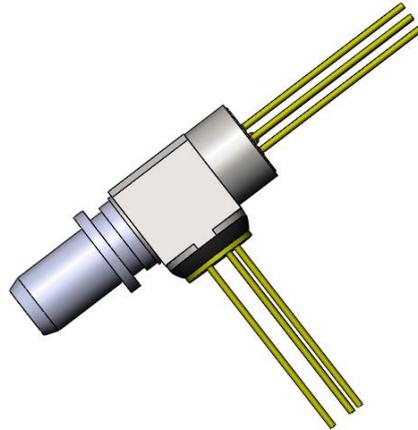


## ETRRD32xxKWT3FKxx

With 1310nm 2.5G DFB laser diode and 1577nm 10G APD-TIA transmission



### Features

- ◆ Coaxial package
- ◆ InGaAsP/InP MQW-DFB laser diode
- ◆ Low threshold, high slope efficiency and high output power
- ◆ High sensitive APD-TIA
- ◆ ROHS compliant products available

### Applications

- ◆ 10GbE application
- ◆ Asymmetry 10G EPON ONU

### Performance specification

**Absolute maximum Ratings**(Tc=25°C,unless otherwise noted) <sup>\*Note1</sup>

Parameter	Symbol	Min.	Max.	Unit
Storage temperature	Tstg	-40	85	°C
Operating case temperature	Topr	-40	85	°C
Storage and operating humidity	--	--	85	%
LD reverse voltage	V <sub>RL</sub>	--	2	V
LD forward current	I <sub>FL</sub>	--	120	mA
LD optical output power	P <sub>O</sub>	--	10	dBm
MPD reverse voltage	V <sub>RD</sub>	--	6	V
MPD forward current	I <sub>FD</sub>	--	10	mA
APD supply voltage	V <sub>apd</sub>	--	V <sub>br</sub>	V

APD forward current	$I_{FD}$	--	2	mA
APD reverse current	$I_{FD}$	--	2	mA
TIA supply voltage	$V_{CC}$	-0.7	5	V
Lead soldering (temperature)/(time)	--	--	260/10	°C/Sec

\*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  $T_c=25^\circ\text{C}$ )

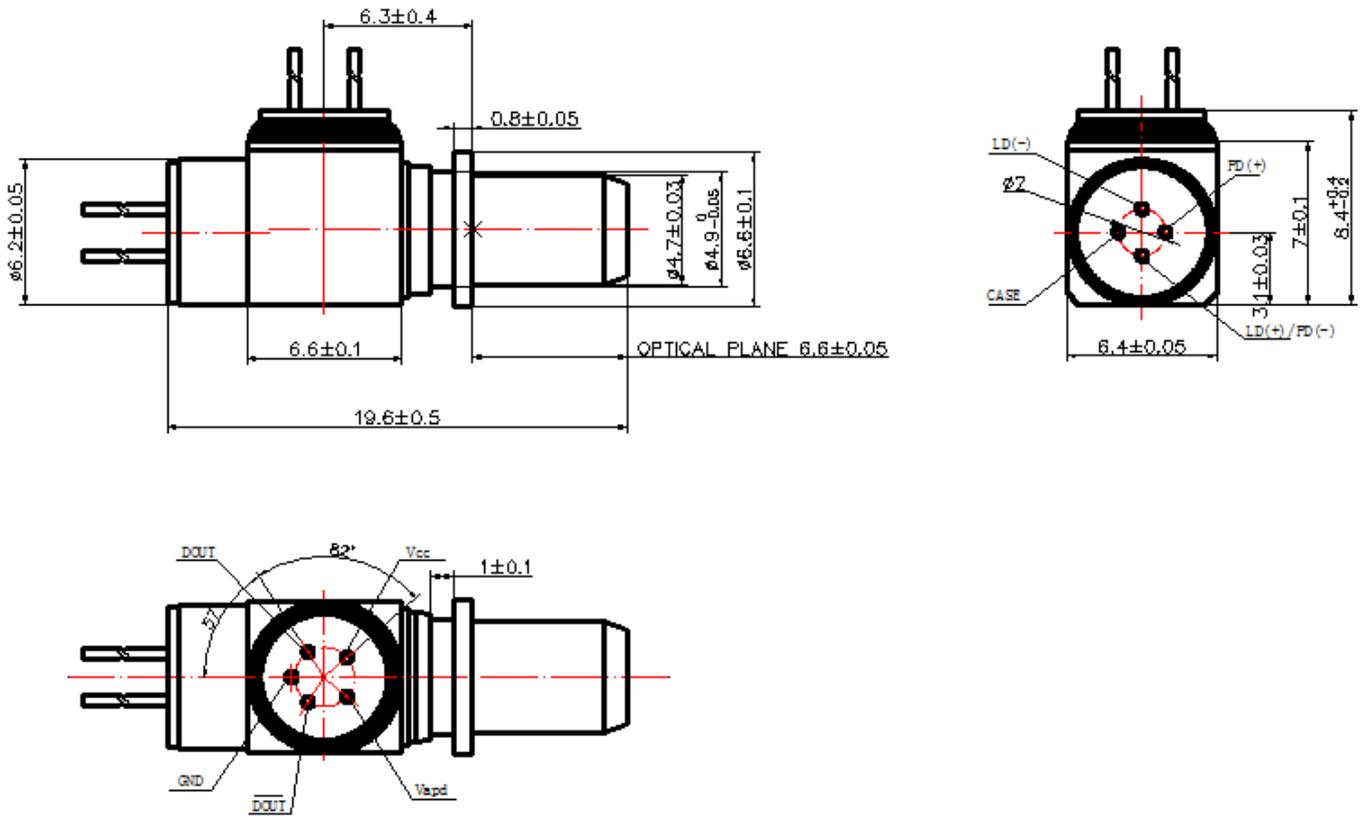
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold current	$I_{th}$	--	10	13	mA	CW
Laser output optical power	$P_f$	1.6	--	4	mW	CW, $I_f=I_{th}+20\text{mA}$
Slope efficiency	SE	0.08	--	0.2	W/A	CW, $I_f=I_{th}+20\text{mA}$
Optical wavelength	$\lambda$	1290	1310	1330	nm	CW, $I_f=I_{th}+20\text{mA}$
Operating voltage	$V_f$	--	1.2	1.5	V	CW, $I_f=I_{th}+20\text{mA}$
Spectrum width (-20dB)	$\Delta\lambda$	--	--	1.0	nm	CW, $I_f=I_{th}+20\text{mA}$
Side mode suppression ratio	SMSR	30	--	--	dB	CW, $I_f=I_{th}+20\text{mA}$
Monitor current	$I_m$	0.1	--	1.0	mA	CW, $I_f=I_{th}+20\text{mA}$
Monitor dark current	$I_d$	--	--	100	nA	$V_{rp}=5\text{V}$
Tracking Error	TE	-1.5	--	1.5	dB	-40~85°C

## Receiver optical and electrical characteristics

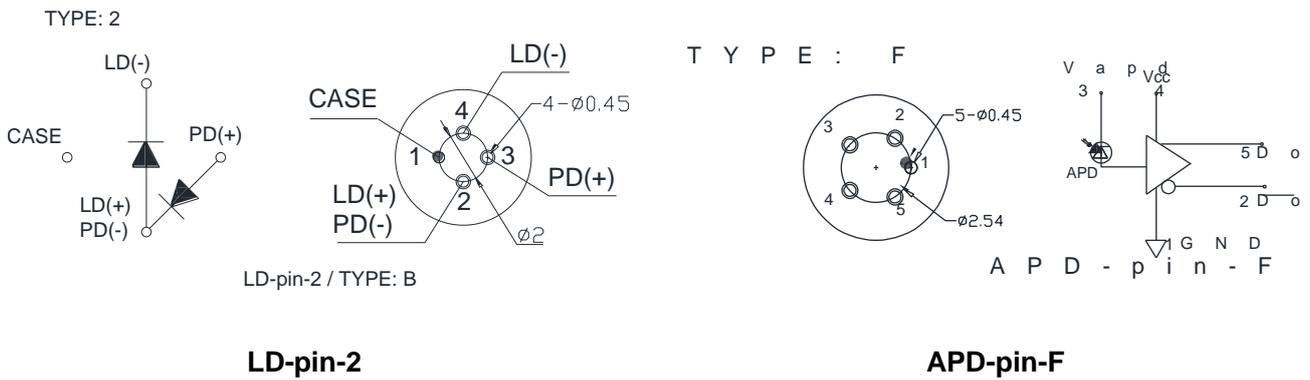
(Unless specified else, the specifications below are defined at  $T_c=25^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply voltage	$V_{cc}$	3.0	3.3	3.6	V	
Breakdown voltage	$V_{br}$	20	35	45	V	$I_d=10\mu\text{A}$
Dark current	$I_d$	--	--	100	nA	$V_{op}$
Receiving wavelength	$\lambda$	1575	1577	1580	nm	
Optical sensitivity	S	--	--	-29.5	dBm	$\lambda=1577\text{nm}, 10.3\text{Gbps},$ $\text{PRBS}=2^{31}-1, \text{BER}<10^{-3}, \text{NRZ},$
Overload power	$P_{load}$	-7	--	--	dBm	
TIA supply current	$I_{cc}$	22	--	50	mA	$V_{cc}=3.3\text{V}$
Temp. coefficient of $V_{br}$	$\gamma$	0.4	--	0.6	V/°C	$I_d=10\mu\text{A}, \phi$ $e=0\mu\text{w}-40\sim+85^\circ\text{C}$
Optical crosstalk	$X_{opt}$	--	--	-40	dB	$\lambda=1260\sim1510\text{nm}$ & $1600\sim1630\text{nm}$

**Package dimension** \*Note2

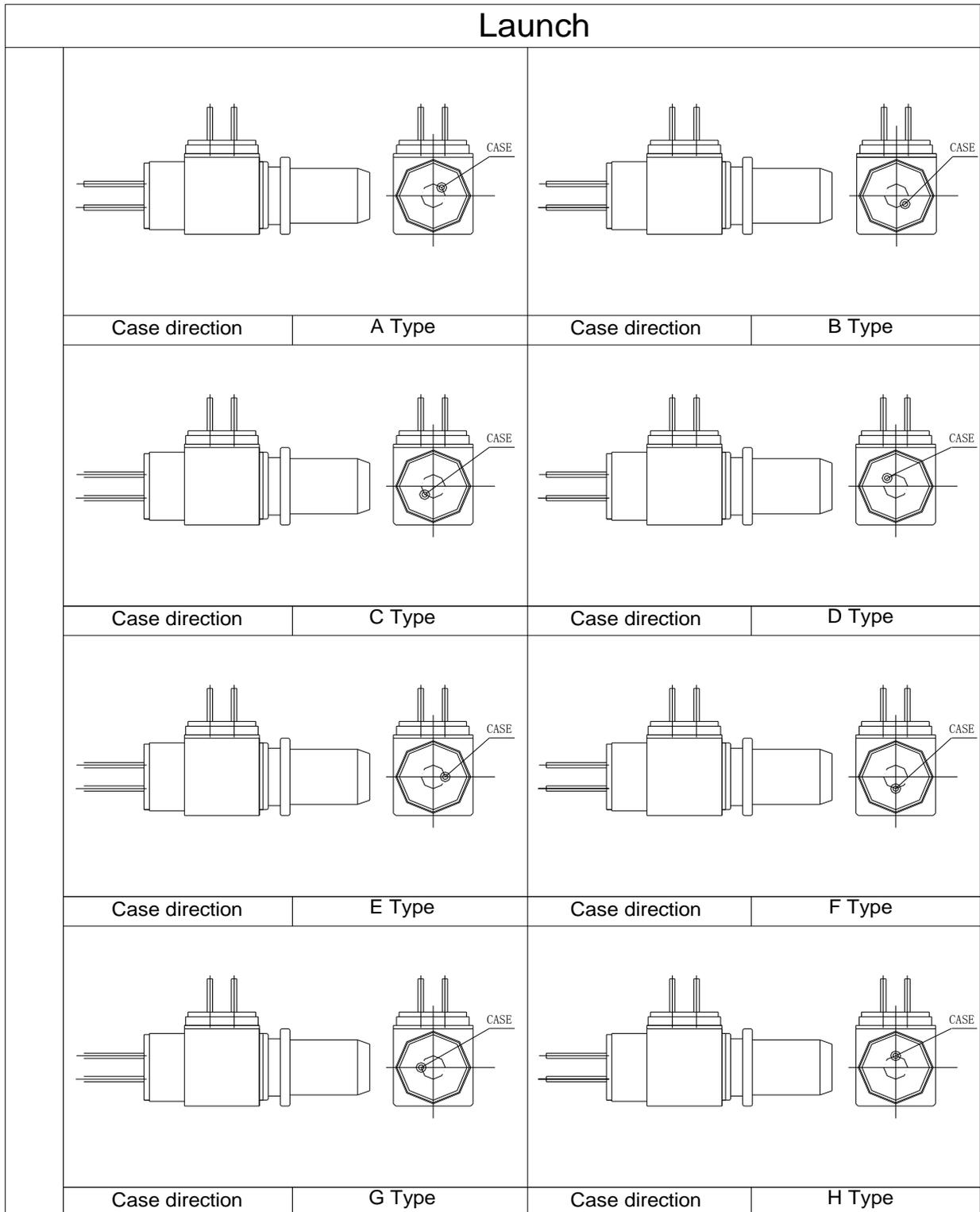


**Pin assignment**



Note2: PIN direction and laser mark can be customized.

**TX pin order code**\*Note3.4.5



Note3: This picture is for pluggable, receptacle BIDI chip PIN package direction's reference

Note4: This picture is suitable for RX Pin direction comparison .

Note5: 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
Case direction		Case direction	
Case direction		Case direction	
Case direction		Case direction	
Case direction		Case direction	

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

Part No	Laser type	transmitter/receiver
ETRRD3225KWT3FKGE	DFB	1310T/1577R

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

Code	Parameter	Detailed description							
A	Laser type	D=DFB LD							
B	Launch wavelength	3=1310nm							
C	Launch data rate	2=2.5Gbps							
D	Output power	25=1.6~2.99mW				xx=Customization			
E	TX pin type	Blank=LD-pin-2							
F	TX chip type	K=EO							
G	Receiver wavelength	W=1577nm							
H	Receiver data rate	T=10Gbps							
I	TIA voltage	3=3.3V							
J	RX pin type	F=APD-TIA-pin-F							
K	RX chip type	K=EO							
L	TX pin package direction	A	B	C	D	E	F	G	H
M	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
Va-1	Aura.gong	Zore.Zhao Kelly.cao		Initial	2018-07-03
Va-2	James.liu	Zore.Zhao Kelly.cao		1、 Change the test temperature conditions; 2、 Change TE; 3、 Increase the Vbr temperature coefficient	2019.11.8

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