

Coaxial Analog 1310&1550(LD) WDM Module with Pigtail

Description

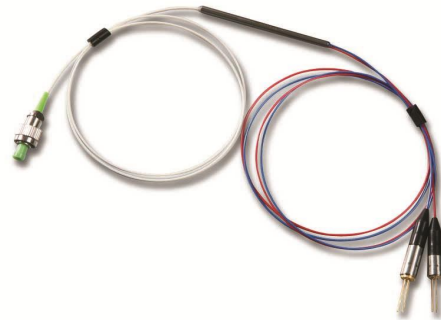
LM52xx series Coaxial Laser use InGaAsP/InP MQW chip. The FP with an InGaAs monitor PD, it can be used with appropriate feedback control circuitry to set optimal power level for each FP lasers, As the current changed above the threshold, the optical power will change accordingly.

There are a 1310nm and a 1550nm FP-LDs and one connectors for this module, they are connected by a 1310/1550 WDM.

It is widely used in CDMA/WDM system. The laser diode is mounted into a coaxial package with single mode fiber pigtail. FC/UPC, FC/APC, SC/UPC or SC/APC connector can be selected.

Features

- 1310 nm transmitter with uncooled FP-LD
- 1550 nm transmitter with uncooled FP-LD
- Low noise, low distortion, high linearity
- Coaxial Pigtail Package with WDM
- operating temperature range: -20°C to 80°C



Application

- CDMA/GSM transmission system
- WDM system
- Other analog transmission system

Absolute Maximum Ratings^[1]

Parameter	Symbol	Min	Max	Units	Notes
Reverse Voltage(LD)	V_{RL}	---	2	V	
Forward Current(LD)	I_{FL}	---	120	mA	
Reverse Voltage(MPD)	V_{RMP}	---	15	V	
Forward Current(MPD)	I_{FMP}	---	2	mA	
Operating Temperature	T_C	-20	+80	°C	Case temperature
Storage Temperature	T_{STG}	-40	+85	°C	Ambient temperature
Relative Humidity	RH	---	80	%	
Lead Soldering Temperature/Time	T_S	---	260/10	°C/S	
Fiber Yield Strength		---	1	kgf	
Fiber Bend Radius		30	---	mm	

Note 1: Beyond the scope of absolute maximum ratings can cause permanent damage to the device. If it has been a long time to use the device in the absolute maximum ratings may affect device reliability.

Electric and Optical Characteristics

 (All measurements are at Case temperature of 25°C±3°C, V_{RMP}=3V@1310nm unless stated otherwise.)

Parameter	Symbol	Min	Typical	Max	Units	Notes
Port: 1310nm						
Fiber Output Power ^[1]	P _o	1.8	---	3.6	mW	CW, I _f =I _{th} +20mA@1310nm
Slope Efficiency	η	0.09	---	0.18	W/A	CW, λ=1310nm
Center Wavelength	λ	1290	1310	1330	nm	CW, I _f =I _{th} +20mA
Spectral Width(RMS -20dB)	Δλ	---	2	5	nm	CW, I _f =I _{th} +20mA
Port: 1550nm						
Fiber Output Power ^[1]	P _o	1.4	---	3.6	mW	CW, I _f =I _{th} +20mA@1550nm
Slope Efficiency	η	0.07	---	0.18	W/A	CW, λ=1550nm
Center Wavelength	λ	1530	1550	1570	nm	CW, I _f =I _{th} +20mA
Spectral Width(RMS-20dB)	Δλ	---	2	5	nm	CW, I _f =I _{th} +20mA
Common Characteristics						
Modulation Bandwidth	BW	2.5	---	---	GHz	-3dB
		5.0	---	---		-3dB, with FPC
Tracking Error	TE	-1.5	---	1.5	dB	I _M hold@P _o =2mW, 25°C, CW, T _c = -20 ~+80°C
Optical Isolation	ISO	30	---	---	dB	With Single Stage Isolator
Return Loss	RL	40	---	---	dB	FC/UPC connector
Threshold Current	I _{th}	---	8	15	mA	CW
Operating Voltage	V _F	---	1.2	1.6	V	CW
Monitor Current	I _M	100	---	1500	μA	CW, I _f =I _{th} +20mA, V _{RMP} =1V
Monitor Dark Current	I _D	---	---	100	nA	CW, V _{RMP} =5V
Photodiode Capacitance	C	---	---	10	pF	V _{RMP} =5V, f=1MHz
3rd Order Inter-modulation Distortion	IMD3	---	-65	-60	dBc	[2], CW
		---	---	-55	dBc	[3], CW
Relative Intensity Noise	RIN	---	---	-130	dB/Hz	CW
Pigtail Length	L	400	500	600	mm	Outline Dimensions [X]

Notes:[1]: For 2.5~3.6mW products by increasing the operating current to achieve 4mW products.

 [2]: Test conditions: P_f =2.0 mW, T_c=25°C, 2 channel modulated carriers 800MHz and 801MHz, Zero link loss, RF 0dBm input and output tested.

 [3] Test conditions: P_f =2.0 mW, T_c=25°C, 2 channel modulated carriers 1.9GHz and 1.901GHz, Zero link loss, OMI=20% tested.

Special Optical Characteristics

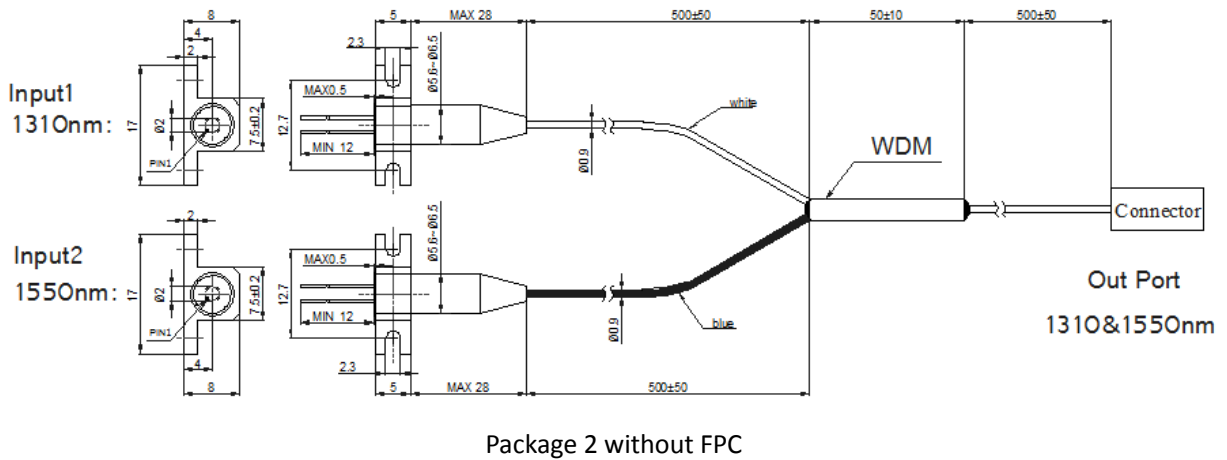
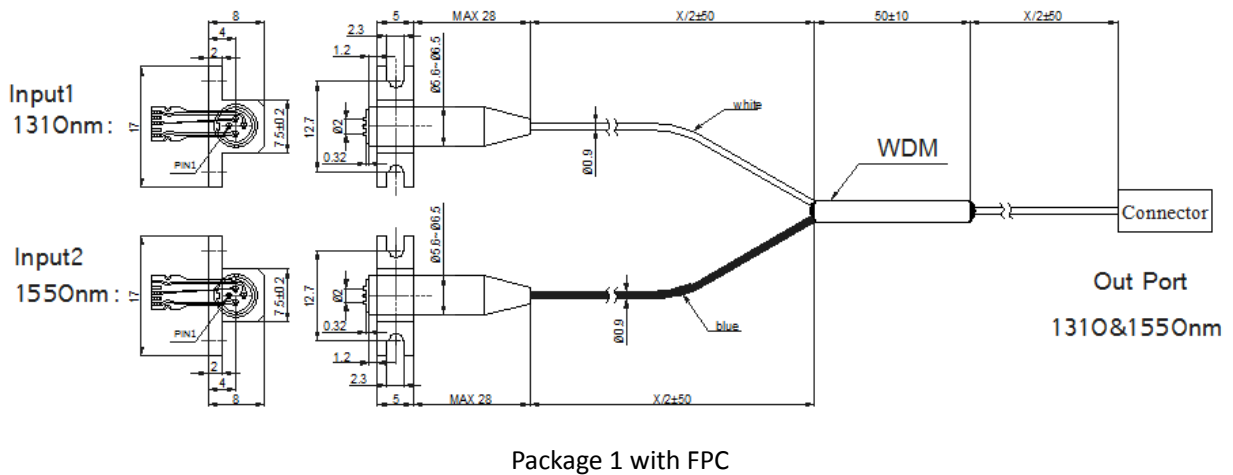
Passive Optical Device	Dimensions	Parameter	Value	Note
WDM	Φ3X40~60mm	Isolation	15dB	Input1→Input2@1550nm
			15dB	Input2→Input1@1310nm

Pigtail Parameters

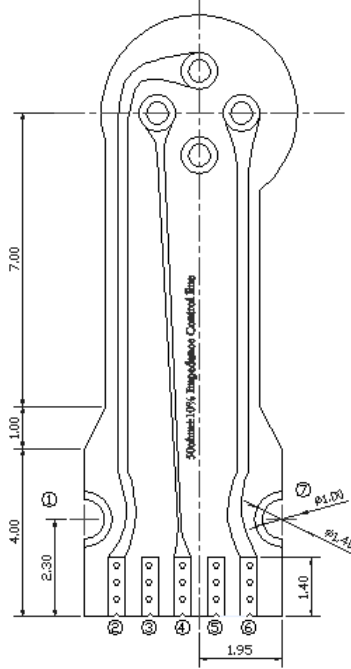
Parameter	Value
Optical connector	FC/UPC,FC/APC, SC/UPC or SC/APC (IEC874/7)
Mode field diameter	9.5±1um
Cladding diameter	125±2um
Outermost Jacket	900±100um
Jacket color	Blue and White
Pigtail Length	0.5±0.1m

Outline Dimensions

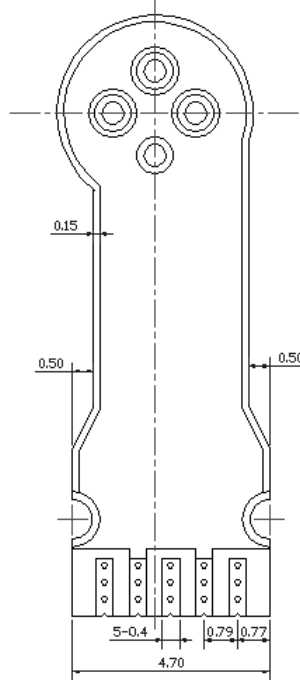
All dimensions are ±0.1mm unless otherwise specified (Unit: mm). For detail information please contact LinkPhotonic.



Outline of FPC and Pad Descriptions



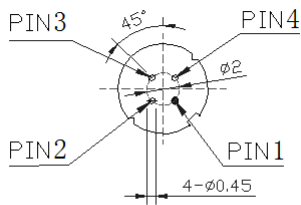
Top Side



Bottom Side

Pin	
1	GND (LD+/Case)
2	PD-
3	GND (LD+/Case)
4	LD- (RF in)
5	GND (LD+/Case)
6	PD+
7	GND (LD+/Case)

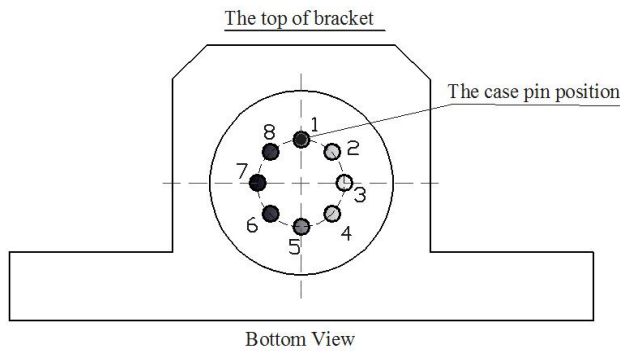
LD Pin Assignment



Bottom View

Pin	
1	LD + /CASE
2	LD-
3	PD-
4	PD+

LD Pin Direction:



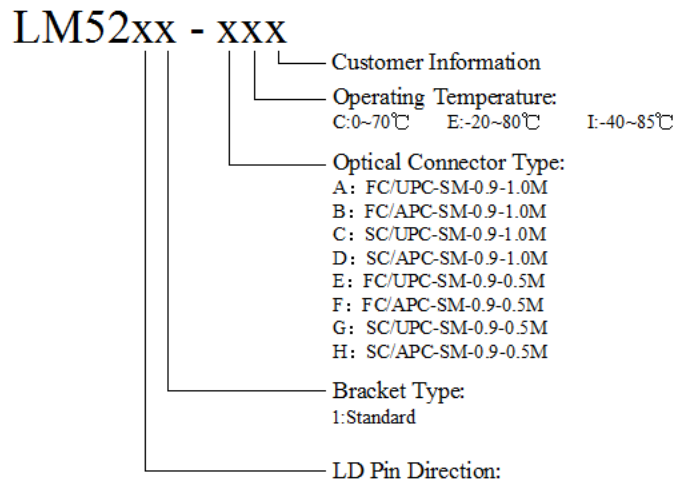
Note: 0: Any direction 9: with FPC

Precautions

Semiconductor chips are sensitive to electro-static damage. The module shall be packed with antistatic material for transportation. The working station and operators shall be grounded. Switching transients can cause electrical overstress (EOS) damage to the chips. EOS be may resulted from improper ESD handling, improper power sequencing, a faulty power supply or an intermittent connection.

- a. Operators should always use antistatic bands and clothing, electric conductive shoes, and other safety appliances while at work are highly recommended.
- b. Humidity in working environment should be controlled equal or above 40 percent RH.
- c. It is recommended that grounding mats be placed on the surfaces of assembly line workbench and the surrounding floor in working area, etc.
- d. When mounting this product in other parts or materials which can be electrically charged (printed wiring boards, plastic products, etc.), pay close attention to the static electricity in those parts.ESD may damage the product.

Ordering Information



Statement

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