

1310nm DFB 10Gbit/s Laser

LDM3S510-003

Features

- *Data rate up to 10Gbit/s*
- *Input impedance is 50 Ω*
- *Uncooled DFB laser diode with MQW structure*
- *Emission wavelength is the 1310nm band*
- *Built-in optical isolator*
- *Built-in InGaAs monitor photodiode*
- *Single-mode optical fiber*
- *Industry-standard TO-56 packaged (4-PIN)*

Application

- *SDH/SONET Transmission system up to 10Gbps*
- *10 Gigabit Ethernet*
- *other applications*

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T_s	$^{\circ}\text{C}$	-40	80
Laser Diode Reverse Voltage	V_{RL}	V	-	1.8
Laser Diode Forward Current	I_{FL}	mA	-	150

Monitor Diode Reverse Voltage	V_{RD}	V	-	15
Monitor Diode Forward Current	I_{FD}	mA	-	2
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	Typ	Max
Case Operating Temperature Range	T_c	°C	-10	-	80
Operating Voltage	V_{op}	V		1.2	1.5

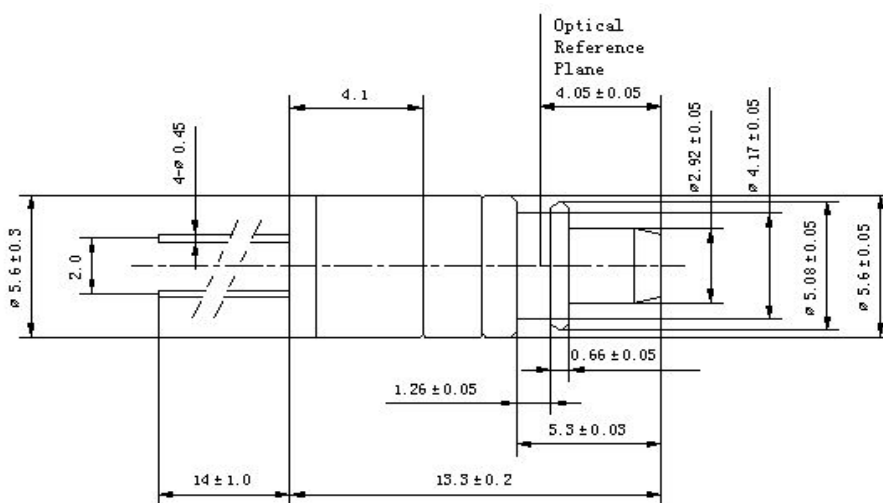
Specifications ($T=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Threshold Current	I_{th}	V	-	10	25	CW
			-	-	40	CW, over temperature
Rise/Fall Time	$T_{r/f}$	ps	-	40	50	$I_b = I_{th}$; 20%~80%
Monitor Current	I_m	μA	100	-	1000	CW, $V_{RD}=5\text{V}$
Monitor Dark Current	I_d	nA	-	-	10	CW, $V_{RD}=5\text{V}$
			-	-	100	CW, $V_{RD}=5\text{V}$, over temperature
Optical Characteristics						
Optical Output Power	P_o	dBm	-6	-	-2	CW, $I_f = I_{th} + 30\text{mA}$
Slope Efficiency	Se	mW/mA	0.01	-	-	
Central Wavelength	λ_c	nm	1290	1310	1330	CW
			1270	-	1340	CW, over temperature
Spectral Width	$\Delta\lambda$	nm	-	-	0.5	CW, -20dB
Side Mode Suppression Ratio	SMSR	dB	30	-	-	CW
Optical Return Loss	ORL	dB	18	-	-	CW
Tracking Error	ΔP_f	dB	-1.0	-	+1.0	CW, over temperature $I_m = \text{const}@P_f(I_{th} + 20\text{mA})$
Monitor PD Capacitance	C	pF	-	-	10	$V_{RD}=5\text{V}$, $f=1\text{MHz}$
Connector Repeatability	-	dB	-1	-	+1	

Pin Description

Pin	Description	Bottom View
1	LD(N) CASE	
2	LD(P)	
3	Detector(N)	
4	Detector(P)	

Package outline (Unit: mm)



Ordering Information

Part No.	Specification					
	Package	Datarate	Laser	Optical Power	Temp	Connector
LDM3S510-001	Coaxial Pigtail	10G	1310nm DFB	-6 ~ -2dBm	-10~80 °C	SC/PC
LDM3S510-002	Coaxial Pigtail	10G	1310nm FP	-6 ~ -2dBm	-10~80 °C	SC/PC
LDM3S510-003	LC TOSA	10G	1310nm DFB	-6 ~ -2dBm	-10~80 °C	-
LDM3S510-004	LC TOSA	10G	1310nm FP	-6 ~ -2dBm	-10~80 °C	-

Note: Fiber length in the pigtail package is 1000mm±30mm

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