

## ETRPWB2xQXB1xMDxxxG-x

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



### Features

- ◆ Coaxial Package
- ◆ Data 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)	If	---	120	mA
Reverse voltage(LD)	V <sub>RL</sub>	---	2	V
TEC voltage		---	1.8	V
TEC current		---	0.5	A
Lead soldering (temperature)/(time)	---	---	260/10	°C/Sec
Reverse voltage (analog PD)	V <sub>rpd</sub>		20	V
Forward current (analog PD)	I <sub>fpd</sub>		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°C)

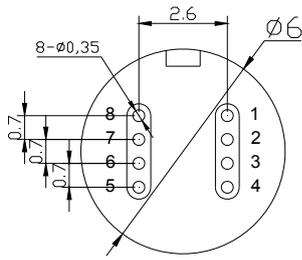
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Laser operating temperature	Top			55	°C	
Threshold current	Ith	---	10	15	mA	CW, 45°C
		---	20	40		T=70°C
Output optical power	Pf	0.2	---	0.99	mW	CW, If=Ith+20mA, 45°C,
Forward voltage	Vf	---	1.2	1.5	V	CW, If=Ith+20mA, 45°C
Series resistance	Rs	---	6	10	Ohms	If=Ith+15mA, 45°C
Kink current	Iknk	80	---	---	mA,	Ith to 80mA
Wavelength	$\lambda$	1288 .985	1289 .985	1290 .985	nm	CW, If=Ith+20mA, 45°C
Side mode suppression ratio	SMSR	35	40	---	dB	CW, If=Ith+20mA, 45°C
Monitor current	Imo	0.1	---	1.0	mA	CW, If=Ith+20mA
Monitor dark current	Id	---	---	0.2	uA	Vrp=5V
Resistance (Standard 10k $\Omega$ @ 25°C thermistor)	Rth	9.5	10	10.5	K $\Omega$	Tc=TId=25°C
B constant of Rth	B	3800	3930	4000	K	
Thermistor current		10	---	200	uA	Tc=TId=25°C
TEC current	ITec	---	---	0.5	A	Tc=TId=25°C
TEC voltage	VTec	---	---	1.8	V	
TEC power	PTec	---	---	0.5	W	
TEC capacity	$\Delta T$	-90	---	50	°C	
Isolation	Iso	30	--		dB	--
Tracking error	TE	-1.5	---	1.5	dB	APC, -5°C~+85°C
Rise/fall time	Tr/Tf	---	---	0.15	ns	Unfiltered ,20~80%
Bandwidth	BW	2.5	---	---	GHz	CW, If=Ith+20mA, -3dB

## Electrical / optical specifications - receiver

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Operating wavelength*Note2	$\lambda$	1288. 985	1289. 985	1290. 985	nm	---
Active area	$\Phi$	---	75	---	$\mu m$	---
-3dBm bandwidth	BW	2	---	---	GHz	VR = 5 V
Dark current	Id	---	---	1.0	nA	VR = 5 V
Responsibility	R	---	0.43	---	A/W	

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

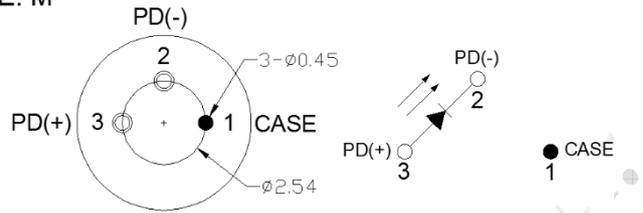
## Pin assignment\*Note3



- 1 TEC-
- 2 Rth+
- 3 LD+
- 4 PD+
- 5 PD-
- 6 LD-
- 7 Rth-
- 8 TEC+

LD-pin-23 / TYPE:Q

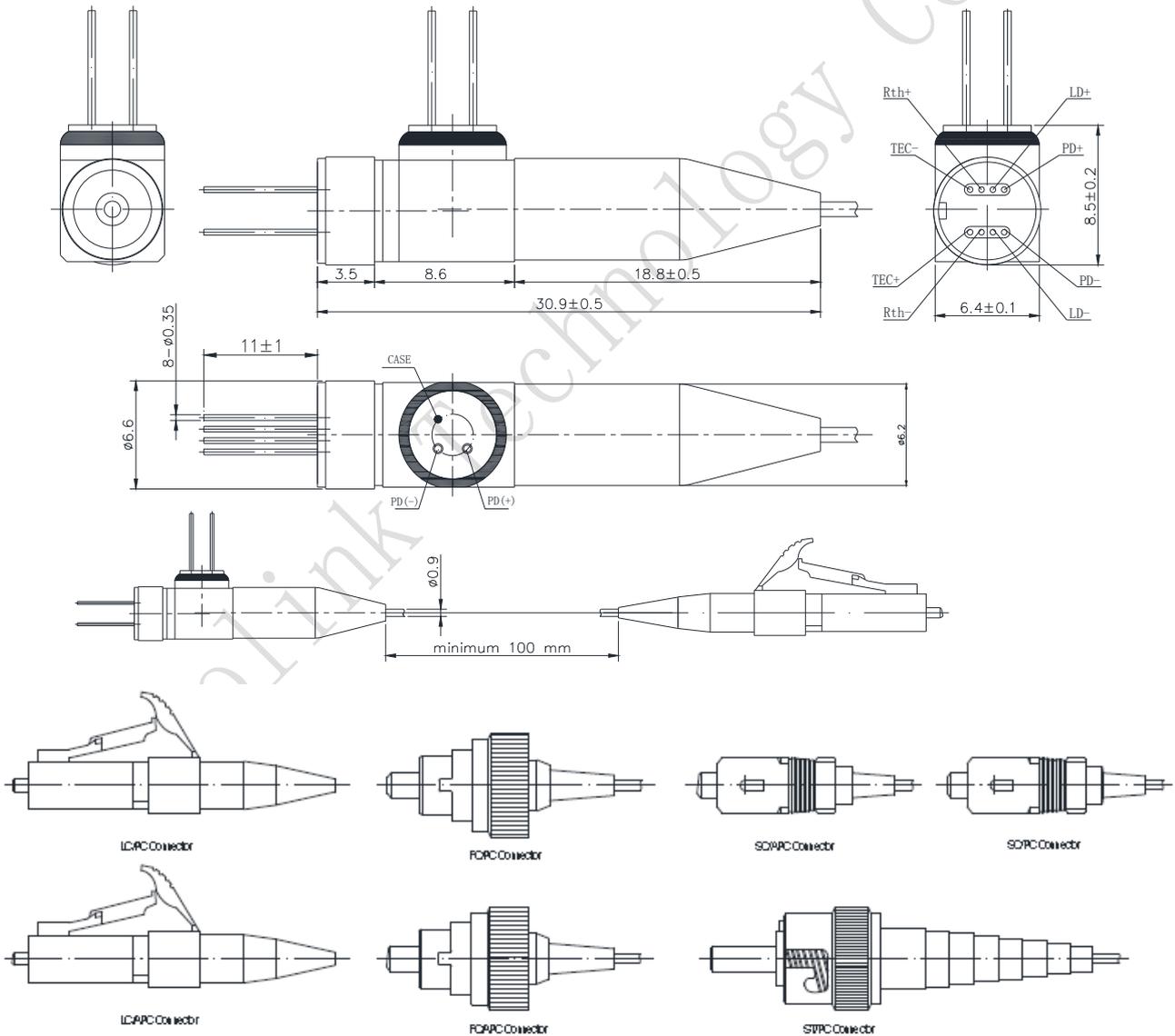
## TYPE: M



PD-pin-M

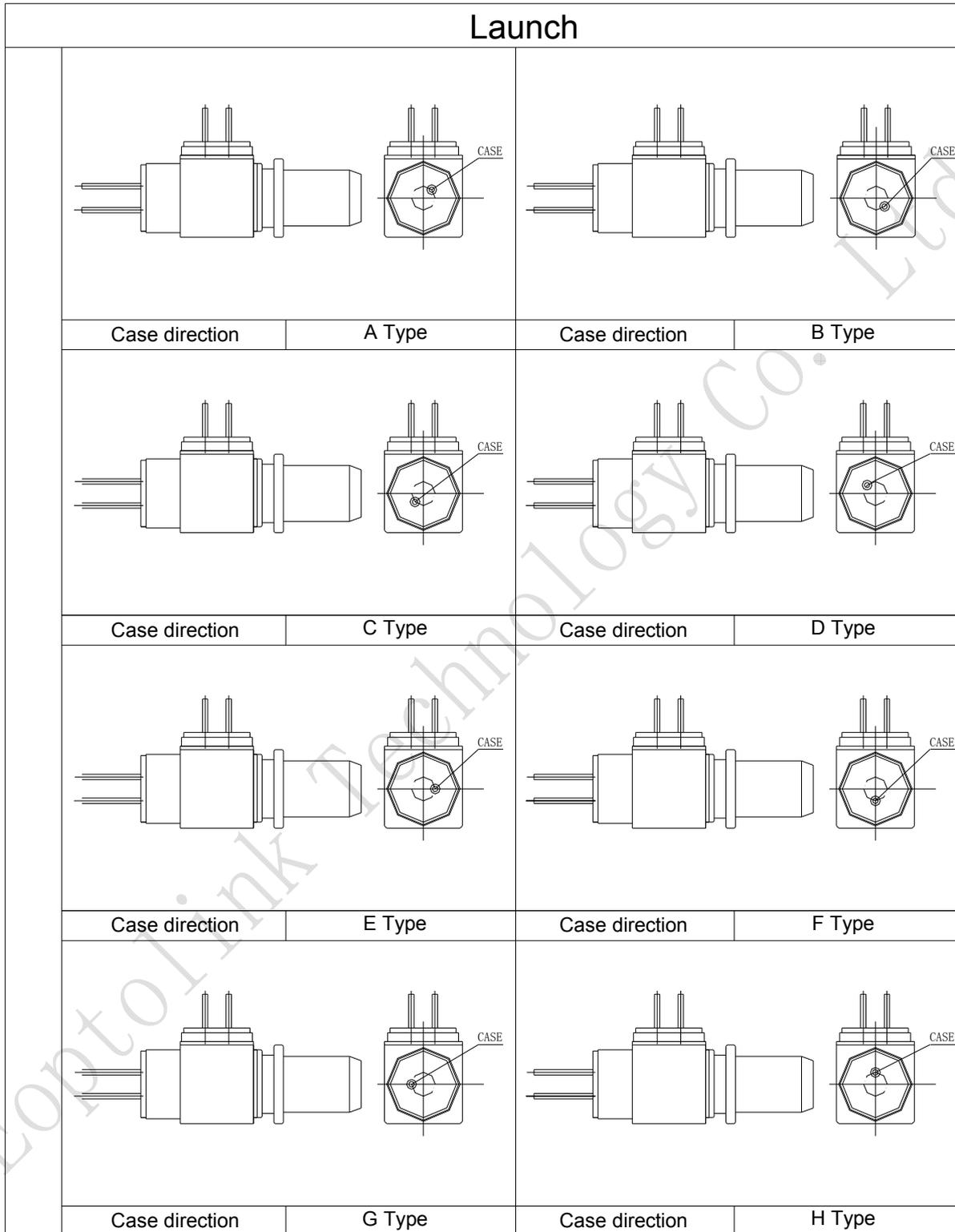
Note3: Pin assignment can be customized.

## Pigtail package series\*Note4



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 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	D Type
Case direction	F Type
Case direction	H Type



## 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

## Notice:

Eoptolink reserves the right to make changes or discontinue any product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the products are for illustrative purposes only. Eoptolink makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

## 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>