

LC-TOSA7TFDx3Gx

**Technical Specification of 1310nm MQW-DFB Laser Diode Module:
(Transmitter Optical Sub-assembly)**



Features

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB laser Diode
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Maximum Soldering Temperature /Time: 260°C/10s
- ◆ Operating Case temperature: -40°C to +85°C
- ◆ RoHS Compliant Products Available

Applications

- ◆ Optical Transmitter of Data Signal
- ◆ Test Equipments

General

LC-TOSA7TFDx3Gx Series are 1310nm InGaAsP/InP MQW-DFB laser diode modules designed for fiber optic communication systems. These modules are transmitter optical sub-assembly with low threshold current and high performance at high temperature, ideally suitable for short reach applications, data rates up to 10Gbps.

A laser diode is mounted into a Ø5.6mm coaxial package integrated with an InGaAs monitor PD, a single-mode fiber-stub and a split sleeve for the optical connector with Ø1.25mm ferrule. And we also can provide two connector types of fiber-stub cover. This is Insulated transition ring structure, related PN is LC-TOSA7xxxxx.

Ordering information (Standard version ^{*Note1})

Part No.	Connector Type	Pin Type	Power	Data Rate	Isolator
LC-TOSA7TFD043Gx	7	LD-Pin-4	04	10Gbps	Single Stage

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

Absolute maximum ratings ^{*Note2}

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+100	°C
Operating case temperature	Top	-40~+85	°C
Forward current (LD)	IFD	100	mA
Reverse voltage (LD)	VrL	2	V
Reverse voltage (PD)	VrP	20	V
Reverse current (PD)	IrP	2	mA
Soldering temperature (<10s)	Stemp	260	°C

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

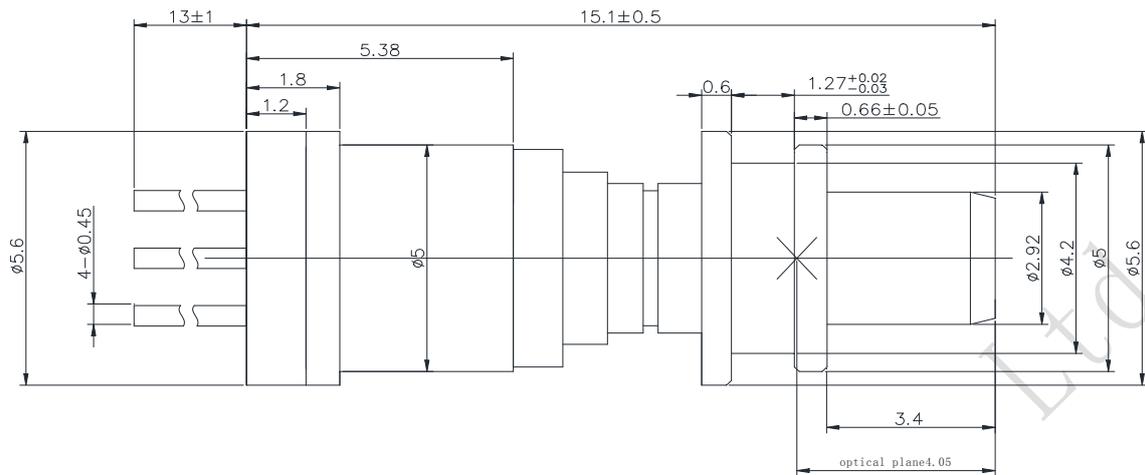
Electrical and optical characteristics

(Pf=1mW, SMF(9.5/125μm), Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold current	Ith	CW	—	10	14	mA
Fiber Coupling Power	Pf	CW, If=Ith+20mA	0.3	—	0.7	mW
Operating voltage	Vf	CW, Tc=-40~+85°C	—	1.2	1.6	V
Slope Efficiency	Se	CW, Average(Ith to Ith+20mA)	0.015	—	0.035	mW/mA
Peak wavelength	λp	CW	1290	1310	1330	nm
Side mode suppression ratio	SMSR	CW, Tc=-40~+85°C	30	40	—	dB
Bandwidth	BW	at-3dB	10	—	—	GHz
Rise time	tr	Ib=Ith, 20-80%,	—	—	0.05	ns
Fall time	tf	Ib=Ith, 80-20%,	—	—	0.05	ns
Tracking error	ΔPf	Im hold(@Pf=0.5mW(25°C)) CW, Tc=-40~+85°C	-1.5	—	1.5	dB
Monitor current ^{*Note3}	Imo	CW, VrP=5V, Tc=-40~+85°C	50	—	1000	uA
Monitor dark current	Id	VrP=5V	—	—	10	nA
Monitor capacitance	C	VrP=5V, f=1MHz	—	10	20	pF
Connector repeatability	—		-1	—	1	dB
Optical Isolation	—	Single Stage	30	—	—	dB

*Note3: Imo test error ≤ ± 10%

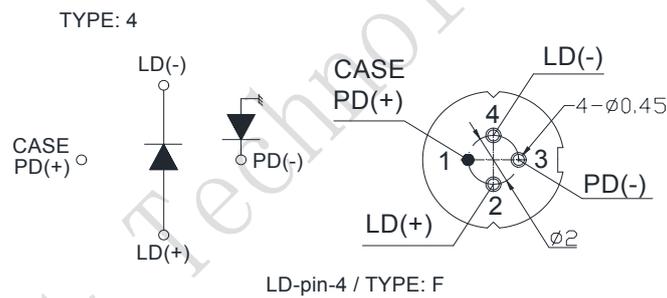
TOSA Package series *Note4



LC-TOSA7

*Note4: Laser mark can be customized.

Pin Assignment



Ordering Information

LC-TOSA
 A B C D E F G H

Order	Parameter	Detailed Description
A	Connector Type	7=Insulated transition ring
B	Data rate	T=10G
C	Pin Type	F=LD-pin-4
D	LD Type	D=DFB LD
E	Power	04=0.3~0.7mW
F	Wavelength	3=1310nm
G	Isolator	G= Single Stage
H	TO type	x=AA~ZZ(No choice)

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	George.zhong	Zore.Zhao Yinchuan Kelly.Cao		The initial	2016-06-23
Va-2	George.zhong	Zore.Zhao Yinchuan Kelly.Cao		Update Operating case temperature	2016-06-29

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