

25G SFP28 CWDM 10km C27~C37 Optical Transceiver

Product Features:

- UP to 25.78Gb/s bit rates
- Hot-Pluggable SFP28 footprint
- Duplex LC connector
- CWDM DFB laser transmitter
- Up to 10km on 9/125m SMF
- 2-wire interface for management specifications compliant with SFF 8472 digital diagnostic monitoring interface for optical transceivers
- Power Supply +3.3V
- Operating case temperature Range: Commercial: 0~ 70°C
- RoHS compliant



Applications:

- 25GE Ethernet
- eCPRI&CPRI

Description:

The SFP28 transceivers are designed for use in Ethernet links up to 25.78 Gb/s data rate and up to 10 km link length. They are compliant SFF-8472, and compatible with SFF-8432 and applicable portions of SFF-8431. The product is RoHS compliant and lead-free per Directive 2011/96/EU.

Specification:

● Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Storage Temperature	T_s	-40		+85	°C	
Case Operating Temperature	T_c	0		+70	°C	
Maximum Supply Voltage	V_{cc}	0		3.6	V	
Relative Humidity(Non-condensing)	RH	0		85	%	

● Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Supply Voltage	V_{cc}	3.135		3.465	V	
Supply Current	I_{cc}			360	mA	
Power Consumption	P			1.2	W	
Data Rate	R	-	25.8		Gb/s	
Fiber Length	L			10	KM	
Transmitter Section:						
Input differential impedance	R_{in}		100		Ω	1
Differential input voltage swing	$V_{in,pp}$	180		450	mV	2
Transmit Disable Voltage	V_D	2		V_{cc}	V	3
Transmit Enable Voltage	V_{EN}	Vee		Vee+0.8	V	
Receiver Section:						
Single Ended Output Voltage Tolerance	V	-0.3		4	V	
Rx Output Diff Voltage	V_o	180		450	mV	
LOS Fault	$V_{LOS\ fault}$	2		V_{cc}	V	4
LOS Normal	$V_{LOS\ norm}$	Vee		Vee+0.8	V	4

Note:

1. Connected directly to TX data input pins. AC coupling from pins into laser driver IC.
2. Per SFF-8431 Rev 3.0
3. Into 100 ohms differential termination.
4. LOS is an open collector output. Should be pulled up with 4.7k – 10k Ω on the host board. Normal operation is logic 0; loss of signal is logic 1. Maximum pull-up voltage is 5.5V.

● Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter Section:						
Center Wavelength	λ_t	$\lambda - 6.5$	λ	$\lambda + 6.5$	nm	
spectral width(-20dB)	$\Delta\lambda$			1	nm	
Average Optical Power	P_{avg}	0		7	dBm	27,29,31
Average Optical Power	P_{avg}	1		7	dBm	33,35,37
Laser Off Power	P_{off}			-30	dBm	
Side Mode Suppression Ratio		30				
Extinction Ratio	ER	3.5			dB	
Optical Return Loss Tolerance				-12	dB	
Receiver Section:						
Center Wavelength	λ_r	1260		1380	nm	
Receiver Sensitivity(Ave)	S_{en}			-13.0	dBm	1
Receiver Sensitivity(OMA)	S_{en}			-14.1	dBm	1
Los Assert	LOS_A	-30			dBm	
Los Dessert	LOS_D			-15	dBm	
Los Hysteresis	LOS_H	0.5			dB	
Overload		2			dBm	

Note:

1. Measured with a PRBS 2³¹-1 test pattern, @25.78Gb/s, BER<5E-5.

● Timing Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
TX_Disable Assert Time	t_{off}			100	us
TX_Disable Negate Time	t_{on}			2	ms
Time to Initialize 2-wire interface	$t_{2w_start_up}$			300	ms
Time to Initialize	t_{start_up}			300	ms
Time to Initialize cooled module and time to power up a cooled module to Power level II	$t_{start_up_cooled}$			90	s
Time to Power Up to Level II	t_{power_level2}			300	ms
Time to Power Down from Level II	t_{power_down}			300	ms
Tx_Fault assert	Tx_Fault_on			1	ms
Tx_Fault assert for cooled module	$Tx_Fault_on_cooled$			50	ms
TX_FAULT Reset	t_{reset}	10			us

Rx_LOS assert delay	t_los_on			100	us
Rx_LOS negate delay	t_los_off			100	us

● Pin Function Definition

PIN #	Name	Function	Notes
1	VeeT	Module transmitter ground	1
2	Fault	Module transmitter Fault	2
3	Disable	Transmitter Disable; Turns off transmitter laser output	3
4	SDL	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	2
7	RS0	Rate select0: module inputs and are pulled low to VeeT with > 30 kΩ resistors in the module.	
8	LOS	Receiver Loss of Signal Indication	
9	RS1	Rate select1: module inputs and are pulled low to VeeT with > 30 kΩ resistors in the module.	
10	VeeR	Module receiver ground	1
11	VeeR	Module receiver ground	1
12	RD-	Receiver inverted data out put	
13	RD+	Receiver non-inverted data out put	
14	VeeR	Module receiver ground	1
15	VccR	Module receiver 3.3V supply	
16	VccT	Module transmitter 3.3V supply	
17	VeeT	Module transmitter ground	1
18	TD+	Transmitter non-inverted data output	
19	TD-	Transmitter inverted data out put	
20	VeeT	Module transmitter ground	1

Note:

1. The module ground pins shall be isolated from the module case.
2. This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.
3. This pin shall be pulled up with 4.7K-10Kohms to VccT in the module.
4. This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.

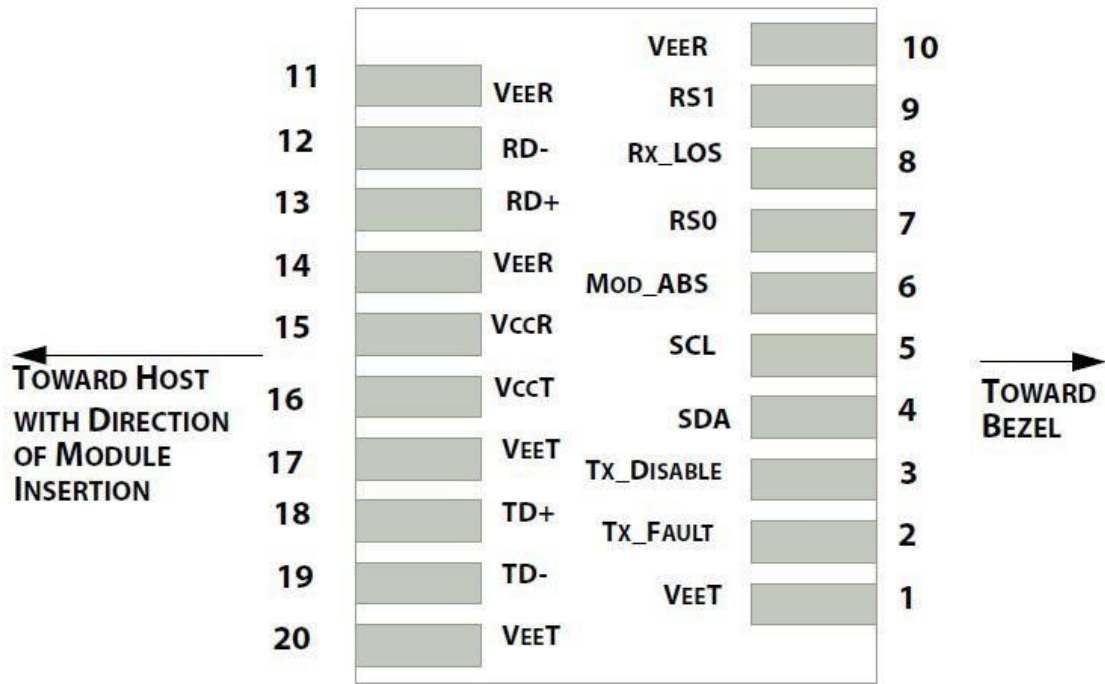
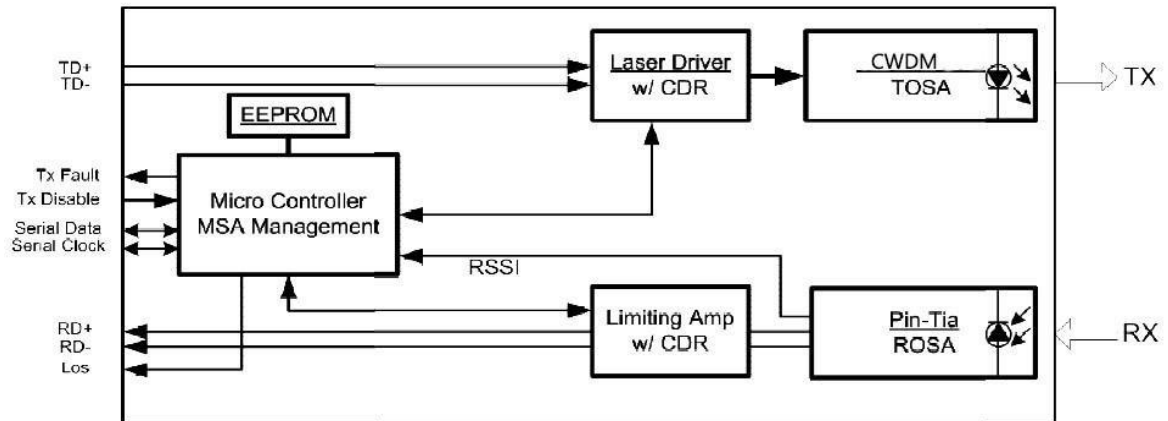
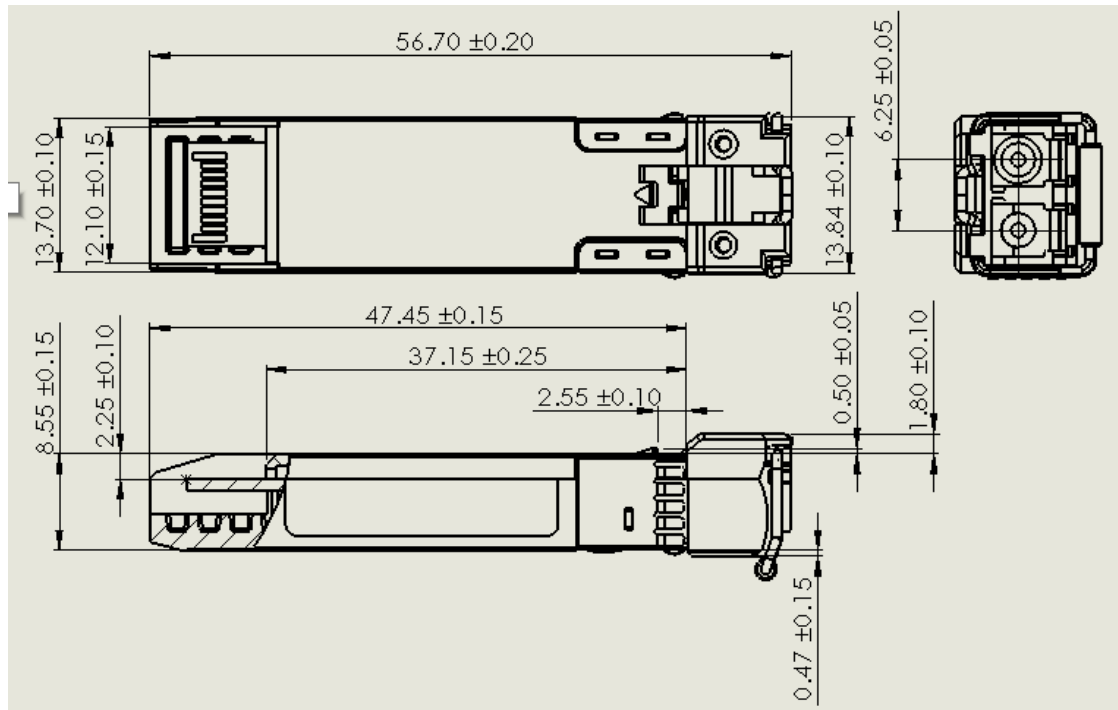


Diagram of Host Board Connector Block Pin Numbers and Names

● Transceiver Block Diagram



● Mechanical Dimensions



Ordering Information

Part No.	Data Rate	Wave	Fiber Type	Dist.	Temp.	Optical Interface
CWDM-SFP25G-XX-10	25.78Gbps	6ch CWDM 1271nm~1371nm	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.