ETRR51xxK3x3CKxx

With 1.55um 1.25G MQW-FP WDM Laser Diode and PIN/TIA 155Mbps～2.5Gbps transmission

Features

- Coaxial package
- InGaAsP/InP MQW-FP laser diode
- Low threshold, high slope efficiency and high output power
- Operating case temperature: -40℃ to +85℃
- singe -mode fiber-stub with ST connector
- Low return loss

Applications

- Long distance digital transmission system
- Cable television system
- WDM systems
- Compatible with 100M/1000Mbps

Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	℃
Operating case temperature	Top	-40~+85	℃
Operation relative Humidity		85	%
Forward current (LD)	IFD	150	mA
Monitor PD reverse voltage (LD)	VrL	2	V
Monitor PD reverse voltage (PD)	VrP	20	V
Monitor PD reverse current (PD)	IrP	2	mA
PD reverse voltage	Vpd	15	V
TIA supply voltage	Vcc	3.0~5.0	V
Soldering temperature (<10s)	Stemp	260	℃

Electrical and optical characteristics - transmitter

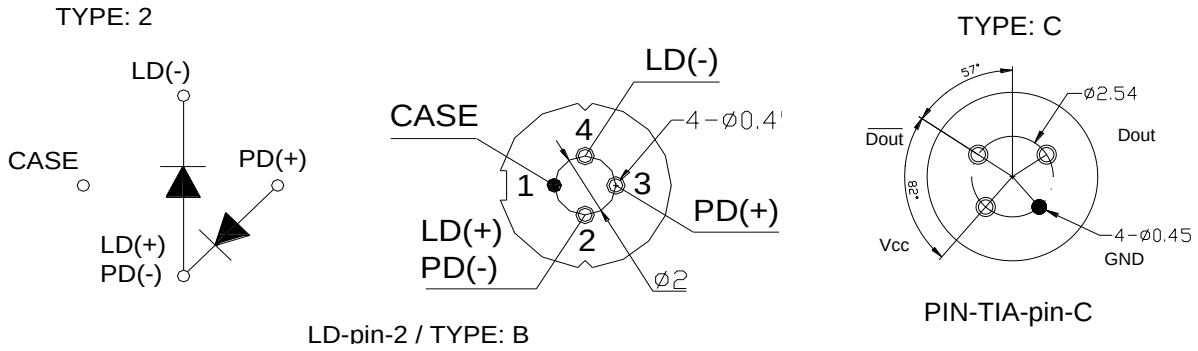
(If=Ith+20mA, Pf=0.4mW, SMF(9.5/125μm), Tc=+25+/-2°C, unless otherwise noted.)

Parameter	Symbol	Min.	Typ	Max	Unit	Test Condition
Threshold current	Ith	3	5	10	mA	CW
Output power (after coupled)	Pf	0.2	0.5	0.99	mW	CW, If=Ith+20mA
Operating voltage	Vf	—	1.2	1.6	V	CW, Tc=-40~+85℃
Slope efficiency	Se	0.01	0.025	0.035	mW/mA	CW, If=Ith+20mA
Peak wavelength	λp	1520	1550	1580	nm	CW
Spectral width	Δλ	—	1.5	3	nm	CW, RMS
Rise and fall time	tr,tf	—	0.1	0.25	ns	Ib=Ith, 20～80%
Monitor current (PD)	Im	0.05	0.2	0.6	mA	CW, If=Ith+20mA VRD=5V
Dark current (PD)	Id	—	—	0.01	uA	VRD=5V
Capacitance (PD)	Ct	—	10	20	pF	VRD=5V,f=1MHz
Connector repeatability	—	-1	—	1	dB	—

Electrical / optical specifications - receiver

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Operating Wavelength	λ	1260	—	1360	nm	
Supply Voltage	Vcc	3.0	3.3	5	V	
Supply current	Icc	23	—	35	mA	Vcc=3.3V
Saturation power	Psat	-3	0	—	dBm	
Output impedance	Zo	—	50	—	Ω	Single ended
Small-signal bandwidth	BW	115			MHz	λ=1310nm,155M, PRBS=27-1, BER=10-10,ER=9dB
Sensitivity	Sen		-37	-35	dBm	
Small-signal bandwidth	BW	435			MHz	λ=1310nm,622M, PRBS=27-1, BER=10-10,ER=9dB
Sensitivity	Sen	—	-32	-30	dBm	
Small-signal bandwidth	BW	730			MHz	λ=1310nm,1.25G, PRBS=27-1, BER=10-10,ER=9dB
Sensitivity	Sen	—	-28	-25	dBm	
Small-signal bandwidth	BW	1.4			GHz	λ=1310nm,2.5G, PRBS=27-1, BER=10-10,ER=9dB
Sensitivity	Sen	—	-23	-21	dBm	

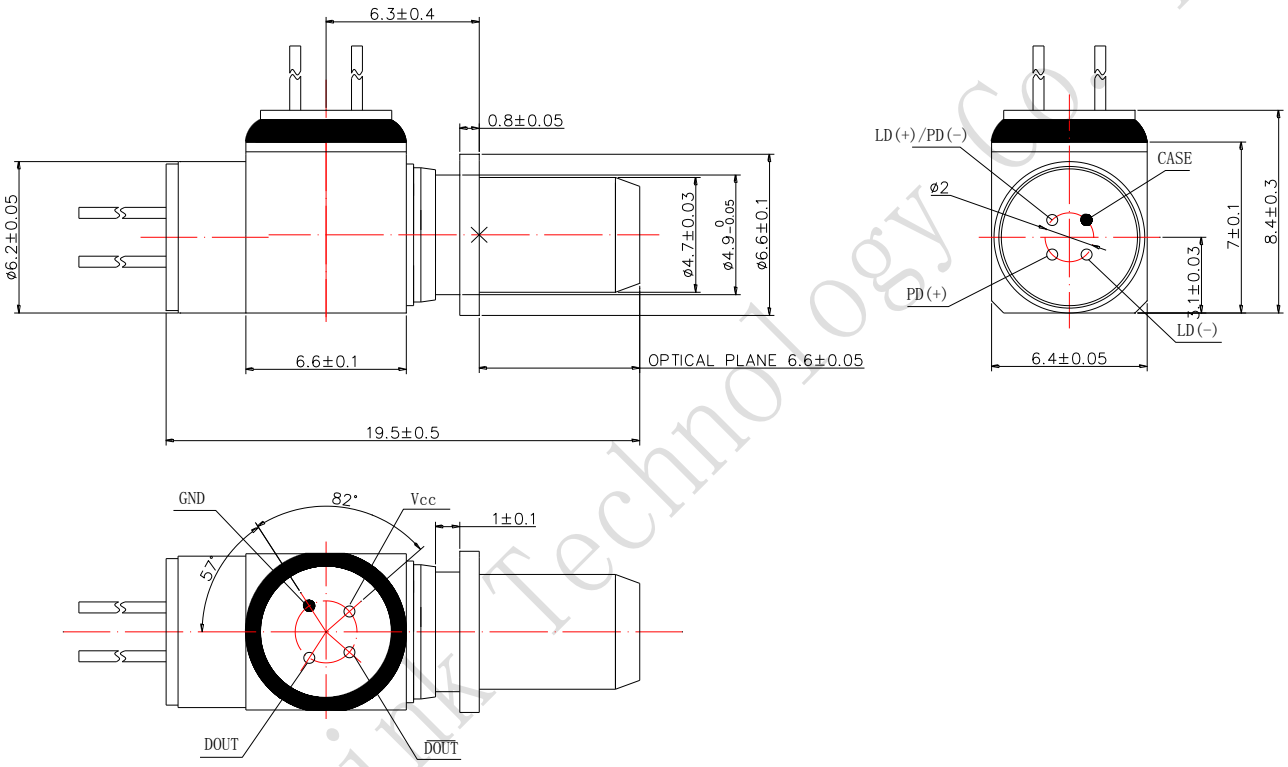
Pin assignment



LD-pin-2 / TYPE: B

PIN-TIA-pin-C

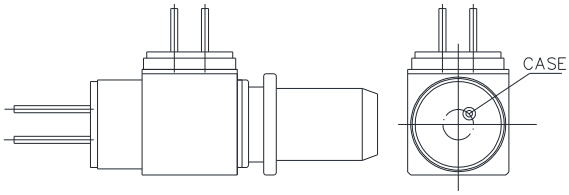
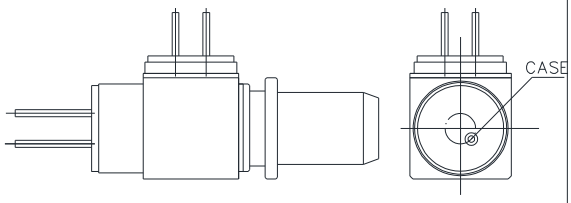
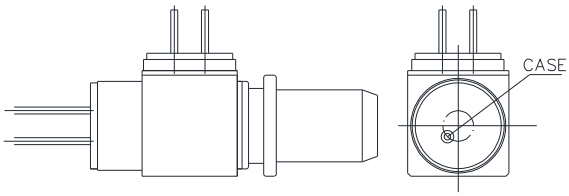
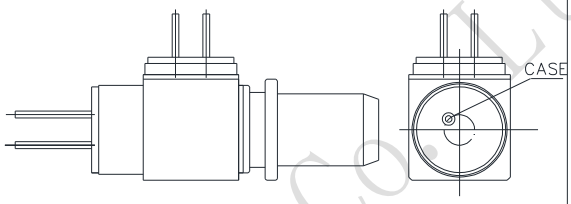
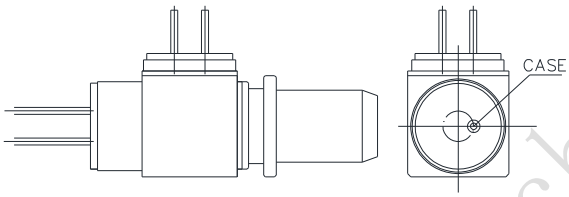
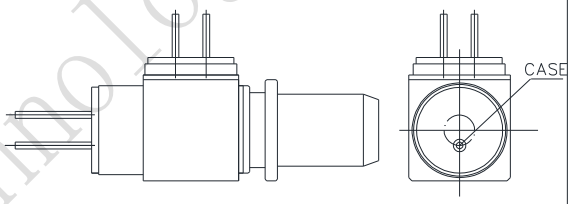
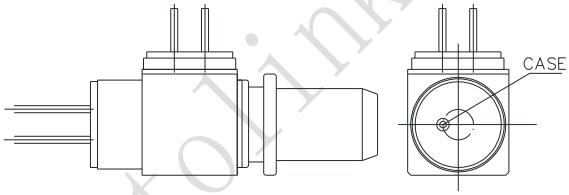
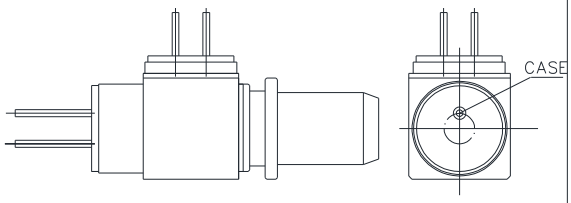
Package dimension *Note1



Note1：PIN direction and laser mark can be customized.

TX pin order code

Launch

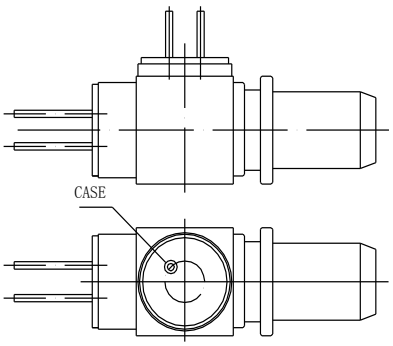
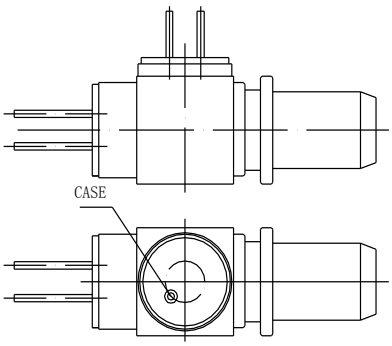
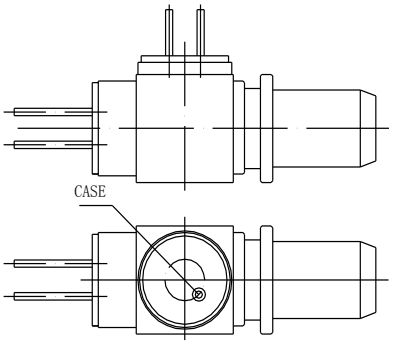
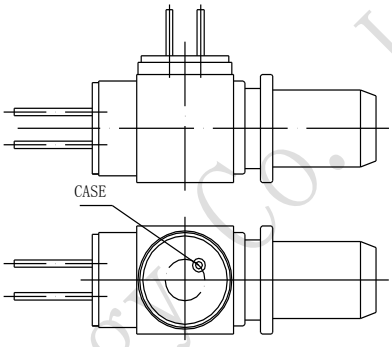
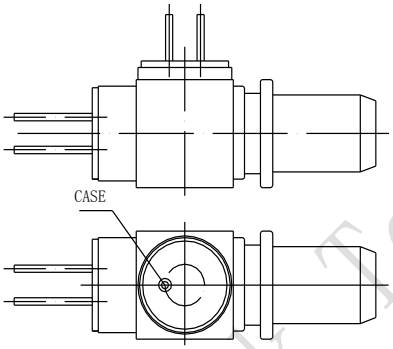
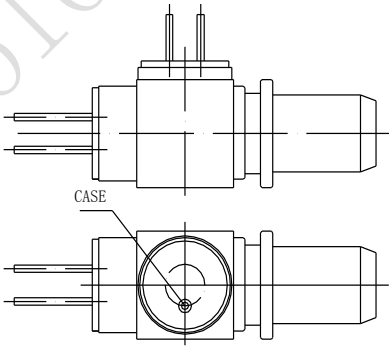
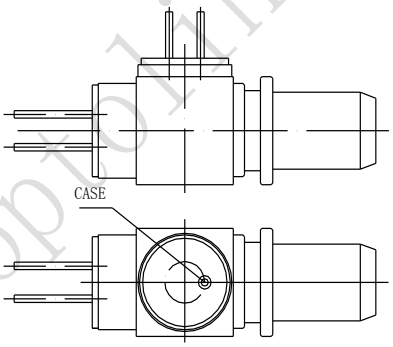
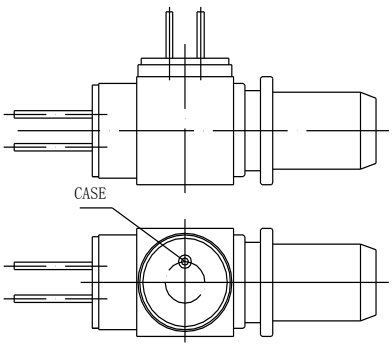
			
Case direction	A Type	Case direction	B Type
			
Case direction	C Type	Case direction	D Type
			
Case direction	E Type	Case direction	F Type
			
Case direction	G Type	Case direction	H Type

1、This picture is for pluggable, pigtail BIDI chip PIN package direction's reference

2、This picture is suitable for RX Pin direction comparison .

The package direction is described as "×-×" 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 B Type
	
Case direction C Type	Case direction D Type
	
Case direction E Type	Case direction F Type
	
Case direction G Type	Case direction H Type

Ordering information (standard version) *Note2

Part No	Laser type	Receiving rate	Transmitter/Receiver
ETRR5104K330CKAA	FP	155M	15T/13R
ETRR5108K353CKAA	FP	622M	15T/13R
ETRR5104K373CKAA	FP	1.25G	15T/13R
ETRR5104K393CKAA	FP	2.5G	15T/13R

Note2: 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

Code	Parameter	Detailed description							
A	Launch wavelength	5=1550nm							
B	Launch data rate	1=1.25Gbps							
C	Output power	04=0.25~0.7mW		08=0.71~1.29 mW		15=1.3~1.79 mW			
E	TX chip type	K=EO							
F	Receiver wavelength	3=1310nm							
G	Receiver data rate	3=155M		5=622M		7=1.25G		9=2.5G	
H	Receiver voltage	0=3.3/5V		3=3.3V		5=5V			
I	RX pin type	C=PIN-TIA-pin-C							
J	RX chip type	K=EO							
K	TX pin package direction	A	B	C	D	E	F	G	H
L	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

Verision	Initiated	Reviewed	Approved	Revision history	Release date
Va-1	Yinchun.Zhao	James.liu	Vincent	Released	2019-11-15

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