

LC-TOSAxxxDxxxx

Technical Specification of 1270nm~1610nm MQW-DFB Laser Diode Module:
(Transmitter Optical Sub-assembly)for 155Mb/s and 2.5Gb/s transmission

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: -10°C to +85°C
- ◆RoHS Compliant Products Available

Applications

- ◆Optical Transmitter of Data Signal
- ◆Optical Transmitter of Analog Signal
- ◆Microwave Transmission System
- ◆Test Equipments

General

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 tow connector types of fiber-stub cover. The one is insulated, related PN is LC-TOSA7xxDxxxx. The other is not insulated, related PN is LC-TOSA6xxDxxxx.

Ordering information (Standard version ^{*Note1})

Part No.	Connector Type	Data Rate	Pin Type	Power	λ ^{*Note1} (nm)	Isolator
LC-TOSA72BD2057G	7	2.5Gbps	LD-Pin-2	20	1570	Single Stage

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

*Note2: For the detailed CWDM wavelength, please refer the following table.

Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	-10~+85	°C
Forward current (LD)	IFD	150	mA
Reverse voltage (LD)	VrL	2	V
Reverse voltage (PD)	VrP	15	V
Reverse current (PD)	IrP	2	mA
Soldering temperature (<10s)	Stemp	260	°C

Electrical and optical characteristics

(Pf=1.5mW, SMF(9.5/125μm), Tc=+25°C, unless otherwise noted.)

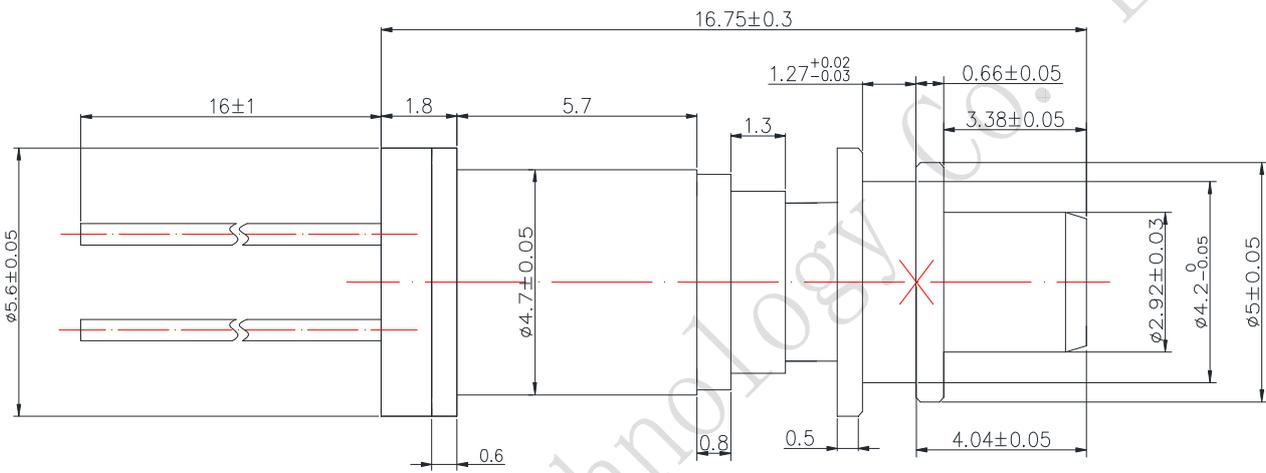
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold current	I _{th}	—	10	15	mA	CW
		—	—	40		CW, T _c =-10°C~+85°C
Output power (after coupled)	P _o	1		3	mW	CW, I _f =I _{th} +20mA
Operating current	I _f	—	30	40	mA	CW
		—	40	70		CW, T _c =-10°C~+85°C
Operating voltage	V _f	—	—	1.6	V	CW, T _c =-10°C~+85°C
Slope efficiency	S _e	0.05	—	0.15	mW/mA	CW
Wavelength	λ _c	(*Note3)			nm	CW
Wavelength temperature coefficient	—	0.07	—	0.1	nm/°C	CW, T _c =-10°C~+85°C
Spectral width	Δλ	—	—	1	nm	CW, -20dB, T _c =-10°C~+85°C
Side-mode suppression ratio	SMSR	30	—	—	dB	CW, T _c =-10°C~+85°C
Tracking error	ΔPf	-1.5	—	1.5	dB	I _m hold(@Pf=3mW(25°C)), CW, T _c =-10°C~+85°C
Relative intensity noise	RIN	—	—	-145	dB/Hz	CW
Third order inter-modulation distortion	IMD3	—	—	-55	dBc	OMI=20%
Monitor current	I _m	80	300	—	uA	CW, V _{rP} =5V, T _c =-10°C~+85°C
Monitor dark current	I _d	—	1	10	nA	CW, V _{rP} =5V
Monitor capacitance	C	—	—	10	pF	V _{rP} =5V, f=1MHz
Connector repeatability	—	-1	—	1	dB	
Optical isolation	—	30	—	—	dB	Single stage
		40	—	—		Dual stage

*Note3: Wavelength

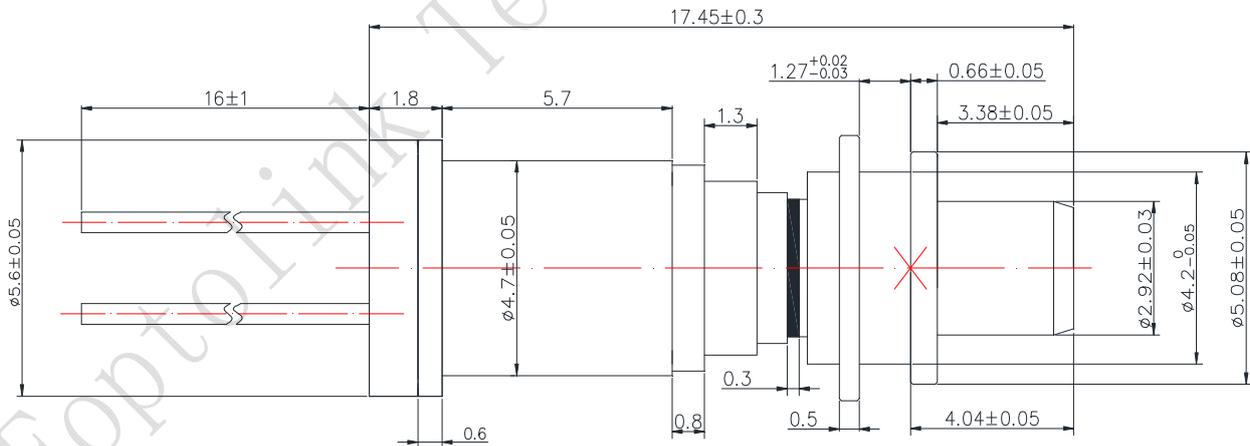
Part No.	Test condition	Limits(nominal -3/+3nm)			Unit
		Min.	Typ.	Max.	
LC-TOSAxxDx27xx	CW, P _o =1.5mW T _c =25°C	1267	1270	1273	nm
LC-TOSAxxDx29xx		1287	1290	1293	
LC-TOSAxxDx31xx		1307	1310	1313	
LC-TOSAxxDx33xx		1327	1330	1333	
LC-TOSAxxDx35xx		1347	1350	1353	
LC-TOSAxxDx37xx		1367	1370	1373	
LC-TOSAxxDx39xx		1387	1390	1393	
LC-TOSAxxDx41xx		1407	1410	1413	
LC-TOSAxxDx43xx		1427	1430	1433	
LC-TOSAxxDx45xx		1447	1450	1453	
LC-TOSAxxDx47xx		1467	1470	1473	

LC-TOSAxxDx49xx	1487	1490	1493
LC-TOSAxxDx51xx	1507	1510	1513
LC-TOSAxxDx53xx	1527	1530	1533
LC-TOSAxxDx55xx	1547	1550	1553
LC-TOSAxxDx57xx	1567	1570	1573
LC-TOSAxxDx59xx	1587	1590	1593
LC-TOSAxxDx61xx	1607	1610	1613

TOSA Package series *Note4



LC-TOSA6

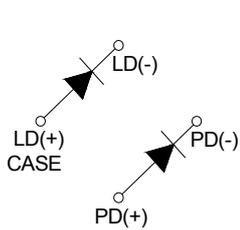


LC-TOSA7

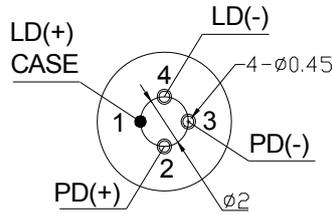
*Note4: Laser mark can be customized.

Pin Assignment*Note5

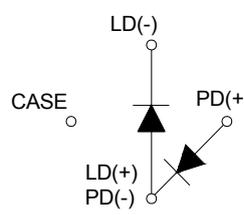
TYPE: 1



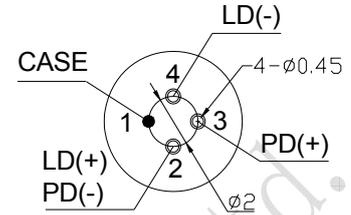
LD-pin-1 / TYPE: C



TYPE: 2



LD-pin-2 / TYPE: B



*Note5: Just 8 channel Wavelength of 1470~1610nm to be provided Type C.

Ordering Information

LC-TOSA
A B C D E F G H

No	Parameter	Detailed Description					
A	Connector Type	6=No insulated			7=Insulated		
B	Data rate	1=1.25Gb/s			2=2.5Gb/s		
C	Pin Type	C=LD-pin-1			B= LD-pin-2		
D	LD Type	D=DFB LD					
E	Power	05=0.2-0.99mW		10=1.0-1.99mW		20=2.0-2.99mW	
F	Wavelength	27=1270	29=1290	31=1310	33=1330	35=1350	37=1370
		39=1390	41=1410	43=1430	45=1450	47=1470	49=1490
		51=1510	53=1530	55=1550	57=1570	59=1590	61=1610
G	Isolator	Blank=None		G= Single Stage		G2=Dual Stage	
H	Fiber Type	Blank=SM			M=MM		

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

Version	Initiated	Reviewed	Approved	Revision history	Release date
Va-1	Aura.gong	zore.Zhao Kelly.Cao		Initial version	2018-01-05

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