

ETRRBxFxxBKxF3JKXEHGGN-3

With 25G EML laser diode and 25G APD-TIA transmission

Applications

- ◆ Case operating temperature range: 0 to 70°C
- ◆ BOX package for Tx
- ◆ high slope efficiency and high output power
- ◆ High sensitive APD-TIA
- ◆ ROHS compliant products available

Applications

- ◆ 50G PAM4 application

Absolute maximum ratings(Tc=25°C,unless otherwise noted) ^{*Note1}

Parameter	Symbol	Min	Max	Unit
Storage temperature	T _{ST}	-40	85	°C
Operating temperature	T _{OP}	0	70	°C
Storage and operating humidity	RH	5	85	%
LD reverse voltage	V _{RL}	--	2	V
LD forward current	I _{FL}	--	200	mA
APD supply voltage	V _{APD}	--	V _{br}	V
APD reverse current	I _{RD}	--	1	mA
TIA supply voltage	V _{CC}	-0.5	4	V

*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 Tc=25°C)

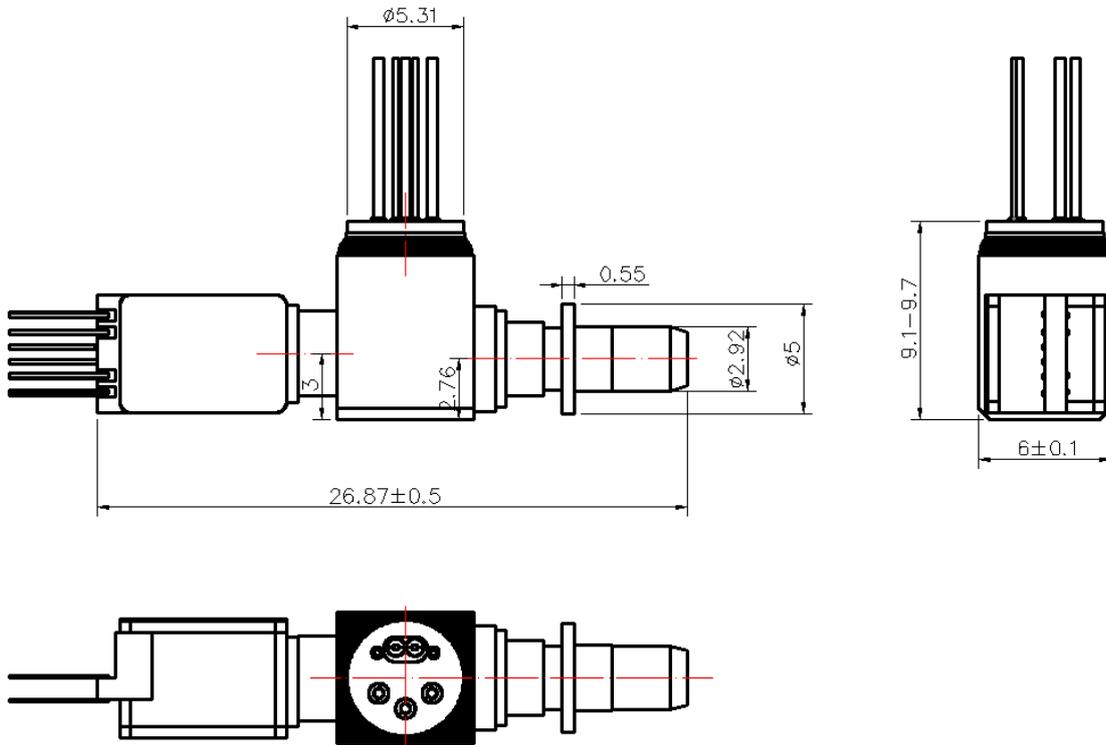
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Threshold current	I _{th}	-	15	30	mA	DC, Tc=52.5°C
LD Forward current	I _f	-	66		mA	CW-
Center wavelength	λ _c	1292.21	1294.40	1296.59	nm	
		1306.29	1308.24	1310.19		
Side-mode suppression ratio	SMSR	30	-	-	dB	DC, Tc=52.5°C, I=66mA
Operating output power	P _f	1.2	-	2.5	mW	CW, I _{op} =40mA, V _{EA} =-0V, TEC=50°C
LD Forward voltage	V _f	-	1.3	2.0	V	DC, Tc=52.5°C, I=66mA

Receiver optical and electrical characteristics

(Unless specified else, the specifications below are defined at Tc=25°C)

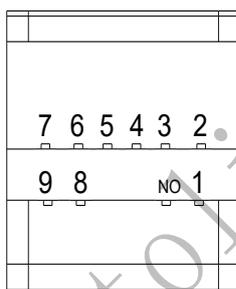
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply voltage	V _{cc}	2.9	3.3	3.5	V	
TIA supply current	I _{cc}	-	58	70	mA	V _{cc} =3.3V
Breakdown voltage	V _{br}	16	-	21	V	I _d =100uA
Operating voltage	V _{op}	15		20	V	-
Responsivity	I _{op}	19-	-	-	uA	V _{br} -3V, P _{in} =-20dBm
Receiving wavelength	λ	1306.29	1308.24	1310.19	nm	
		1292.21	1294.40	1296.59		
Optical sensitivity	Sen(EOL)	-	-	-15.1	dBm	@BER2.4E-4
	Sen(BOL)			--15.1	dBm	@BER2.4E-5
Optical return loss tolerance	RL	-	-	-26	dB	

Package dimension*Note2



Note2: PIN direction and laser mark can be customized.

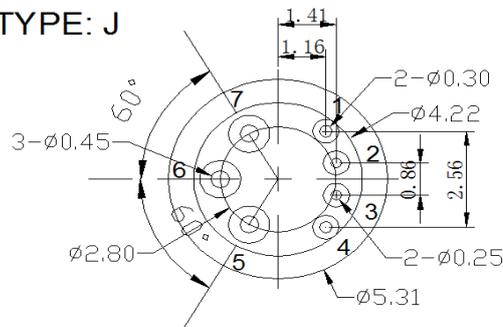
Pin assignment



LD-pin-BOX

- 1 TEC-
- 2 TEC+
- 3 GND
- 4 RF
- 5 GND
- 6 PD+
- 7 LD+
- 8 Thermistor
- 9 GND

TYPE: J



APD-pin-J

- 1 GND
- 2 Dout (-)
- 3 Dout (+)
- 4 GND
- 5 Vcc
- 6 VGC
- 7 Vapd

Ordering information (standard version) ^{*Note7}

Part No	Laser type	transmitter/receiver
ETRRBL0F25BKL3F3JKXEHGGM-3	BOX	1295T/1309R
ETRRBL3F25BKL0F3JKXEHGGM-3	BOX	1309T/1295R

Note7: 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 N O P Q R

Code	Parameter	Detailed description
A	Laser type	B=BOX
B	Launch wavelength	L0=1295.56nm L3=1309.14nm
C	Launch data rate	F=50Gbps
D	Output power	25= 0.8-2.5mw
E	TX pin type	B=LD-pin-BOX
F	TX chip type	K=Eoptolink
G	Receiver wavelength	L0=1295.56nm L3=1309.14nm
H	Receiver data rate	F=50Gbps
I	TIA voltage	3=3.3V
J	RX pin type	J=APD-TIA-pin-J
K	RX chip type	K=Eoptolink
L	Connector	X=LC connector
M	TX pin package direction	E
N	RX pin package direction	H
O	Isolator	G=with I
P	Insulation	Blank= Routine receptacle
Q	TIA model	GN=GN1089
R	Programme	Blank= None X=1-9

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

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<http://www.eoptolink.com>

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest

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documentation.

Revision history

Verision	Initiated	Reviewed	Approved	Revision history	Release date
Va-1	Vincent	Zore	James	The initial version	2020-05-12
Va-2	Vincent	Zore	James	Add range of total high	2020-08-03
Va-3	Vincent	Zore	James	Delete pin order code and add program detailed description	2020-11-03

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