

10Gb/s SFP+ CWDM 40km Transceiver

LA-OT-10G-CW23-40

Features

- SFP+ package with LC connector
- DML CWDM DFB Laser and PIN-TIA photodetector
- Up to 40Km transmission on SMF
- Up to 11.3Gbps Data Links
- +3.3V single power supply
- Power dissipation<1.5W
- 2-wire interface with integrated Digital Diagnostic monitoring
- Low EMI and excellent ESD protection
- laser safety standard IEC-60825 compliant
- Compatible with RoHS
- Compliant with SFF-8472 SFP+ MSA
- Compliant to SFP+ SFF-8431 and SFF-8432

Application

- Ethernet
- Telecom
- Fiber Channel

Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	-40	+85	°C
Supply Voltage	Vcc	-0.3	+3.5	V
Operating Relative Humidity	RH	5	95	%



Operation Environment

Parameter	Symbol	Min	Typical	Max	Units
Supply Voltage	Vcc	3.15	3.3	3.45	V
Operating Case Temperature	Tc	0		+70	°C
Power Dissipation				1.5	W
Data Rate			10.3125		Gbps

Optical Characteristics

Parameter	Symbol	Min.	Тур.	Max.	Units		
Transmitter Section							
Center Wavelength	λο	1270		1370	nm		
Spectral Width(-20dB)	Δλ			1	nm		
Average Output Power	Ро	0		+5	dBm		
Extinction Ratio	Er	3.5			dB		
Side-Mode Suppression Ratio	SMSR	30			dB		
Total jitter	Tj	l	IEEE 802.3ae				
	Receive	r Section					
Center Wavelength	λο	1270		1610	nm		
Receiver Sensitivity	Rsen			-15	dBm		
Receiver Overload	Rov	0			dBm		
Return Loss		12			dB		
LOS Assert	LOS _A	-28			dBm		
LOS Dessert	LOS _D			-16	dBm		
LOS Hysteresis		0.5		4			



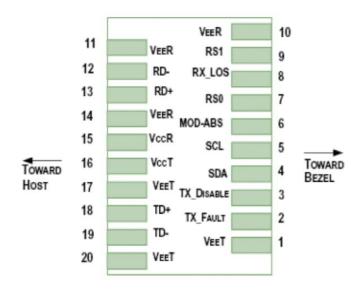
Electrical Characteristics

Parameter		Symbol	Min.	Тур.	Max.	Unit
	Trans	mitter Section				
Input Differential Impendence		Zin	90	100	110	Ohm
Data Input Swing Differential		Vin	180		700	mV
	Disable		2.0		Vcc	V
TX Disable	Enable		-0.3		0.8	V
TV Fault	Assert		2.4		Vcc	V
TX Fault	Deassert		-0.3		0.8	V
	Re	ceiver Section				
Output differential impendence		Zout	80	100	120	Ohm
Data Input Swing Differential		Vout	300		850	mV
Dv. LOS	Assert		2.0		Vcc	V
Rx_LOS	Deassert		-0.3		0.4	V

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	0~70	±5	ōС	Internal
Voltage	3.15 ~ 3.45	±0.1	V	Internal
Bias Current	10 ~ 80	±2	mA	Internal
Tx Power	-2 ~ +5	±2	dBm	Internal
Rx Power	-16 ~ -3	±3	dBm	Internal

Pin Description





Pins	Name	Description	NOTE
1	VeeT	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF2	Module Definition 2	3
5	MOD DEF1	Module Definition 1	3
6	MOD DEFO	Module Definition 0	3
7	RS0	Not Connected	
8	LOS	Loss of Signal	4
9	RS1	Not Connected	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inv. Received Data Output	5
13	RD+	IReceived Data Output	5
14	VeeR	Receiver Ground	
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VeeT	Transmitter Ground	
18	TD+	Transmit Data Input	6
19	TD-	Inv. Transmit Data Input	6
20	VeeT	Transmitter Ground	

Notes:

- 1. TX Fault is an open collector output, which should be pulled up with a $4.7k^{2}10k\Omega$ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.
- 2. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a $4.7k^{\sim}10k\Omega$ resistor. Its states are:

Low (0~0.8V): Transmitter on

(>0.8V, <2.0V): Undefined

High (2.0~3.3V): Transmitter Disabled

Open: Transmitter Disabled

3. MOD-DEF 0,1,2 is the module definition pins. They should be pulled up with a $4.7k^{\sim}10k\Omega$ resistor on the host board. The pull-up voltage shall be VccT or VccR.

MOD-DEF 0 is grounded by the module to indicate that the module is present

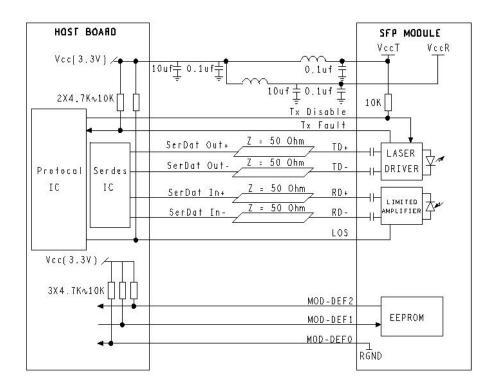
MOD-DEF 1 is the clock line of two wire serial interface for serial ID

MOD-DEF 2 is the data line of two wire serial interface for serial ID

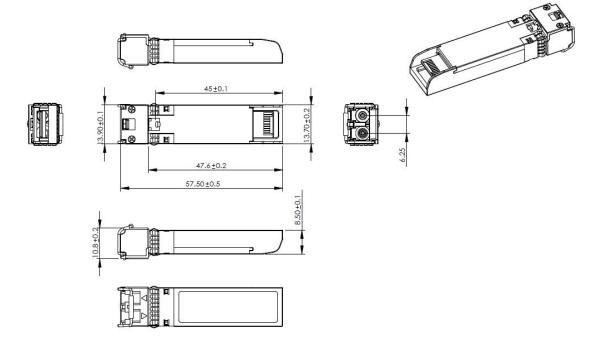
- 4. LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.
- 5. These are the differential receiver output. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.
- 6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.



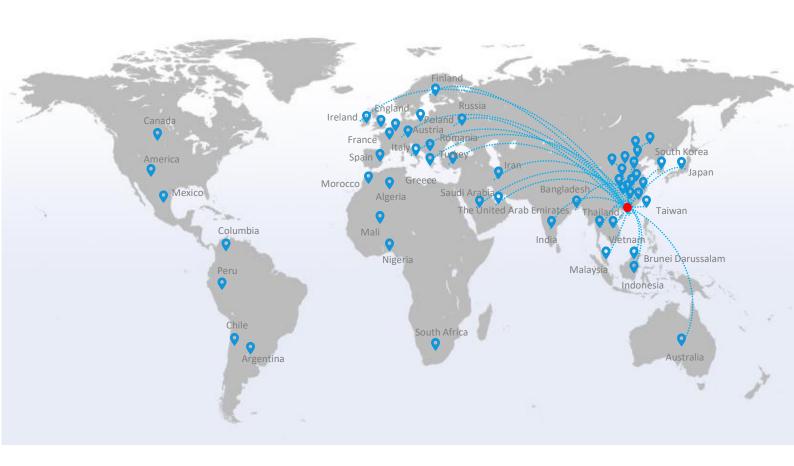
Recommended Application Circuit



Outline Drawing (mm)







https://www.lanaotek.com



Specifications & design are subject to change without prior notice.

For more details, please email to info@lanaotek.com. Copyright©2024 lanaotek.com All Rights Reserved