



Technical Specification
of
Bi-directional Transceiver Devices
(for 1.25Gbps 1.3/1.49 μ m transmission applications)
SXT4730-S (1.3 μ m(T)/1.49 μ m(R))



1. General

SXT4730-S is a bi-directional transceiver device suitable for 1.25Gbps simplex fiber optic bi-directional transmission applications.

A laser diode and a monitoring photodiode as transmitter components and a detector photodiode and a pre-Amplifier as receiver components are mounted into a package integrated with a single mode fiber pigtail.

2. Package dimension and pin assignment

(See attached appendix.)

3. Absolute maximum ratings (Tc=25°C, unless otherwise noted.)

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+90	°C
Operating case temperature	Top	-40~+85	°C
Forward current (LD)	IfL	150	mA
Reverse voltage (LD)	VrL	2	V
Reverse voltage (monitoring PD)	VrMP	15	V
Reverse current (monitoring PD)	IrMP	2	mA
Reverse voltage (detector PD)	VrDP	5	V
Reverse current (detector PD)	IrDP	2	mA
Supply Voltage (TIA)	Vdd	4	V
Soldering temperature (<10s)	Stemp	260	°C

4. Electrical and optical characteristics

4-1. Transmitter (Pf=3dBm, Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold current	Ith	CW	—	4	15	mA
		CW, Tc=-40~+85°C	—	—	40	
Operating output power	Pf	CW, If=Ith+20mA	1	3	6	dBm
		CW, If=Ith+20mA, Tc=-40~+85°C	-2	—	—	
Operating voltage	Vf	CW, Tc=-40~+85°C	—	—	1.8	V
Central wavelength	λ_c	CW	1280	1310	1330	nm
		CW, Tc=-40~+85°C	1270	—	1360	
Spectral width	$\Delta\lambda$	CW, Tc=-40~+85°C (RMS)	—	1.5	2.5	nm
Tracking error	ΔPf	Im hold(@Pf=3dBm(25°C)) CW, Tc=-40~+85°C	-1.5	—	1.5	dB
Monitor current	Im	CW, Vr=5V, Tc=-40~+85°C	50	—	—	μA
Monitor dark current	Id	VrP=5V	—	1	10	nA

4-2. Receiver (Vdd=3.3V, Tc=+25°C, unless otherwise noted.)

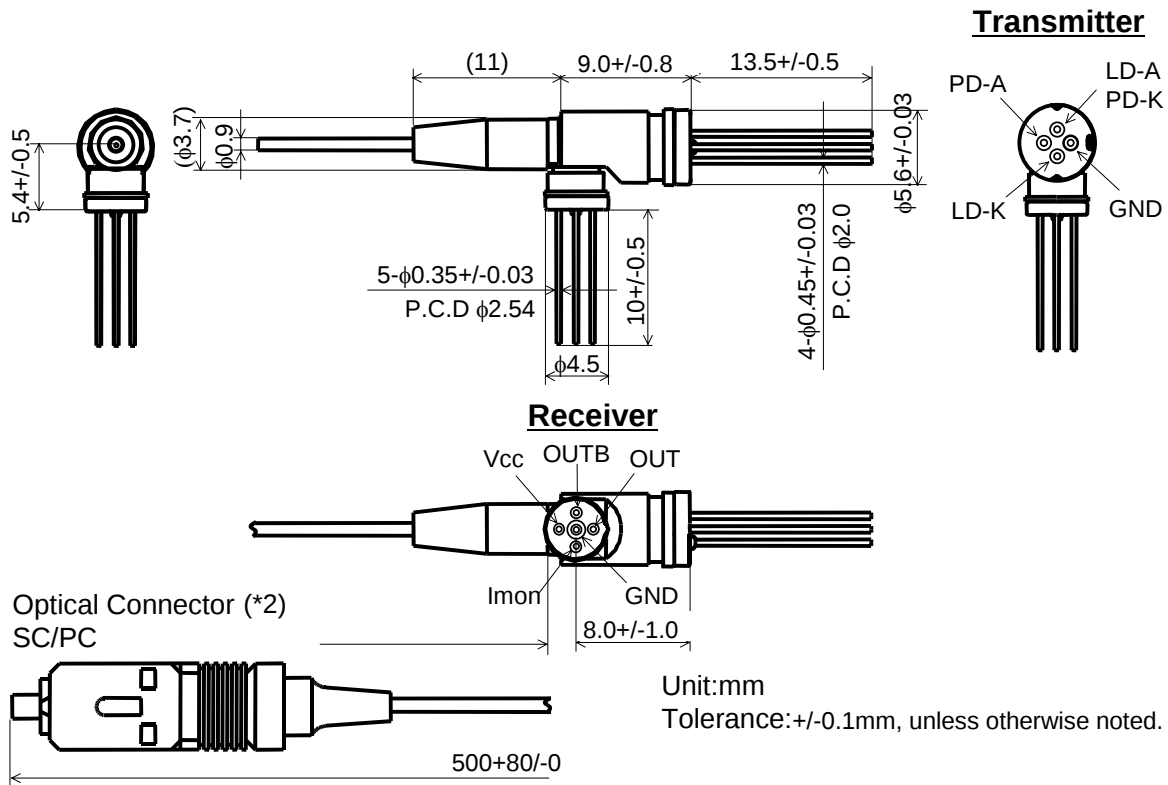
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Sensitivity	Smin	BER=10 ⁻¹² Pf=3dBm(ave.), λ =1480~1500nm (*1)	—	—	-25	dBm
Overload	Smax	BER=10 ⁻¹² Pf=3dBm(ave.), λ =1480~1500nm (*1)	-4	—	—	dBm
TIA Supply current	Idd	Vee GND, Vdd=3.3V	—	—	60	mA
Optical return loss	ORL	λ =1490nm	20	—	—	dB

Note.*1 Measured with the standard equipment of SEI

5. Precaution

- (1) Radiation emitted by laser devices can be dangerous to the eyes. Avoid eye or skin exposure to direct or scattered radiation.
- (2) 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.
- (3) The stress to the fiber pigtail may cause the damage on the performance. The fiber pigtail may snap off by dropping the module.
- (4) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.
- (5) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

Outline drawings



Note:*2. IEC and JIS compliant. Detailed design not specified in the IEC and JIS standards is a subject to change without notice.

Symbol	Function	Supply voltage
OUT	Data output	-
OUTB	Inverted Data Output	-
Vcc	Power pin.	+3.3V
Mon.	For SEI internal use.	+3.3V
GND	Ground pin.	-

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For More Information

U.S.A.

ExceLight Communications Inc.

4021 Stirrup Creek Drive, Suite 200, Durham NC, 27703

U.S.A.

Tel. (919) 361-1600

Fax. (919) 361-1619

E-mail: info@excelight.com

URL: <http://www.excelight.com>

Europe

Sumitomo Electric Europe Ltd.

220 Centennial Park, Centennial Avenue, Elstree, Herts, WD6 3SL

United Kingdom

Tel. (020) 8953-8118

Fax. (020) 8207-5950

URL: <http://www.sumielelectric.com>

Japan

Sumitomo Electric Industries, Ltd. (Opto-electronic Products Sales Dept.)

3-12, Moto-Akasaka 1-chome, Minato-ku Tokyo, 107-8468

Japan

Tel. (03) 3423-5031

Fax. (03) 3423-5247

E-mail: product_info@ppd.sei.co.jp

URL: http://www.sei.co.jp/Electro-optic/index_e.html

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HUW0324056-01B	Aug./08/03	Changed Pf specifications.	M. Furumai	H. Koseki T. Kounosu	M. Yoshimura
HUW0324056-01C	Apr./22/05	Changed outline drawings. Added pin assignment table.	M. Furumai	T. Kounosu	M. Yoshimura