

1550TXDFB 1310RX PD BOSA 1.5GHz CATV 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 $+85^{\circ}\text{C}$
- ◆ Single-mode fiber pigtailed with SC FC ST or LC connector
- ◆ High channel isolation
- ◆ Low return loss
- ◆ Optical with Isolator



Applications:

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

Absolute Maximum Ratings:

Parameter	Symbol	Ratings	Unit
Storage Temperature	Tstg	$-40\sim+85$	$^{\circ}\text{C}$
Operating Case Temperature	Top	$-40\sim+85$	$^{\circ}\text{C}$
Operation Relative Humidity		85	%
Forward Current (LD)	IFD	150	mA
Monitor PD Reverse Voltage (LD)	VrL	2	V
Monitor PD Reverse Voltage (PD)	VrP	20	V
Monitor PD Reverse Current (PD)	IrP	2	mA
PD Forward Current	I_{FD}	10	mA
PD Reverse Voltage	Vpd	50	V
Soldering Temperature (<10s)	Stemp	260	$^{\circ}\text{C}$

Electrical and Optical Characteristics – Transmitter:

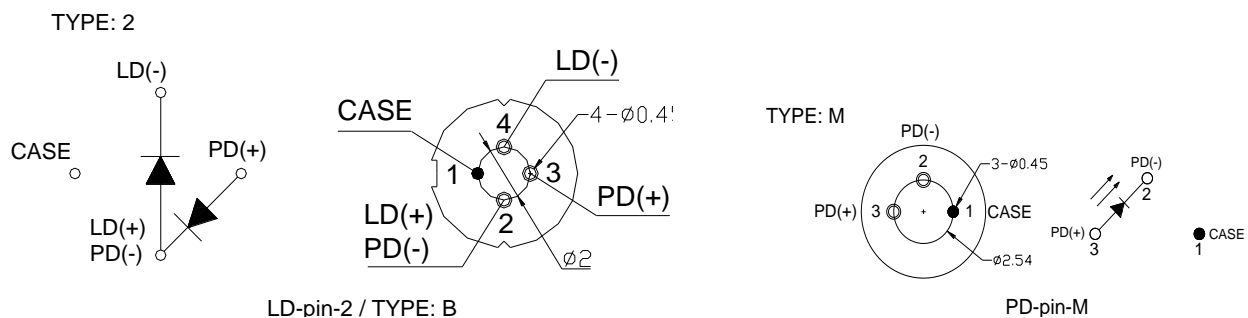
($I_f = I_{th} + 20\text{mA}$, $P_f = 1\text{mW}$, SMF (9.5/125 μm), $T_c = +25 \pm 2^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I_{th}	CW	—	8	15	mA
Output Power (After coupled)	P_f	CW, $I_f = I_{th} + 20\text{mA}$	0.5	1	2	mW
Operating Voltage	V_f	CW, $T_c = -40 \sim +85^\circ\text{C}$	—	—	1.6	V
Slope Efficiency	S_e	CW, Average	0.025	0.05	0.1	mW/mA
Peak Wavelength	λ_p	CW	1530	1550	1570	nm
Rise and Fall Time	t_r, t_f	$I_b = I_{th}$, $PL = 1.5\text{mW}$, 20~80%	—	—	0.15	ns
Monitor Current (PD)	I_m	CW, $PL = 1.5\text{mW}$, $V_{RD} = 1\text{V}$	100	200	—	μA
Dark Current (PD)	I_d	$V_{RD} = 5\text{V}$	—	—	10	nA
Capacitance (PD)	C_t	$V_{RD} = 10\text{V}$, $f = 1\text{MHz}$	—	10	20	pF
Connector Repeatability	—	—	-1	—	1	dB
Wavelength Isolation	—	—	15	—	—	dB
Optical Isolation	—	Single Stage	30	—	—	dB
	—	Dual Stage	40	—	—	

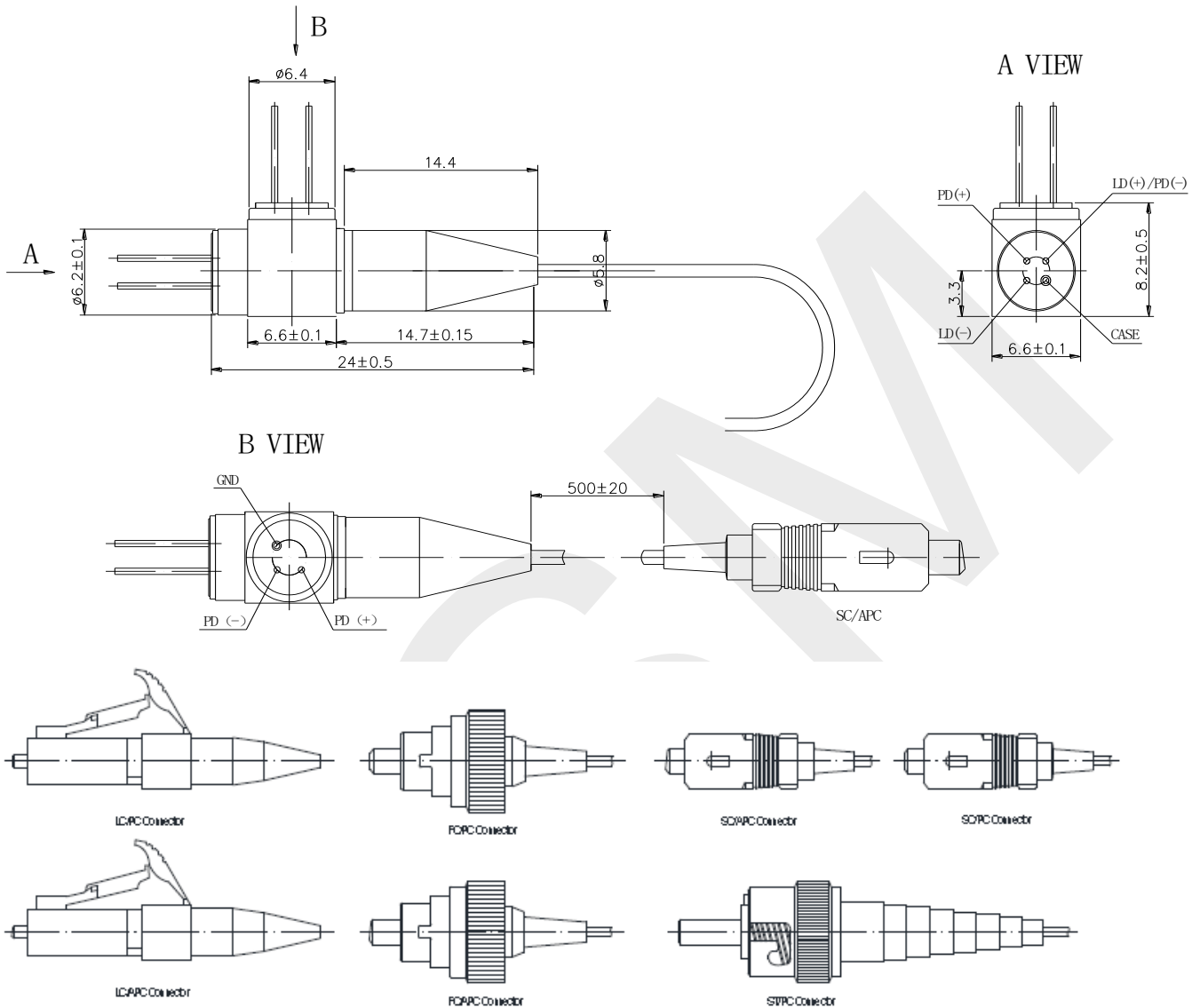
Electrical / Optical Specifications – Receiver:

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Detection Wavelength Range	λ	-	1260	—	1575	nm
Active Diameter	DA	-	—	75	—	μm
Responsivity	R	$V_R = -5\text{V}$ @ 1310nm	—	0.80	—	A/W
		$V_R = -5\text{V}$ @ 1550nm	—	0.85	—	A/W
Return Loss	RL	—	—	-50	—	dB
Dark Current	I_d	$V_R = 5\text{V}$	—	0.1	1	nA
Capacitance	C_p	$V_R = 5\text{V}$	—	0.6	0.7	pF
Bandwidth	BW	$V_R = 5\text{V}$	2	—	—	GHz

Pin Assignment:

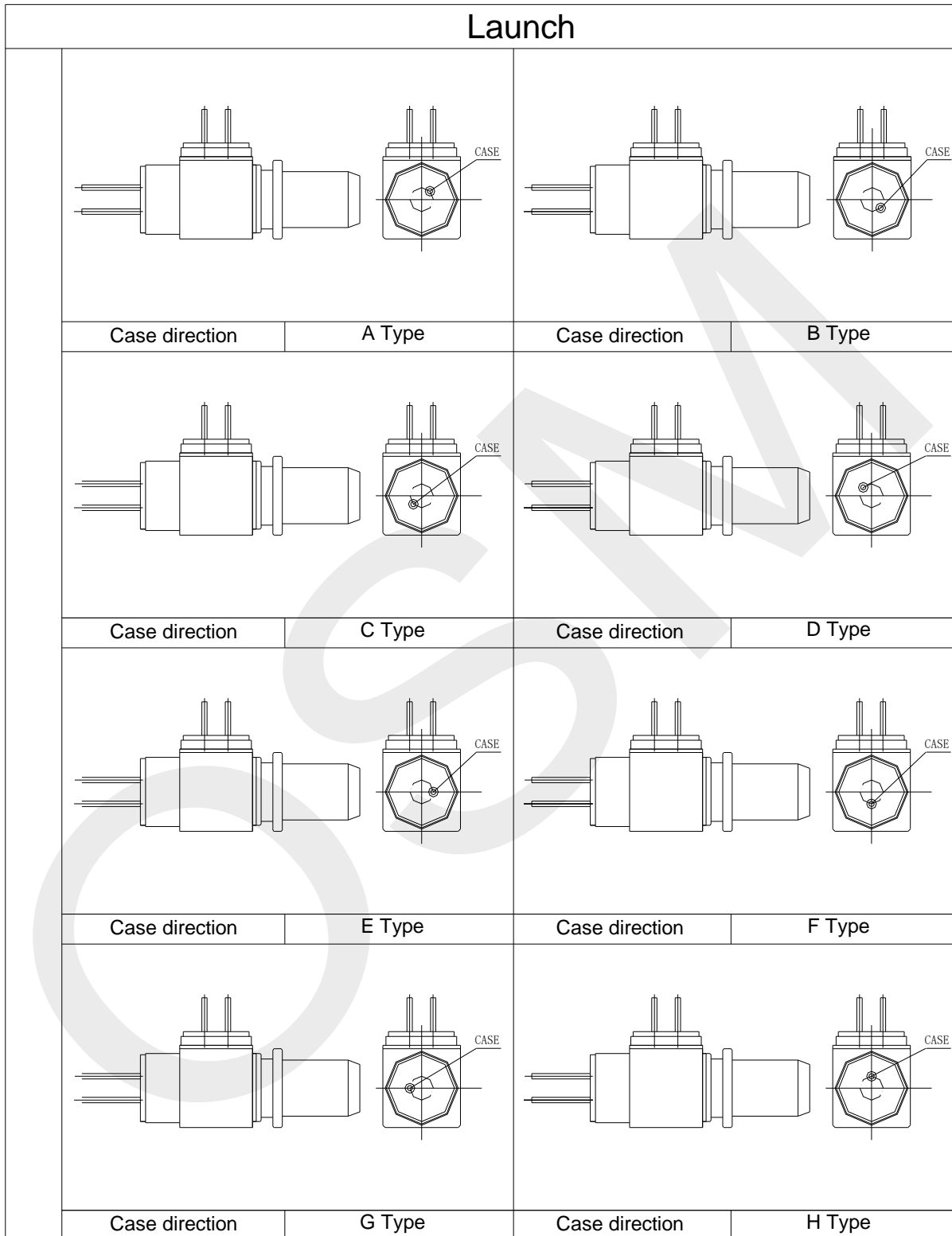


Package Dimension: *Note1



*Note1: 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: *Note2.3.4



Note2、 This picture is for pluggable, pigtail BIDI chip PIN package direction's reference.

Note3、 This picture is suitable for RX Pin direction comparison .

Note4、 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

Nomenclature:

OSMBIDI-

A B C D E F G H I J K L M N O

Code	Parameter	Detailed Description							
A	Laser Type	D=DFB LD							
B	Launch Wavelength	5=1550nm							
C	Launch Data rate	1=1.25G							
D	Output Power	08=0.5~0.99mW				15=1~1.59mW			
E	TX Pin Type	2=LD-pin-2							
F	Receiver Wavelength	3=1310nm							
G	Active Diameter	1=75um							
H	Bandwidth	0≤1.5GHz							
I	RX Pin Type	M= pin-M							
G	Connector	SA=SC/APC							
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	RX TO Insulated With Shell	Blank= Insulation				N=NO Insulation			
N	Isolator	Blank=None			G=with I		G2=with II		
O	Fiber Length	Blank=50cm		035=35cm		100=100cm		XXX=Custom	

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.

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