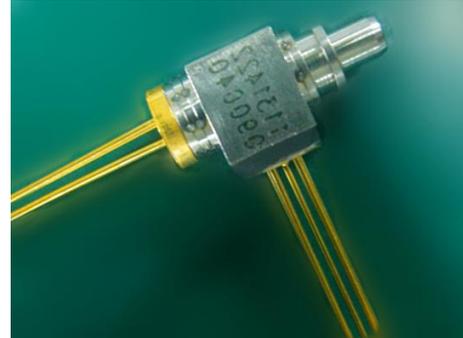


## ETRRD4x05x373EKXxx

With 1490nm MQW-DFB WDM Laser Diode and 1310nm PIN/TIA 1.25Gbps transmission



### Features

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB laser Diode
- ◆ Low threshold, high slope efficiency and high output power
- ◆ Operating Case temperature: -40°C to +85°C
- ◆ single -mode fiber-stub with LC connector
- ◆ High channel isolation
- ◆ Low return loss

### Applications

- ◆ Long distance digital transmission system
- ◆ Cable television system
- ◆ WDM systems

### Absolute maximum ratings

Parameter	Symbol	Min.	Max	Unit
Storage temperature	Tstg	-40	85	°C
Operating Case Temperature	Top	-40	85	°C
Power Supply Voltage	VP	-0.5	4.5	V
Forward Current (LD)	IFD	--	100	mA
Monitor PD Reverse Voltage (LD)	VrL	--	2	V
Monitor PD Reverse Voltage (PD)	VrP	--	20	V
Monitor PD Forward Current (PD)	IrP	--	2	mA
PD Reverse Voltage	Vpd	15		V
Power Supply Voltage	Vp	3.0	3.6	V
Soldering Temperature (<10s)	Stemp	--	260	°C

## Electrical and optical characteristics - Transmitter

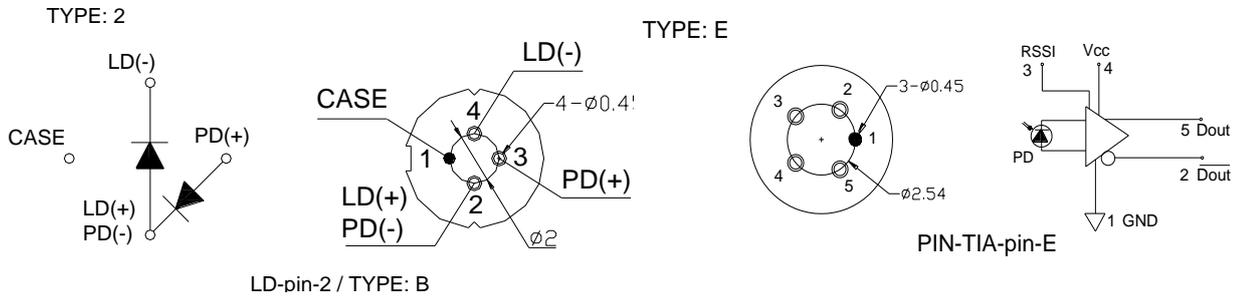
( $I_f=I_{th}+20mA$ ,  $P_f=1mW$ , SMF(9.5/125 $\mu m$ ),  $T_c=+25\pm/-2^\circ C$ , unless otherwise noted.)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold current	I <sub>th</sub>	—	8	15	mA	CW
		—	—	50		CW, T <sub>c</sub> =-40~+85°C
Output Power (After coupled)	P <sub>o</sub>	0.2	—	0.99	mW	CW, I <sub>f</sub> =I <sub>th</sub> +20mA
Operating Current	I <sub>f</sub>	—	30	55	mA	CW
		—	80	100		CW, T <sub>c</sub> =+85°C
Operating Voltage	V <sub>f</sub>	—	1.1	1.5	V	CW, T <sub>c</sub> =-40~+85°C
Side Mode Suppression Ratio	SMSR	35	40	—	dB	CW
Wavelength	$\lambda_c$	1480	1490	1500	nm	CW, T <sub>c</sub> =-40~+85°C
Spectrum Width -20dB	$\Delta\lambda$	—	—	1.0	nm	CW, I <sub>op</sub> =I <sub>th</sub> +20mA,
Tracking Error	TE	-1.5	—	1.5	dB	APC, -40°C/+25°C, +25°C/+85°C
Monitor Current	I <sub>m</sub>	0.1	0.4	2.0	mA	CW, V <sub>rP</sub> =5V, T <sub>c</sub> =-40~+85°C
Monitor Dark Current	I <sub>d</sub>	—	—	0.1	uA	CW, V <sub>rP</sub> =5V
Monitor Capacitance	C	—	10	20	pF	V <sub>rP</sub> =5V, f=1MHz
Connector Repeatability	—	-1	—	1	dB	

## Electrical / Optical Specifications - Receiver

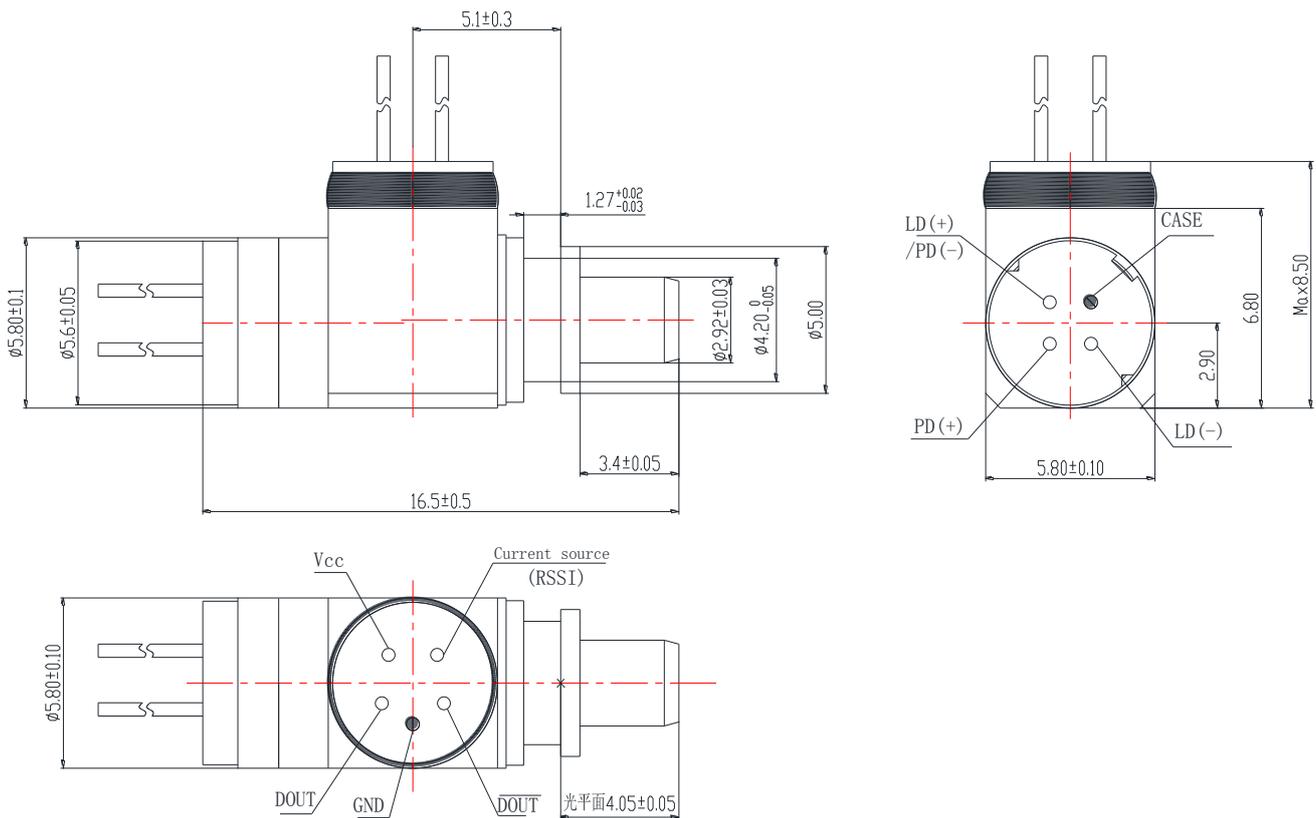
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Wavelength	$\lambda$	1260	1310	1360	nm	
Output Voltage (differential)	V <sub>out</sub>		160--	250	mV	Pin=-26dBm R <sub>L</sub> =100 $\Omega$
Supply Voltage	V <sub>cc</sub>	3.0	3.3	3.6	V	
Supply Current	I <sub>cc</sub>	23	28	35	mA	No load, V <sub>cc</sub> =3.3V
Saturation Power	P <sub>sat</sub>	—	-3	—	dBm	
Small-Signal Bandwidth	BW	730	812	893	MHz	
Sensitivity	Sens	—	—	-26	dBm	1.25Gb/s, $\lambda=1310nm$ BER=10 <sup>-10</sup> , PRBS=2 <sup>7</sup> -1

## Pin Assignment\*Note1



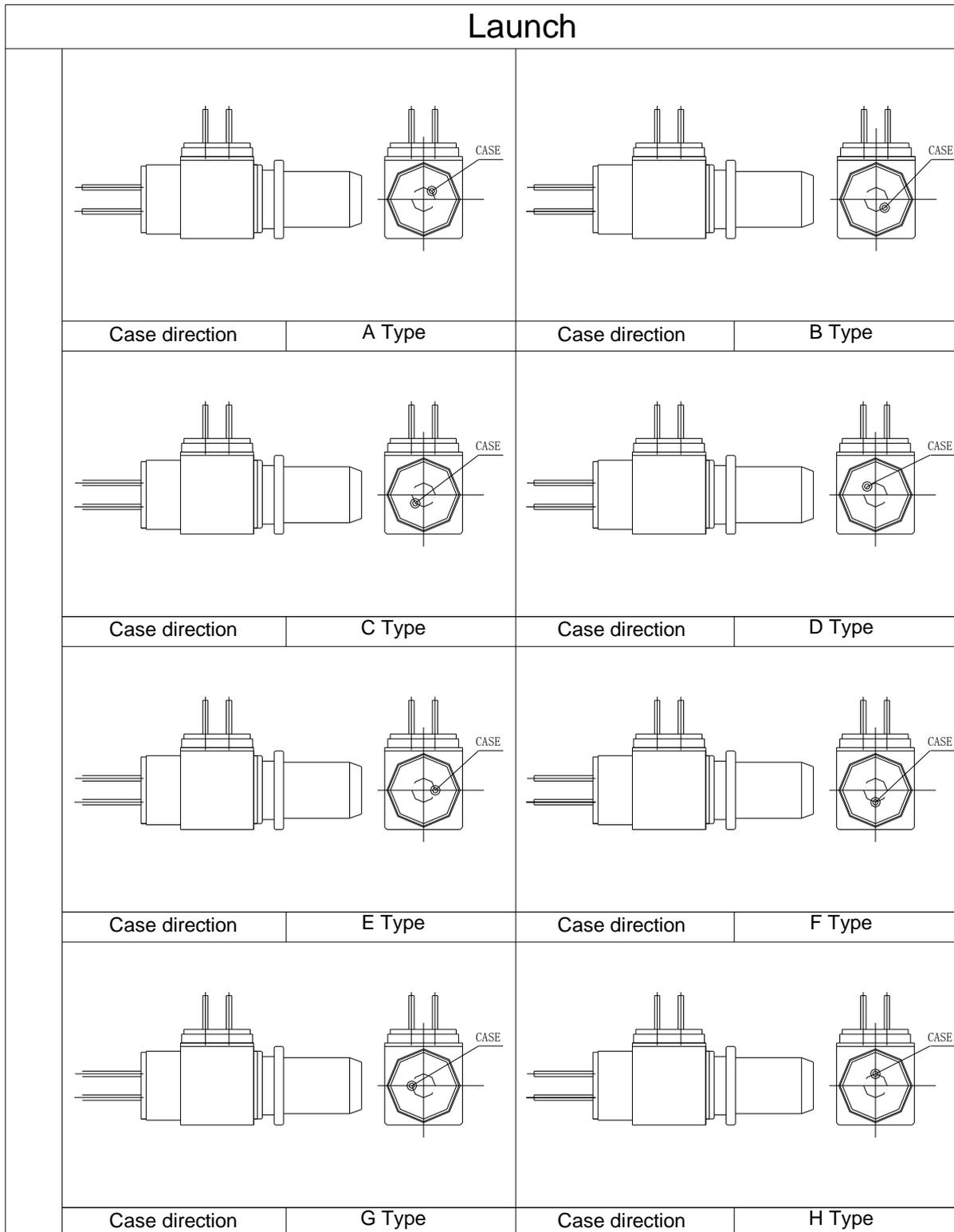
Note1: PIN direction and laser mark can

## Package series\*Note2



Note2: PIN direction and laser mark can be customized.

## TX Pin Order Code <sup>\*Note3. 4. 5</sup>



3. This picture is for pluggable, pigtail BIDI chip PIN package direction's reference

4. This picture is suitable for RX Pin direction comparison .

5. The package direction is described as "x-x" For example "A-B", "A" is TX chip Pin direction, "B" is RX chip Pin direction.

## RX Pin Order Code

Receive	
Case direction	A Type
Case direction	C Type
Case direction	E Type
Case direction	G Type
Case direction	H Type

## Ordering information (Standard version) <sup>\*Note6</sup>

Part No	Transmitter/Receiver	Date	Power
ETRRD4105M373EKXAH	49T/13R	1.25Gbps	0.2-0.99mW
ETRRD4205K373EKXHE	49T/13R	2.5Gbps	0.2-0.99mW

Note6: For more ordering information, please refer to nomenclature or contact EOPTOLINK sales.

ETRR                                            
 A B C D E F G H I J K L M N

Code	Parameter	Detailed Description							
A	Laser Type	D=DFB LD							
B	Launch Wavelength	4=1490nm							
C	Launch Data rate	1=1.25Gbps				2=2.5Gbps			
D	Output Power	05=0.2~0.99							
E	TX Pin Type	1=LD-pin-1				Blank=LD-pin-2			
F	TX Chip Type	K=EO				M= Mitsubishi			
G	Receiver Wavelength	3=1310nm							
H	Receiver Data rate	7=1.25G							
I	Receiver Voltage	3=3.3V							
J	RX Pin Type	E= pin-E							
K	RX Chip Type	K =EO							
L	Connector	X=LC							
M	TX Pin Package Direction	A	B	C	D	E	F	G	H
N	RX Pin Package Direction	A	B	C	D	E	F	G	H

## 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

Revision	Initiated	Reviewed	Approved	Revision History	Release Date
Vb-1	Yinchun.Zhao	Kelly.Cao			2011-06-11
Vb-2	george.zhong	Zore.Zhao Kelly.Cao		Update the Output Power	2015-05-06
Vb-3	George.zhong	Zore.Zhao Kelly.Cao		Update name ETRRD4105M373EKXHE	2016-03-09
Vb-4	Zore.Zhao	Rian.Peng George.Zhong Zhen.Huang		1、 Update name ETRRD4x05x373EKXxx 2、 Update Package 3、 Update Output Voltage	2019.10.8

## Notice:

Eoptolink reserves the right to make changes or discontinue any product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the products are for illustrative purposes only. Eoptolink makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

## Contact:

Add:IOT Industrial Park, Southwest Airport Economic Development Zone, Shuangliu County, Chengdu, Sichuan, China.

Tel: +86-28-67087999 ext.8081

Fax:+86-28-67087979

Postal: 610213

E-mail:sales@eoptolink.com

<http://www.eoptolink.com>