

# ETRPWB2xQXB1xMDxxxG-x

BOSA with a same wavelength of transmitter & receiver, transmitter is a 2.5Gbps DWDM Laser, receiver is 2GHz PIN

## Features

- Coaxial Package
- Date rate up to 2.5Gbps
- Ultra small form-factor 8-pin
- Very low TEC power consumption
- Low threshold, high slope efficiency and high output power
- ◆ Operating case temperature:-5°C to +70°C
- Single-mode fiber pigtailed with SC, FC, ST or LC connector
- Optional with isolator
- Transmitter and receive the same wavelength
- RoHS compliant products available



## **Applications**

- High speed optical transmission system
- Fiber-optic transceiver
- Cable television system

## Absolute maximum ratings

Parameter	Symbol	Min.	Max.	Unit
Storage temperature	Tstg	-40	85	°C
Operating case temperature	Topr	-5	70	°C
Forward current(LD)	lf		120	mA
Reverse voltage(LD)	V <sub>RL</sub>		2	V
TEC voltage			1.8	V
TEC current			0.5	А
Lead soldering (temperature)/(time)			260/10	°C/Sec
Reverse voltage (analog PD)	Vrpd		20	V
Forward current (analog PD)	lfpd		10	mA

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



## **Electrical and optical characteristics - transmitter**

Parameter	Symbol	Min	Тур	Мах	Unit	Test Condition				
Laser operating temperature	Тор			55	°C					
Threshold current	lth		10	15	<b>m</b> (	<b>C</b> ₩,45℃				
	101		20	40	mA	<b>T=70</b> ℃				
Output optical power	Pf	0.2		0.99	mW	CW, If=Ith+20mA,45℃,				
Forward voltage	Vf		1.2	1.5	V	CW, If=Ith+20mA,45℃				
Series resistance	Rs		6	10	Ohms	lf=lth+15mA,45℃				
Kink current	lknk	80			mA,	Ith to 80mA				
Wavelength	λ	1288	1289	1290	nm	<b>C</b> W, If=Ith+20mA,45℃				
	Λ	.985	.985	.985		6W, II-III 2011A, 40 C				
Side mode suppression ratio	SMSR	35	40		dB	CW, If=Ith+20mA,45℃				
Monitor current	Imo	0.1		1.0	mA	CW,If=Ith+20mA				
Monitor dark current	ld			0.2	uA	Vrp=5V				
Resistance	Rth	9.5	10	10.5	ΚΩ	Tc=Tld=25℃				
(Standard 10k $\Omega$ @ 25°C thermistor)		0.0	10	10.0						
B constant of Rth	В	3800	3930	4000	К					
Thermistor current		10		200	uA	Tc=TId=25℃				
TEC current	ITec			0.5	А					
TEC voltage	VTec		+	1.8	V	Tc=Tld=25℃				
TEC power	PTec			0.5	W	10-110-25 C				
TEC capacity	ΔΤ	-90		50	°C					
Isolation	lso	30			dB					
Tracking error	TE	-1.5		1.5	dB	<b>APC,-5℃~+85℃</b>				
Rise/fall time	Tr/Tf			0.15	ns	Unfiltered ,20~80%				
Bandwidth	BW	2.5			GHz	CW,If=Ith+20mA,-3dB				

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

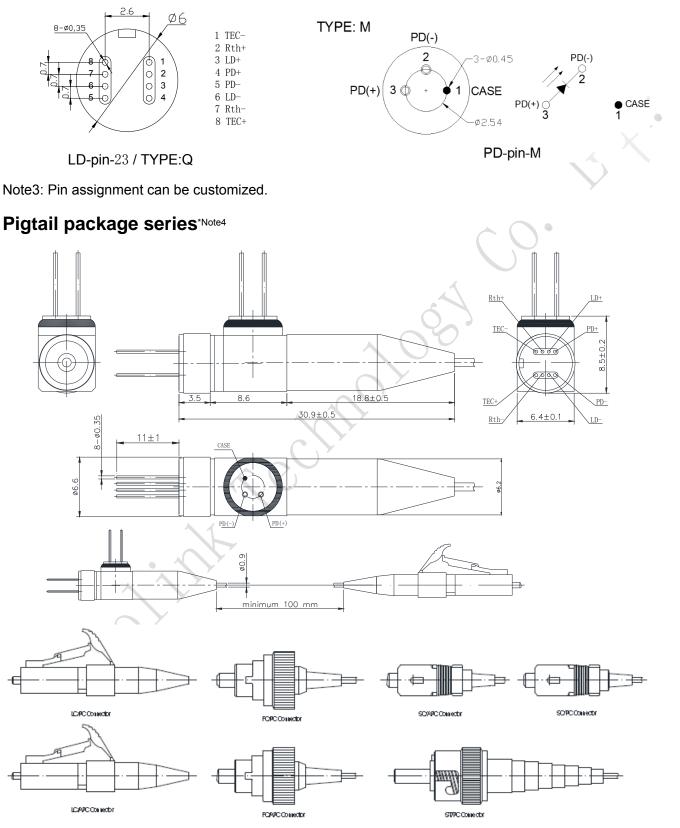
## Electrical / opical specifications - receiver

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Operating wavelength*Note2	2	1288.	1289.	1290.	nm	
	λ	985	985	985	nm	
Active area	Φ		75		μm	
-3dBm bandwidth	BW	2			GHz	VR = 5 V
Dark current	ld			1.0	nA	VR = 5 V
Responsibility	R		0.43		A/W	

\*Note2: It's the same wavelength as the Transmitter



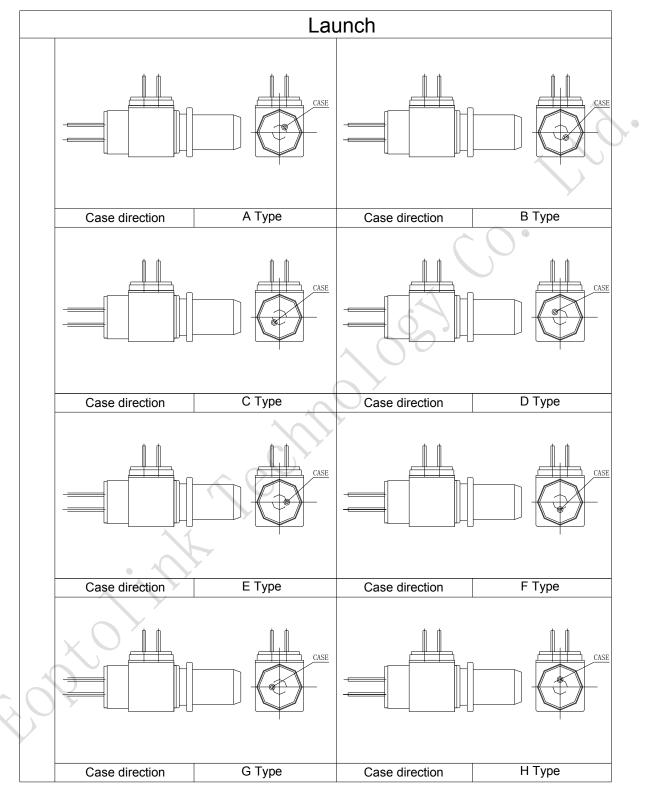
## Pin assignment\*Note3



Note4: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized. This image is for reference only.



## TX Pin order code\*Note4.5.6



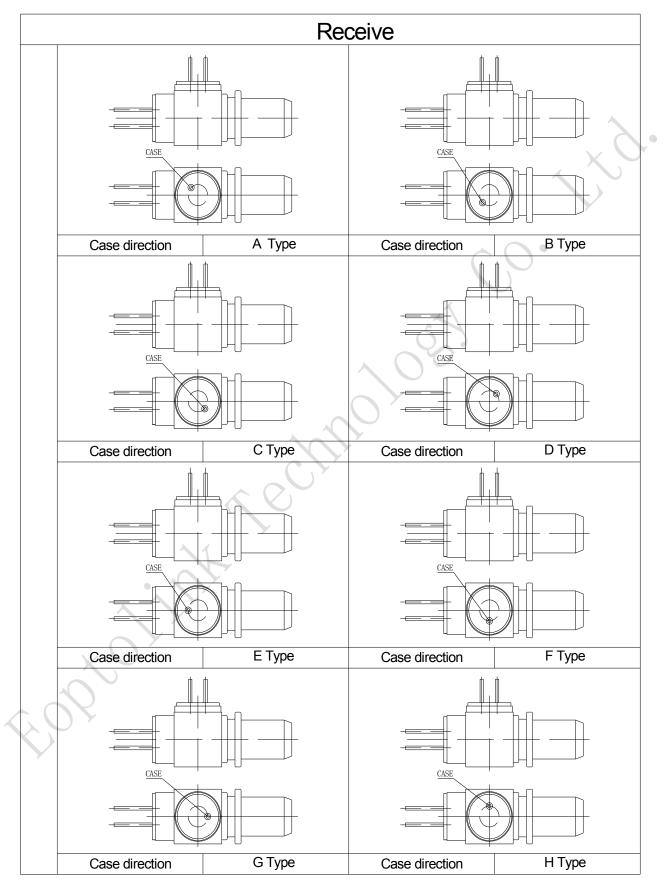
Note4:This picture is for pluggable, pigtail BIDI chip PIN package direction's reference.

Note5:This picture is suitable for RX  $\ensuremath{\mathsf{Pin}}$  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**





## Ordering information (Standard version) \*Note7

Part No	Laser type	TX chip type	Transmitter/Receiver
ETRPWB208QXB10MDLAGAG	DWDM	Х	1289.985T/1289.985R

Note7:For more ordering information, please refer to nomenclature or contact EOPTOLINK sales.

### Nomenclature

ETRP																		- 2
	А	В	С	D	Е	F	G	Н	Ι	J	Κ	L	Μ	Ν	0	Ρ	Q	R

Code	Parameter	Detailed D					escription				
А	Laser type					W=DV	VDM				
В	Launch wavelength					B=129	0nm				
С	Launch data rate					2=2.5	Gbps				
D	Output power		04=0.3~	0.49m	۱W		(	)8=0.5~	0.99mW		
E	TX Pin type					Q=LD-	pin-Q				
F	TX chip type					Х					
G	Receiver wavelength	B=1290nm									
Н	Active diameter	1=75um									
I	Bandwidth	0	≥2GHz			1≥2.5	GHz		2≥3.2GHz		
J	RX Pin type	M= PD-pin-M									
K	RX chip type	x=A~Z(No choice)									
	Connector	F=FC	F=FC/PC S=SC/PC					/PC	L=LC/PC		
L	Connector	FA=FC	C/APC	SA=	=SC	/APC	LA=LC	/APC	Blank=	None	
М	TX Pin package direction	А	A B C D				Е	F	G	Н	
Ν	RX Pin package direction	А	В	С		D	Е	F	G	Н	
0	RX TO insulated with shell	I	Blank= Ir	nsulat	ion		1	N=NO Ir	nsulation		
Р	Isolator		Blank=	=None	<u>}</u>			G=w	ith I		
Q	Fiber diameter	Blank=	SM whit	e N	1=M	M white	B=SN	I blue	Y=SM yellow		
R	Fibre length	Blanl	k=50cm		035	=35cm	100=1	l00cm	XXX=C	ustom	

## 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	George.zhong	Kelly.Cao Zore.Zhao		Initial version	2019-01-21

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## 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