

## 2.5Gb/s 1550nm MQW DFB LD

### ***LDM5S750/LDM5S752***

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### Features

- *High reliability MQW DFB LD chip*
- *Built- in isolator*
- *14 pin butterfly package, single*
- *mode FC/PC or other's type connector*
- *Data signal, Input impedance 25  $\Omega$*

### Application

- *2.5Gb/s WDM optical fiber transmission system*
- *1550 nm light source*

### Description

The high quality MQW DFB laser diode with butterfly package can meet the requirements of high data-rate and specific wavelength optical transmitter system. Also, the built-in thermo-electric cooler (TEC) can make the laser diode work properly in various environments.

## Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max	
Storage Temperature Range	Ts	°C	-40	+85	
Relative Humidity	RH	%	-	85	
Laser chip	Forward current	IFL	mA	-	100
	Reverse current	IRL	mA	-	2
	Reverse voltage	VRL	V	-	2
	Reverse voltage	VRD	V	-	15
Monitor detector	Reverse photo current	IRD	mA	-	1
	Forward current	IFD	mA	-	2
Thermal electric cooler	Voltage	-	V	-	2
	Current	-	A	-	1.5
Lead Solder Temperature	-	°C	-	260	
Lead Soldering Time	-	S	-	10	
Fiber yield strength		kgf	-	1	
Fiber bend radius		mm	30	-	

## Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Max
Case Operating Temperature Range	Tc	°C	-5	60
Power supply Voltage	Vcc	V	-	5
Relative Humidity	RH	%	-	80
Bias current	Ib	mA	-	50
TEC cooler current	Icooler	A	-	1

## Specifications (tested under recommended operating conditions, unless otherwise noted)

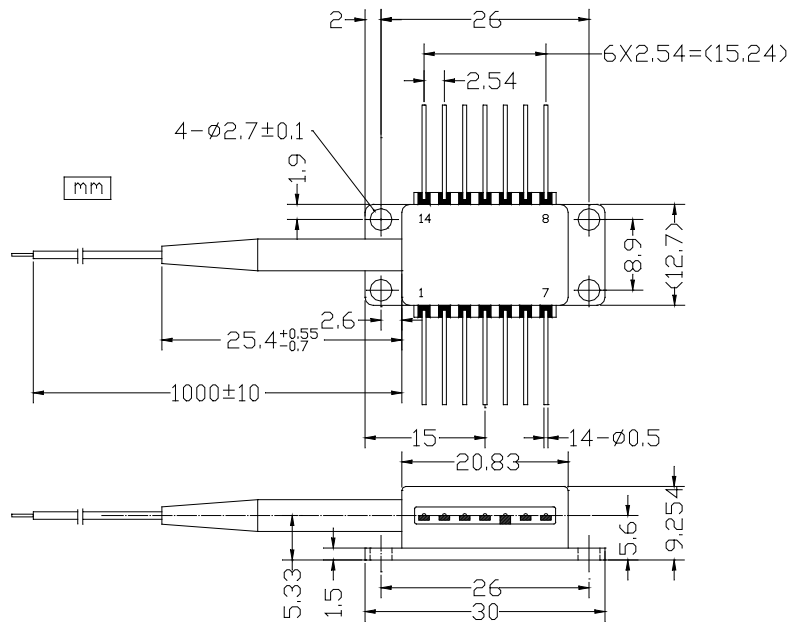
Parameter	Symbol	Unit	Min	Typ	Max	Test condition
<b>Electrical Characteristics</b>						
Operating Voltage	Vop	V	-	-	1.8	CW
Threshold Current	Ith	mA	-	15	25	CW
Thermistor	Rth	kΩ	9.5	10	10.5	25 °C
Thermoelectric cooler current	Icooler	mA	-	-	1000	CW, -5 °C~60 °C
Thermoelectric cooler voltage	Vcooler	V	-	-	1.5	CW, -5 °C~60 °C
Monitor Current	Im	uA	50	-	1000	CW, VRD=5V
Monitor Dark Current	Id	nA	-	-	200	CW, VRD=5V
Rise/Fall Time	Tr/f	ps	-	100	150	Ib=Ith+20mA, 10%-90%
<b>Optical Characteristics</b>						
Optical Output Power	PO	mW	1	2	5	CW
Bias current	IB	mA	-	40	60	-

Side mode suppression ratio	SMSR	dB	30	-	-	CW, If=Ith+20mA
Slope Efficiency	Se	mw/mA	0.1	-	0.2	CW
Central Wavelength	$\lambda_c$	nm	1530	1550	-	CW
Spectral Width	$\Delta\lambda$	nm	-	-	0.3	CW, -20dB
Tracking Error	$\Delta Pf$	dB	-	-	0.5	CW, 0~60 °C Im= Im @Po=2mW@25 °C
Monitor PD Capacitance	C	pF	-	-	10	VRD=5V,f=1MHZ
Connector Repeatability	-	dB	-	-	0.3	CW

## Pin Description

Pin	Description	Pin	Description	Top View
1	Thermistor	8	LD (P), ground	See "Package Outline "
2	Thermistor	9	LD (P), ground	
3	LD (N) bias	10	LD (P), ground	
4	Detector (P)	11	LD (P), ground	
5	Detector (N)	12	LD (N), RF modulation	
6	TEC (+)	13	LD (P), ground	
7	TEC (-)	14	LD (P), ground	

## Package Outline



## Regulatory Compliance

Feature	Test method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 2(>2000 V)
Mechanical Shock	MIL-STD-883D Method2002 Condition B	1500g, 0.5ms, 5times/axis
Vibration	MIL-STD-883D, Method 2007 condition A	20g,20~2000Hz,4min/cyc,4cyc/axis
Temperature Cycling	Bellcore GR-468-CORE	-40℃ to 85℃,500times
Resistance Cycle Humidity	MIL-STD-883D Method 1004	Operating current,65℃, 90~100%RH,3h, 10℃,3h,65℃,3h-10℃,24h,10times
Thermal Shock	MIL-STD-883D Method1011	Condition A ΔT=100℃,15 times
Fiber Pull	Bellcore GR-468-CORE	1Kg, 3 Times, 5sec

## Ordering Information

Part No.	Specifications				
	Package	Data rate	Laser	Optical Power	Temp
LDM5S750/752	butterfly	2.5G	1550nm DFB	2mW	-5~60℃

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