

LC-TOSA7WFDxxGEO-x

Technical Specification of 25G 1270~1610nm MQW-DFB Laser Diode Module
(Transmitter Optical Sub-assembly)

Features

- ◆ Coaxial Package
- ◆ MQW-DFB laser Diode
- ◆ Very Low Threshold Current (≤ 15 mA at 25°C)
- ◆ Operating Case temperature: -40°C to +85°C
- ◆ RoHS Compliant Products Available

Applications

- ◆ SFP28
- ◆ High speed Data Communication

Ordering information (Standard version ^{*Note1})

Part No.	Pin Type	Power	Wavelength	Isolator
LC-TOSA7WFD083GEO-1	LD-Pin-4	08	1310	Single Stage
LC-TOSA7WFD17xGEO-1	LD-Pin-4	17	CWDM	Single Stage

*Note1: For more ordering information, please refer the nomenclature and contact EOPTOLINK sales.

Absolute maximum ratings ^{*Note2}

Parameter	Symbol	Ratings	Unit
Storage temperature	T _{STG}	-40~+85	°C
Operating case temperature	T _{OP}	-40~+85	°C
Forward current (LD)	I _{FLD}	100	mA
Reverse voltage (LD)	V _{RLD}	2	V
Reverse voltage (MPD)	V _{RMPD}	20	V
Reverse current (MPD)	I _{RMPD}	2	mA
Soldering temperature (<10s)	S _{TEMP}	260	°C

*Note2: Exceeding any one of these values may destroy the device immediately.

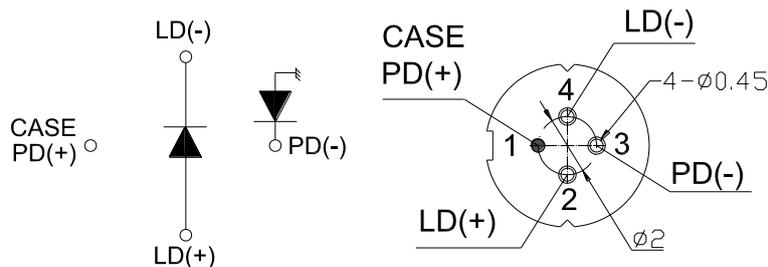
Electrical and optical characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold current	I _{th}	—	8	15	mA	CW
Fiber Coupling Power	P _f	0.5	—	2.5	mW	CW, I _f =I _{th} +30mA
Operating voltage	V _f	—	2	—	V	CW,
Slope Efficiency	Se	0.025	—	0.125	mW/mA	CW, Average(I _{th} to I _{th} +30mA)
Peak wavelength	λ _p	1290	1310	1330	nm	DFB
		1262.5	1270	1277.5		
		1282.5	1290	1297.5		
		1302.5	1310	1317.5		
		1322.5	1330	1347.5		
		1342.5	1350	1357.5		
		1362.5	1370	1377.5		
Wavelength/Temperature	dλ/dT	—	0.09	—	nm/°C	T=-40~+85°C
Side mode suppression ratio	SMSR	35	—	—	dB	CW
Bandwidth	BW	—	14	—	GHz	I _{th} +30mA ,at-3dB
Rise time	t _r	—	—	20	ps	I _b =I _{th} , 20-80%, ER=4dB
Fall time	t _f	—	—	20	ps	I _b =I _{th} , 80-20%, ER=4dB
Tracking error	ΔP _f	-1.5	—	1.5	dB	I _m hold(@P _f =0.6-0.99mW (25°C) CW, T _c =-40~+85°C
Monitor current ^{*Note3}	I _{mo}	100	—	1200	uA	CW, V _{RP} =5V
Monitor dark current	I _d	—	—	100	nA	I _f = I _{th} +30mA
Monitor capacitance	C	—	10	20	pF	V _{RP} =5V
Connector repeatability	—	-1	—	1	dB	
Optical Isolation	—	30	—	—	dB	Single Stage

*Note3:I_{mo} test error ≤±10%

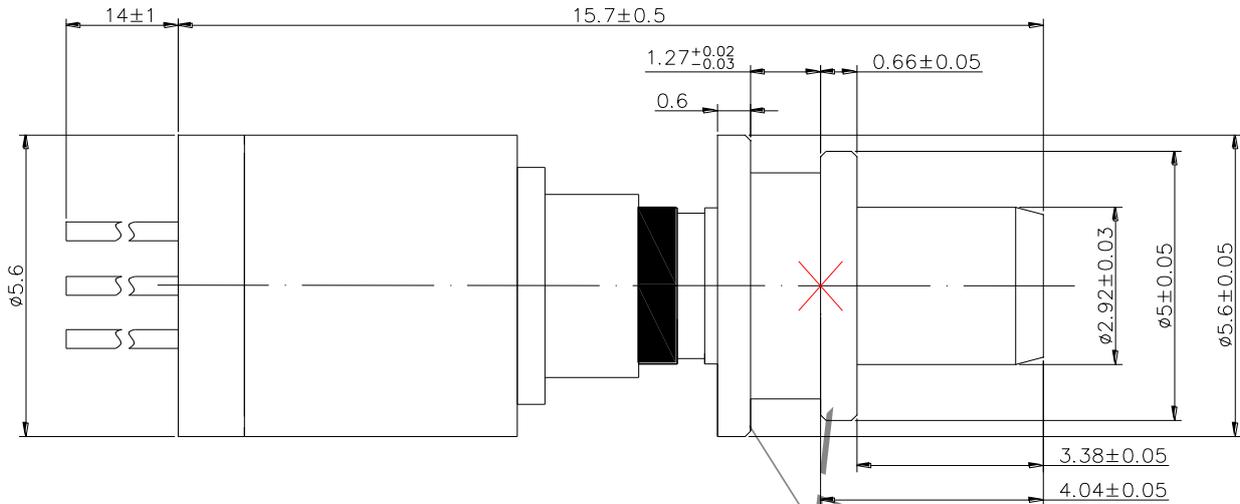
Pin Assignment

TYPE: 4



LD-pin-4 / TYPE: F

TOSA Package series ^{*Note4}



LC-TOSA7

*Note4: Laser mark can be customized.

Ordering Information

LC-TOSA

A B C D E F G H I

Order	Parameter	Detailed Description					
A	Connector Type	7=Insulated transition ring					
B	Data rate	W=25G					
C	Pin Type	F=LD-pin-4					
D	LD Type	D=DFB LD					
E	Power ^{*Note5}	08=0.7~1.15mW			17=1.2~1.9mW		
F	Wavelength	3=1310nm(DFB)					
		CWDM					
		27=1270	29=1290	31=1310	33=1330	35=1350	37=1370
G	Isolator	G= Single Stage					
H	TO type	EO					
I	Solution	Blank= None			X=1-9		

*Note5: DFB test conditions I_{th}+35mA, CWDM test conditions I_{th}+30mA.

Precaution

- (1) The modules should be handled in the same manner as ordinary semiconductor devices to prevent the electro-static damages. For safe keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.
- (2) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.

(3) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

Obtaining Document

You can visit our website:

<http://www.eoptolink.com>

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest documentation.

Revision History

Verision	Initiated	Reviewed	Approved	Revision History	Release Date
Va-1	Yinchun.Zhao	James.liu	Vincent.yu	The initial version	2020-3-1
Va-2	Yinchun.Zhao	James.liu	Vincent.yu	Remove extraneous CWDM wavelengths	2020-12.22
Va-3	Yinchun.Zhao	James.liu	Vincent.yu	Power Range adjusted from 1.4-2.1 mW to 1.2-1.9 mW	2021.8.3
Va-4	Yinchun.Zhao	James.liu	Vincent.yu	Power and test conditions updated, template updated	2021.9.30
Va-5	Yinchun.Zhao	James.liu	Vincent.yu	1、 Monitor current lower limit adjustment; 2、 Updated Package series	2022.10.25

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