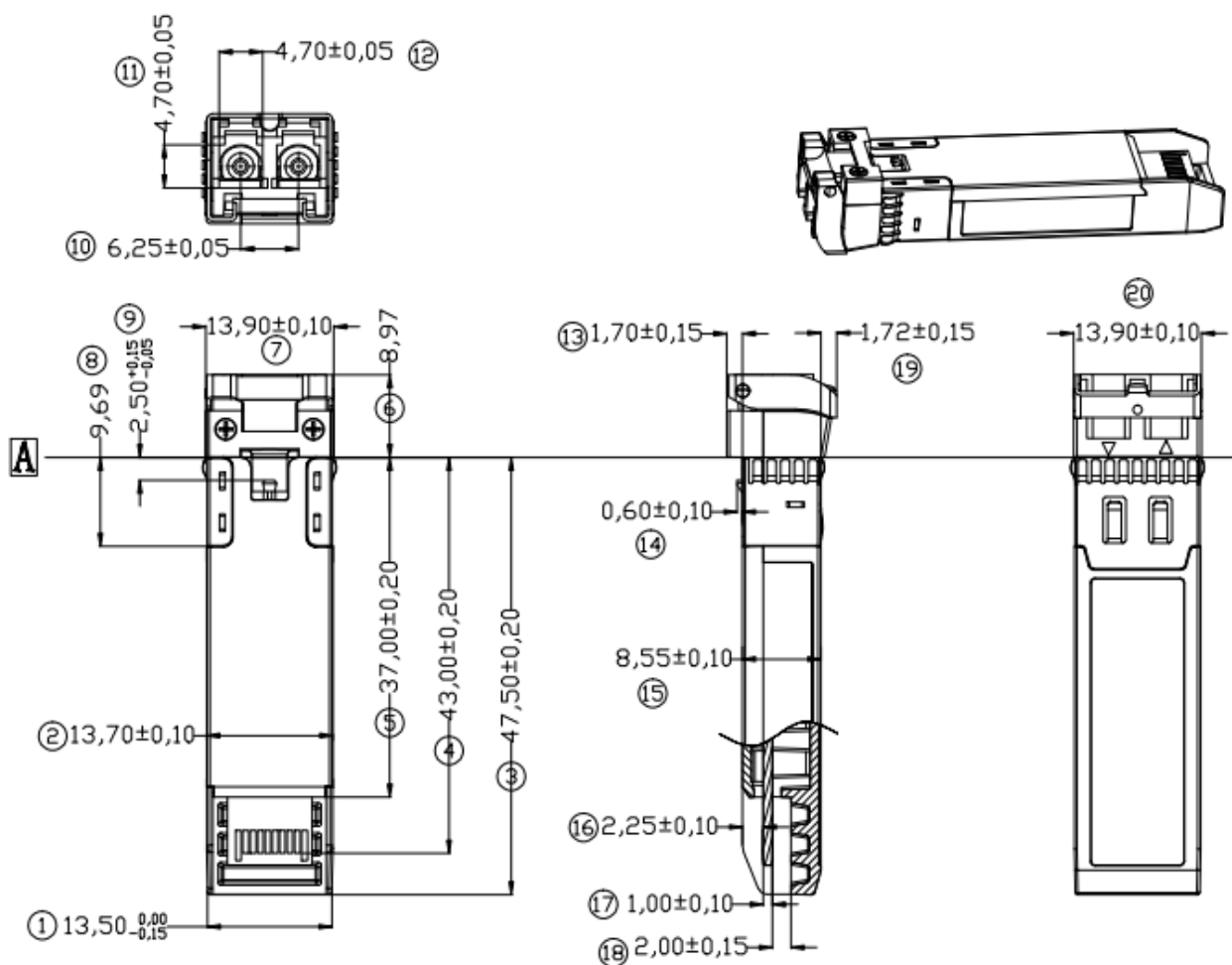


Figure 3. Module Mechanical Dimensions

Ordering Information

Part No.	Data Rate	Wave	Fiber Type	Dist.	Temp.	Optical Interface
CWDM-SFP25G-XX-10	25.78Gbps	6ch CWDM 1471nm~1571nm	MMF	10km	0~70℃	LC

NOTICE:

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