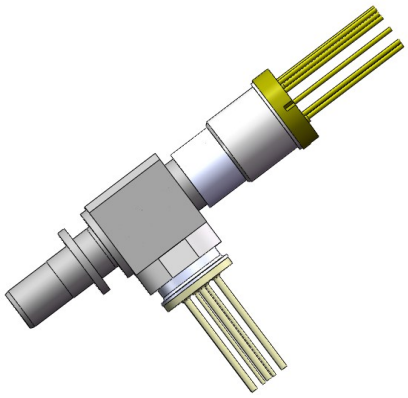
ETRRExF25VKxF3JKXGHGIGR-1

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



Features

- Case operating temperature range: -40 to 85℃
- High slope efficiency and high output power
- High sensitive APD-TIA
- ROHS compliant products available

Applications

- 50G PAM4 application

Absolute maximum ratings(Tc=25℃,unless otherwise noted) *Note1

Parameter	Symbol	Min	Max	Unit
Storage temperature	T_{ST}	-40	85	℃
Operating temperature	T_{OP}	-40	85	℃
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}	-	Vbr	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℃)

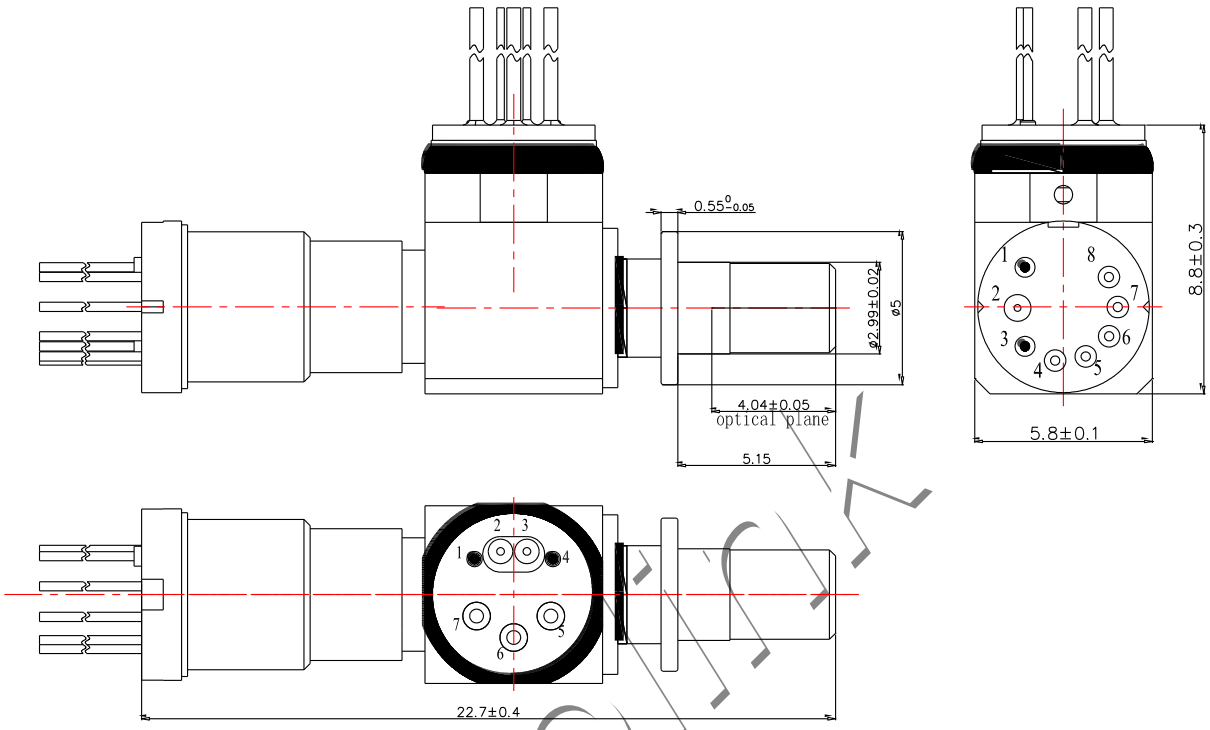
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Threshold current	I_{th}	-	15	30	mA	TEC =53℃
Laser output optical power	Pf	4	-	-	mW	Iop=85mA、TEC=53℃、
LD Forward voltage	Vf	-	1.3	2.0	V	Iop=85mA、TEC=53℃
Center wavelength	λ_C	1281	-	1297	nm	Tc=-40~85℃
		1306	-	1322		
Side-mode suppression ratio	SMSR	35	-	-	dB	CW
Tracking Error	TE	-1.5	-	+1.5	dB	Tc=-40~85℃

Receiver optical and electrical characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply voltage	Vcc	2.9	3.3	3.5	V	
TIA supply current	Icc	-	58	70	mA	Vcc=3.3V
Breakdown voltage	Vbr	22	-	32	V	Id=100uA
Breakdown voltage Temperature Coefficient	dVbr/ dT	-	13	-	mV/℃	Tc=-40~85℃
Responsivity	R	5	7	-	A/W	Vbr-3V,Pin=-20dBm
Dark current	Id	-	-	1500	nA	Vbr-3V
Receiving wavelength	λ	1281	-	1297	nm	
		1306	-	1322		
Optical sensitivity(OMA)	Sen	-	-	-15.1	dBm	
Receiver reflectance	R	-	-	-26	dB	

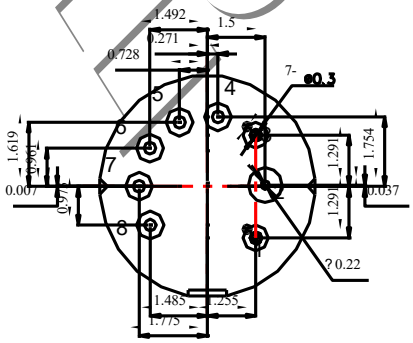
Package dimension*Note2



Note2: PIN direction and laser mark can be customized.

Pin assignment

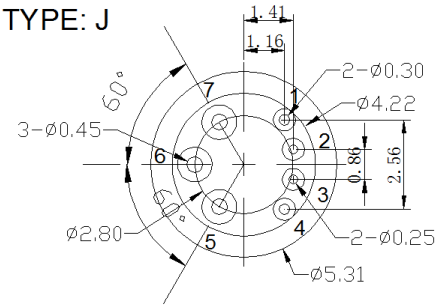
TYPE: 22



1 GND
2 RF
3 GND
4 TEC+
5 TEC−
6 NC
7 Bias
8 Therm

LD-pin-22/ TYPE:V

TYPE: J



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

APD-pin-J

Ordering information (standard version) *Note3

Part No	Laser type	transmitter/receiver
ETRREBF25VKCF3JKXGHGIGR-1	EML	1290T/1310R
ETRRECF25VKBF3JKXGHGIGR-1	EML	1310T/1290R

Note3: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

Code	Parameter	Detailed description	
A	Laser type	E=EML	
B	Launch wavelength	B=1290nm	C=1310nm
C	Launch data rate	F=50Gbps	
D	Output power	25⩾4mw	
E	TX pin type	V= LD-pin-22	
F	TX chip type	K=Eoptolink	
G	Receiver wavelength	C=1310nm	B=1290nm
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	G	
N	RX pin package direction	H	
O	Isolator	G=with I	
P	Insulation	Blank= Routine receptacle	
Q	TIA model	GR=GN1700	

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.

Revision history

Verision	Initiated	Reviewed	Approved	Revision history	Release date
Va-1	Marco	James	Vincent	Initial	2023.07.29

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