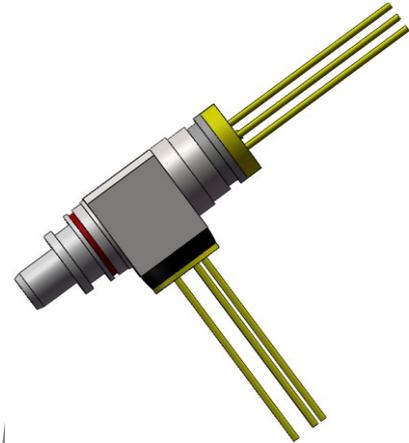


## ETRRDxTxxFKxT3FKXxxGlxx

With 1270nm&1330nm MQW-DFB Laser Diode for 10G and 1330nm&1270nm 10G APD-TIA 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 sensitive APD-TIA
- ◆ Low return loss

### Applications

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

### Absolute maximum ratings<sup>\*Note1</sup>

Parameter	Symbol	Min	Max	Unit
Storage temperature	Tstg	-40	85	°C
Operating case temperature	Top	-40	85	°C
Laser Forward current (LD)	I <sub>FL</sub>	---	150	mA
Laser Reverse voltage (LD)	V <sub>RL</sub>	---	2	V
Monitor PD Forward current (PD)	I <sub>PD</sub>	---	2	mA
Monitor PD Reverse voltage (PD)	V <sub>RD</sub>	---	20	V
APD supply voltage	V <sub>PD</sub>	---	V <sub>br</sub>	V
TIA supply voltage	V <sub>CC</sub>	-0.5	2.0	mA
Soldering temperature (<10s)	Stemp	---	260	°C

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

## Transmitter Optical And Electrical Characteristics

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

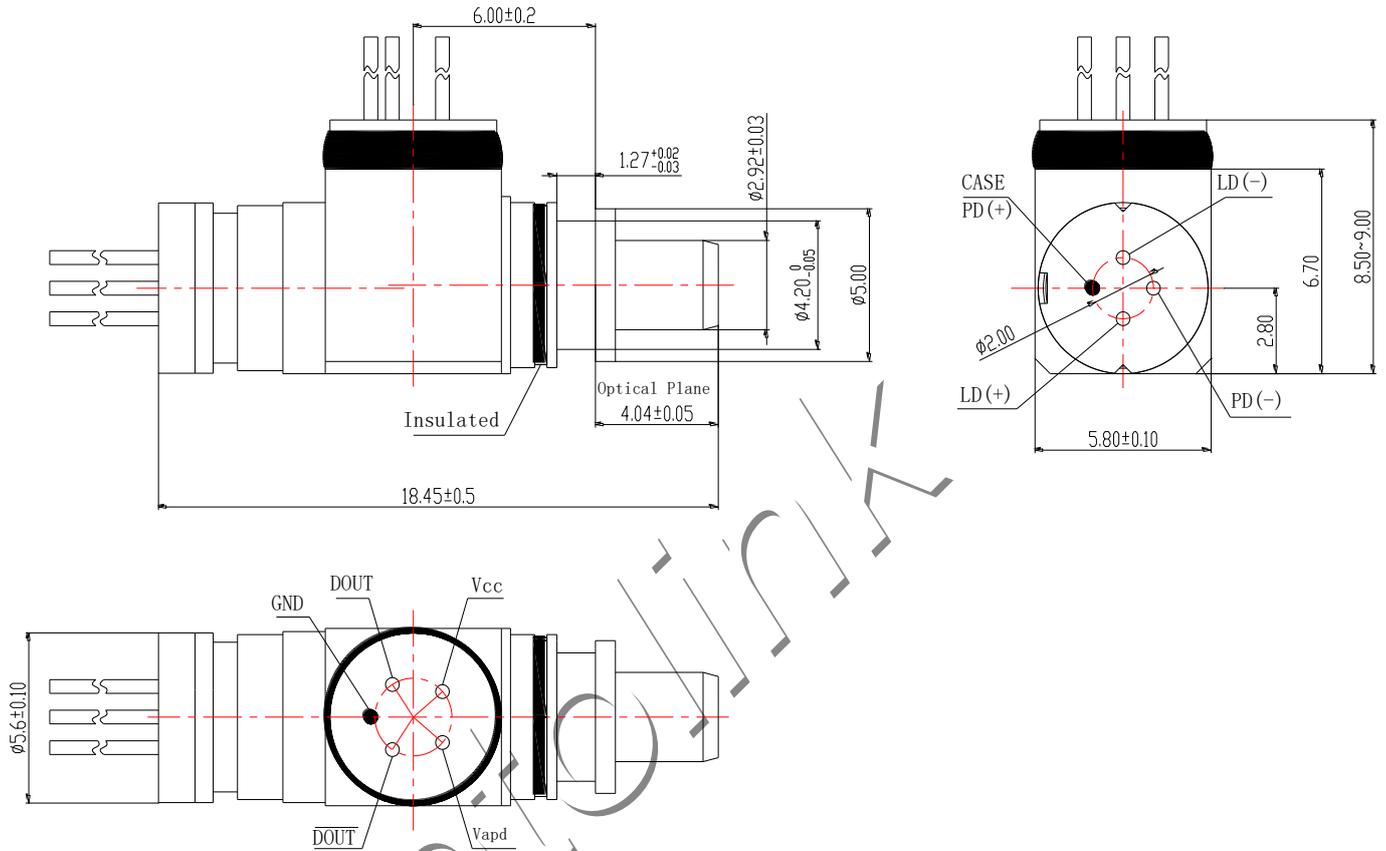
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold Current	Ith	5	-	15	mA	Tc=25°C
		-	20	40	mA	Tc=85°C
Operating Voltage	Vop	-	1.3	1.7	V	CW, Iop=Ith+20mA,
Output Optical Power	Pf	0.5	-	2.99	mW	CW, Iop=Ith+20mA
Center Wavelength	λ1	1260	1270	1280	nm	CW, Iop=Ith+20mA, Tc=-40~85°C
	λ2	1320	1330	1340		
Spectrum Width (-20dB)	Δλ	-	-	1.0	nm	CW, Iop=Ith+20mA, Tc=-40~85°C
Side Mode Suppression Ratio	SMSR	35	-	-	dB	CW, Iop=Ith+20mA, Tc=-40~85°C
Monitor Current	Imon	0.1	-	1.0	mA	Vrd=5V, CW, Iop=Ith+20mA
Monitor Dark Current	Id	-	-	0.1	μA	Vrd=1V
Tracking Error	TE	-1.5	-	1.5	dB	CW, Tc=-40~85°C

## Receiver Optical And Electrical Characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Wavelength	λ1	1320	1330	1340	nm	
	λ2	1260	1270	1280		
Supply Voltage	Vcc	3.0	3.3	3.6	V	
Supply Current	Icc	-	27	34	mA	RL = 50Ω
Breakdown voltage	Vbr	25	-	35	V	Id=10uA
Temp. coefficient of Vbr	γ	0.04	-	0.06	V/°C	Id=10μA, φe=0μw, -40°C ~+85°C
Sensitivity	Sen	-	-	-21.5	dBm	λ=1330nm&1270nm,10.3125G, PRBS2 <sup>31</sup> -1,ER=5dB, BER=10 <sup>-12</sup>
APD responsivity	R	0.85	-	-	A/W	M=1, λ =1270nm&1330nm, Pin=-30dBm
Dark current	Id	-	-	50	nA	Tc=25°C

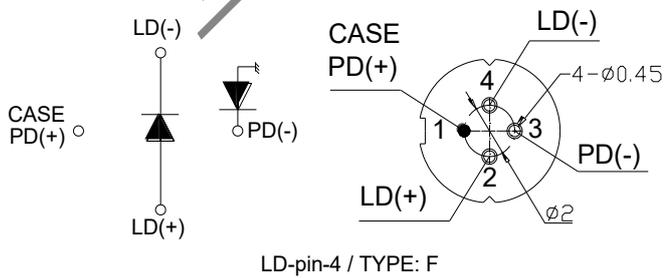
**Package dimension** \*Note2



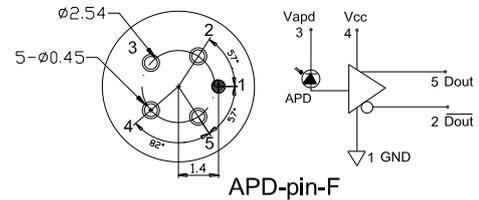
Note2: PIN direction and laser mark can be customized.

**Pin Assignment** \*Note3

TYPE: 4

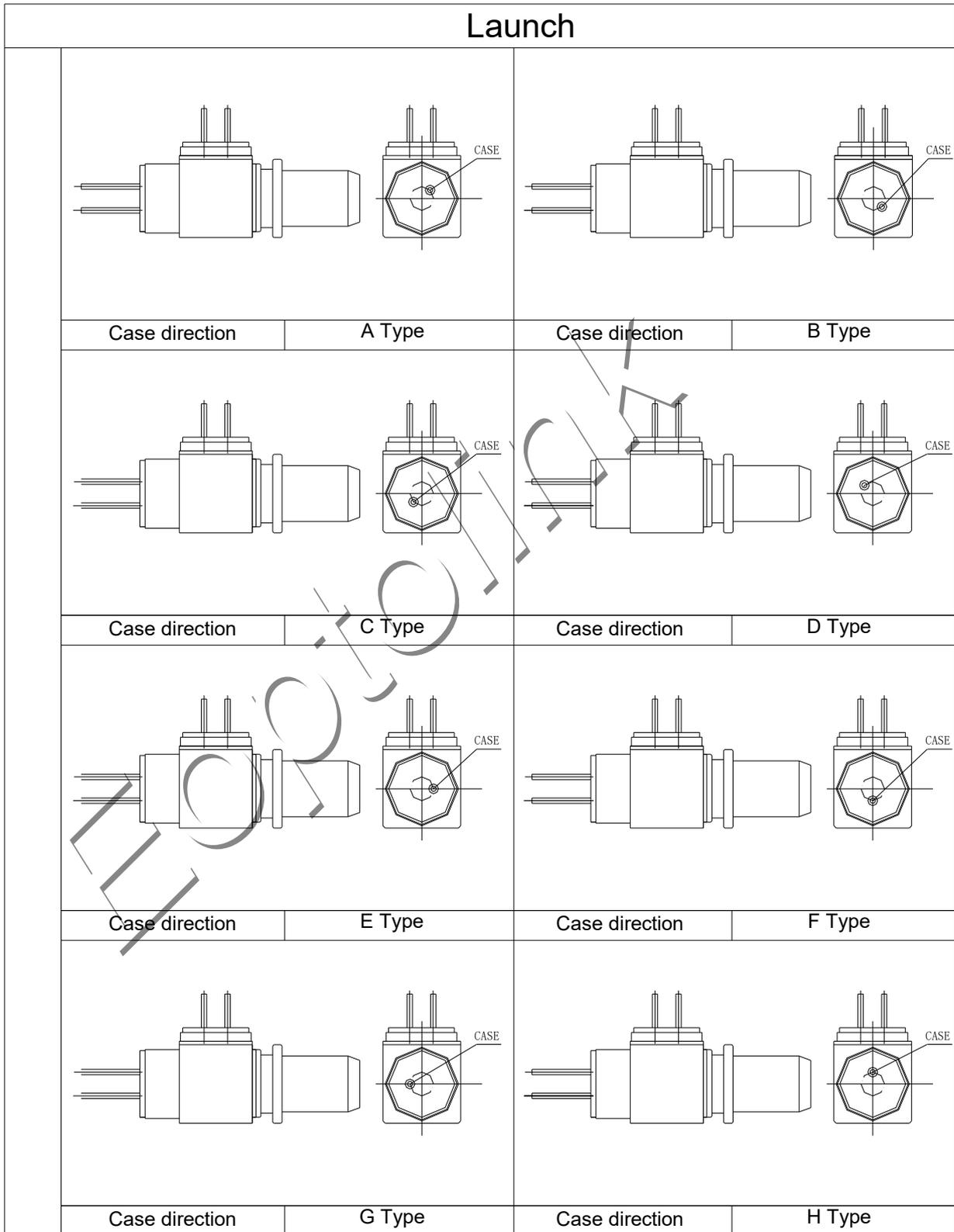


TYPE: F



Note3: Pin assignment can be customized.

## TX Pin Order Code<sup>\*Note4,5,6</sup>



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 "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	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) <sup>\*Note7</sup>

Part No	Laser type	Transmitter/Receiver
ETRRDAT25FKDT3FKXGEGIGP	DFB	1270T/1330R
ETRRDDT25FKAT3FKXGEGIGP	DFB	1330T/1270R

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 N O P Q

Code	Parameter	Detailed Description							
A	Laser Type	D=DFB LD							
B	Launch Wavelength	A=1270nm				D=1330nm			
C	Launch Data rate	T=10Gbps							
D	Output Power	25=1.6~2.99mW				xx=Customization			
E	TX Pin Type	F=LD-pin-4							
F	TX Chip Type	K=Eoptolink							
G	Receiver Wavelength	D=1330nm				A=1270nm			
H	Receiver Data rate	T=10Gbps							
I	Receiver Voltage	3=3.3V							
J	RX Pin Type	F= APD-pin-F							
K	RX Chip Type	K=Eoptolink							
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
O	Isolator	Blank=None				G=with I			
P	Receptacle Frame	I=Insulated							
Q	TIA Type	GP=GN7069E				xx=Customization			

## 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.

## Revision History

Revision	Initiated	Reviewed	Approved	Revision History	Release Date
Va-1	James.liu	Vincent.yu	Zore.Zhao	Initial	2023.7.11

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