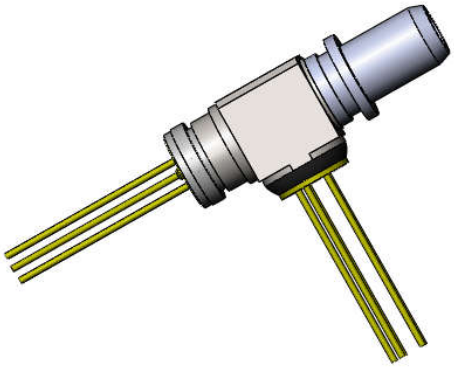
ETRRDx2xxxx93FKxxG

With 1270~1610nm CWDM laser diode for 2.5Gbps and APD for 2.5Gbps transmission



Features

- Coaxial package
- InGaAsP/InP MQW-DFB laser diode
- Date rate up to 2.5Gbps
- Low threshold, high slope efficiency and high output power LD
- Operating case temperature: 0℃ to +70℃
- single -mode fiber-stub with SC/PC connector
- High channel isolation
- Low return loss

Applications

- High speed optical transmission system
- Gigabit ethernet

ABSOLUTE MAXIMUM RATINGS *Note1

Parameter	Symbol	Min.	Max.	Unit
Storage temperature	Tstg	-40	85	℃
Operating case temperature	Topr	0	70	℃
Forward current(LD)	If	---	150	mA
Reverse voltage(LD)	V_{RL}	---	2	V
Reverse voltage(monitor PD)	V_{RD}	---	20	V
Photodiode forward current(monitor PD)	I_{FD}	---	2	mA
Lead soldering (temperature)/(time)	---	---	260/10	℃/Sec

Reverse voltage (analog PD)	Vrpd		20	V
Forward current (analog PD)	Ifpd		10	mA

*Note1: Exceeding any one of these values may destroy the device immediately.

Electrical and optical characteristics - transmitter

(Unless specified else,the specifications below are defined at Tc=25℃)

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Output optical power	Pf	0.2	---.	3	mW	CW, If=Ith+20mA,
Threshold current	Ith	---	8	12	mA	at Tc=25±3℃
Peak wavelength	λc	(*Note2)			nm	CW, If=Ith+20mA,
Operating voltage	Vop	---	1.1	1.5	V	CW, If=Ith+20mA,
Side mode suppression ratio	SMSR	35	40	---	dB	CW, If=Ith+20mA,
Monitor current	Imon	0.1	---	1.0	mA	CW, If=Ith+20mA,
Monitor dark current	Id	--	--	0.1	μA	VRD=5V
Isolation	Iso	30	--		dB	--
Tracking error	TE	-1.5	---	1.5	dB	0℃/+70℃

*Note2: Peak wavelength

Part No.	Test condition	Limits(nominal -3/+3nm)			Unit
		Min	Typ	Max	
ETRRDA2xxxx93FKxxG	CW, Po=1mW Tc=25℃	1267	1270	1273	nm
ETRRDB2xxxx93FKxxG		1287	1290	1293	
ETRRDC2xxxx93FKxxG		1307	1310	1313	
ETRRDD2xxxx93FKxxG		1327	1330	1333	
ETRRDE2xxxx93FKxxG		1347	1350	1353	
ETRRDF2xxxx93FKxxG		1367	1370	1373	
ETRRDG2xxxx93FKxxG		1387	1390	1393	

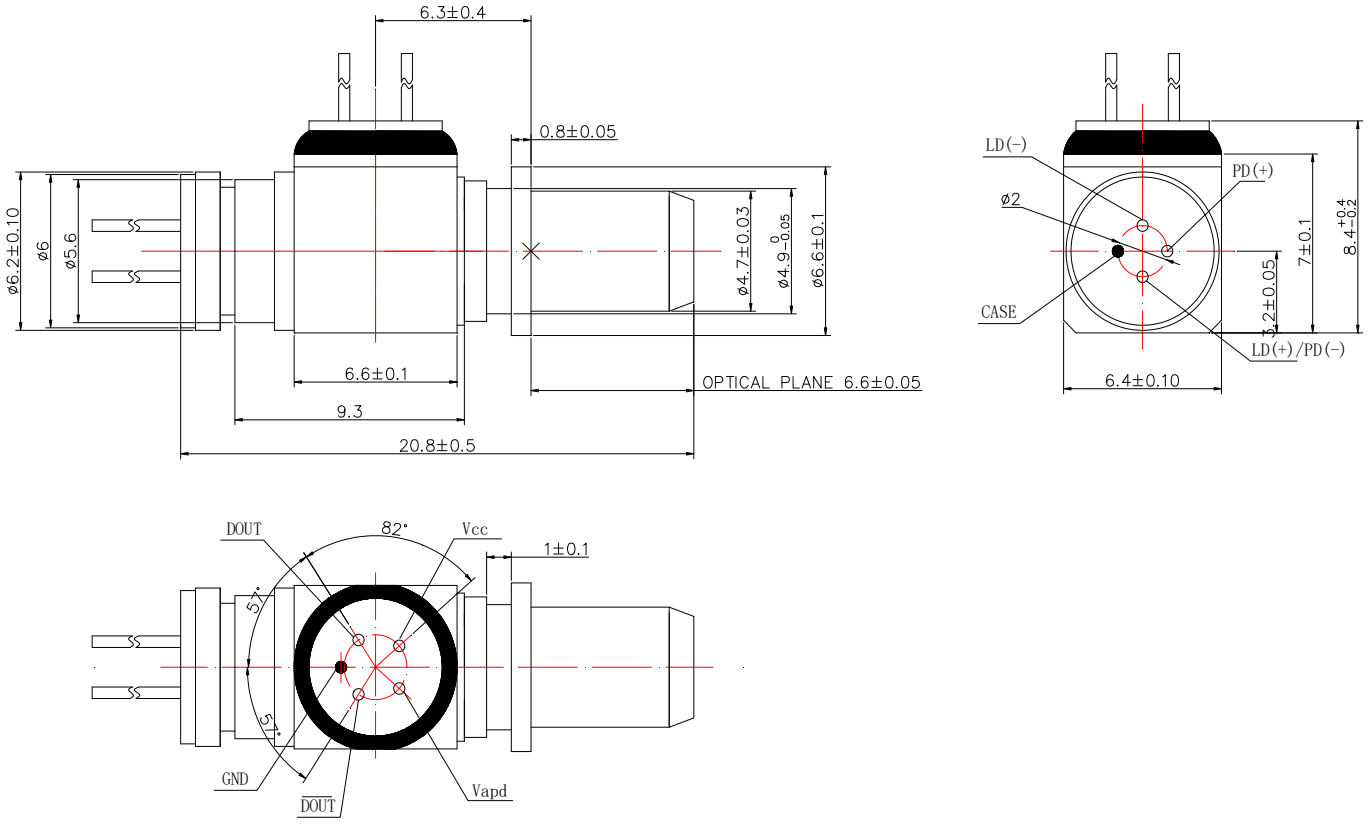
ETRRDH2xxxx93FKxxG		1407	1410	1413	
ETRRDI2xxxx93FKxxG		1427	1430	1433	
ETRRDJ2xxxx93FKxxG		1447	1450	1453	
ETRRDK2xxxx93FKxxG		1467	1470	1473	
ETRRDL2xxxx93FKxxG		1487	1490	1493	
ETRRDM2xxxx93FKxxG		1507	1510	1513	
ETRRDN2xxxx93FKxxG		1527	1530	1533	
ETRRDO2xxxx93FKxxG		1547	1550	1553	
ETRRDP2xxxx93FKxxG		1567	1570	1573	
ETRRDQ2xxxx93FKxxG		1587	1590	1593	
ETRRDR2xxxx93FKxxG		1607	1610	1613	

Electrical / optical specifications - Receiver

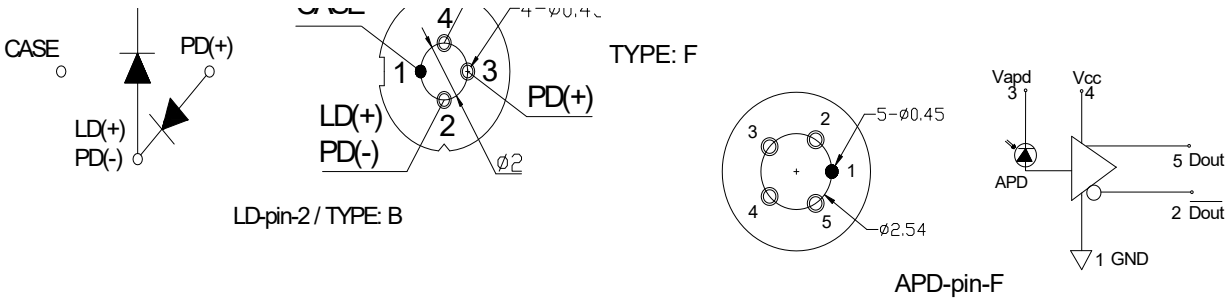
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Operating Wavelength	λ	λ -20	λ*Note3	λ +20	nm	
APD Breakdown Voltage	Vbr	35	42	55	V	Ir = 10uA
APD Operating Voltage	VAPD		Vbr-3		V	
Supply Voltage	Vcc	3.0	3.3	3.6	V	
Sensitivity	Sen	---	---	-31	dBm	PRBS2^{23-1},BER=10^{-10},2.5Gbps,ER=9dB
Saturation Power	Psat	-7	---	---	dBm	
Supply current	Icc	---	20	25	mA	

*Note3:Wavelength interval between emission and reception ≥60nm

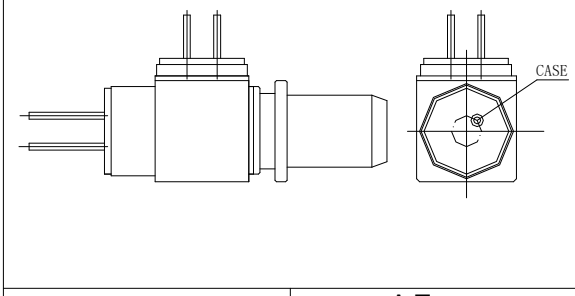
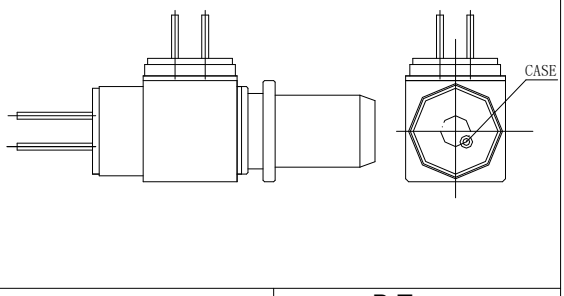
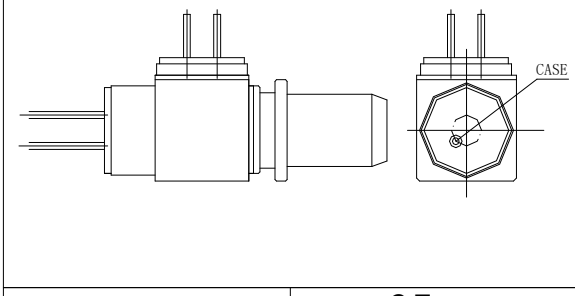
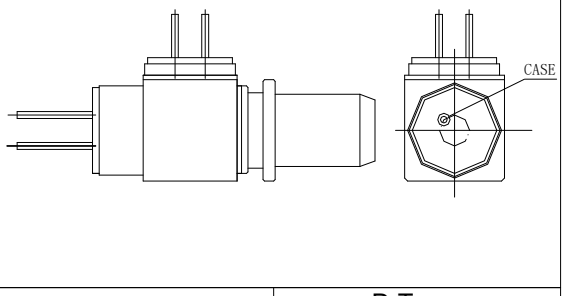
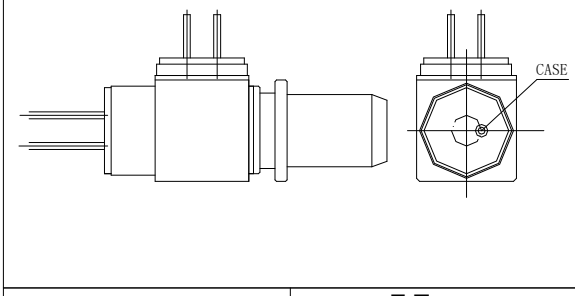
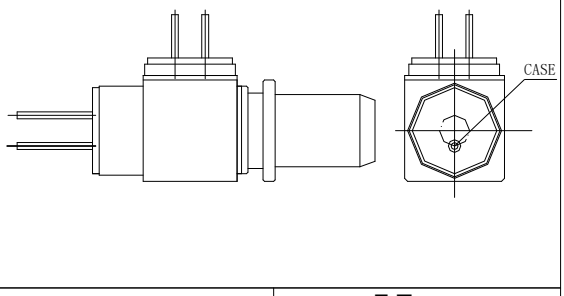
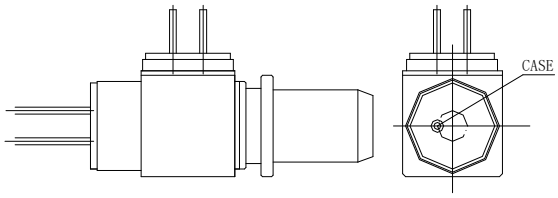
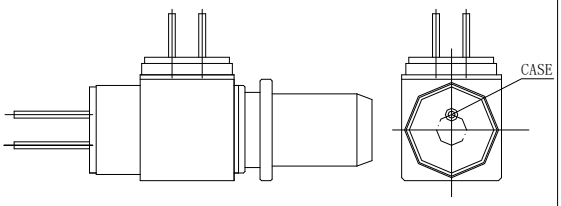
Package dimension



Pin Assignment



TX Pin Order Code*Note4、5、6

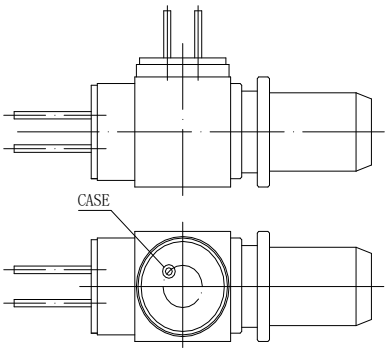
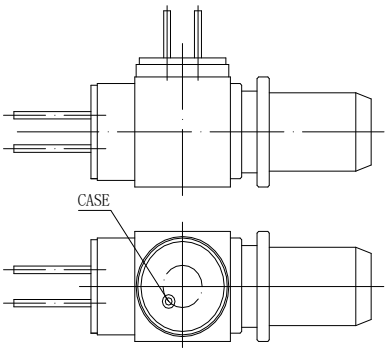
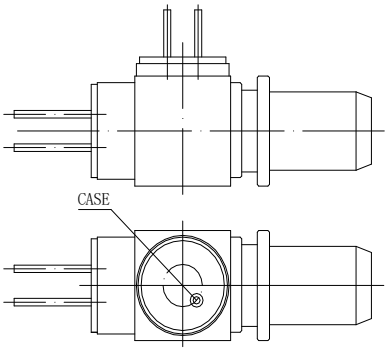
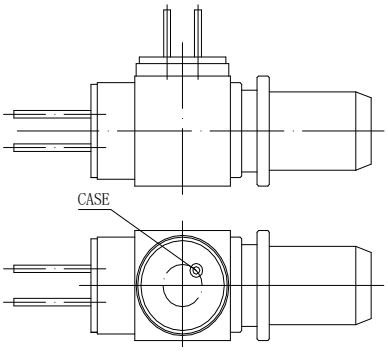
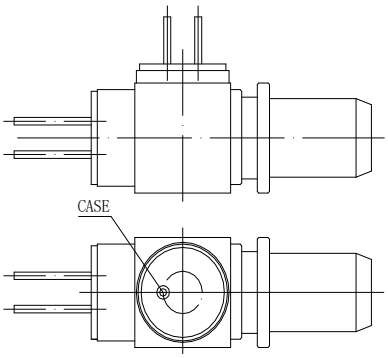
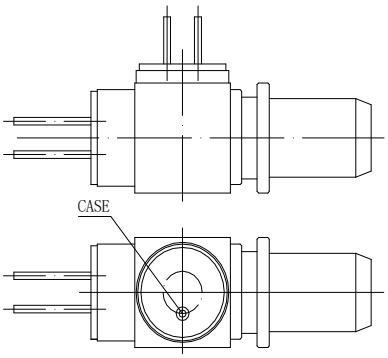
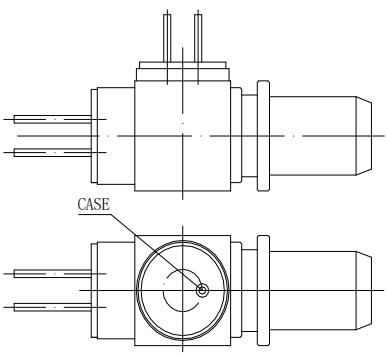
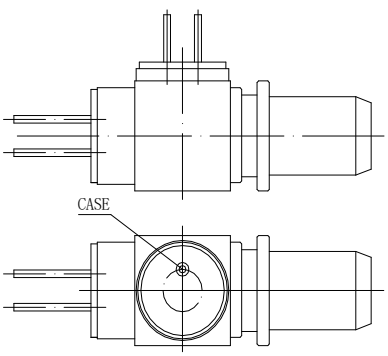
Launch			
			
Case direction	A Type	Case direction	B Type
			
Case direction	C Type	Case direction	D Type
			
Case direction	E Type	Case direction	F Type
			
Case direction	G Type	Case direction	H Type

Note4.This picture is for pluggable, pigtail BIDI chip PIN package direction's reference

Note5.This picture is suitable for RX Pin direction comparison .

Note6.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) *Note7

Part No	Transmitter/Receiver
ETRRDL225MO93FKAFG	1490T/1550R
ETRRDM225MP93FKAFG	1510T/1570R

*Note7: 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

Code	Parameter	Detailed Description							
A	Laser Type	D=DFB LD							
B	Launch Wavelength	A=1270nm	B=1290nm	C=1310nm	D=1330nm				
		E=1350nm	F=1370nm	G=1390nm	H=1410nm				
		I=1430nm	J=1450nm	K=1470nm	L=1490nm				
		M=1510nm	N=1530nm	O=1550nm	P=1570nm				
		Q=1590nm	R=1610nm						
C	Launch Data rate	2=2.5Gbps							
D	Output Power	25=1.6~2.99mW		xx=Customization					
E	TX Chip Type	M= Mitsubishi		xx=Customization					
F	Receiver Wavelength	A=1270nm	B=1290nm	C=1310nm	D=1330nm				
		E=1350nm	F=1370nm	G=1390nm	H=1410nm				
		I=1430nm	J=1450nm	K=1470nm	L=1490nm				
		M=1510nm	N=1530nm	O=1550nm	P=1570nm				
		Q=1590nm	R=1610nm						
G	Receiver Data rate	9=2.5G							
H	Receiver Voltage	3=3.3V							
I	RX Pin Type	F=APD pin-F							
J	RX Chip Type	K=Eoptolink							
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
M	Isolator	Blank=None				G=with G			

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

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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	2020-2-19
Va-2	Yinchun.Zhao	James.liu	Vincent.yu	Update Package Dimension	2021-5-12

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