

1310nm FP LD Cooled DIP Laser Device

LDM3S80 Series

Features

- *Analog bandwidth 800MHz*
- *1310 nm wavelength*
- *High-reliability FP LD*
- *Cooled 14-pin DIP package, single mode FC/PC connector*

Application

- *Optical transmitter for optical communication, meters and apparatuses, fiber repeater in*
- *mobile communication*
- *Light source*

Description

Dual-in-line packages (DIP) have enough inner space to house a thermo-electric-cooler (TEC) module and a mounting plate for heat dissipation and maintain the laser diode working at a stable temperature. Although DIP is not suitable for data rate higher than 800Mb/s applications, it has a significant cost advantage.

Absolute Maximum Ratings

Parameter		Symbol	Unit	Min	Max
Storage Temperature Range		T_s	°C	-40	+85
Relative Humidity		RH	%	-	85
Laser chip	Forward current	I_{FL}	mA	-	100
	Reverse current	I_{RL}	mA	-	2
	Reverse voltage	V_{RL}	V	-	2
Monitor detector	Reverse voltage	V_{RD}	V	-	15
	Reverse photo current	I_{RD}	mA	-	1
	Forward current	I_{FD}	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	T_c	°C	-5	60
Power supply Voltage	V_{cc}	V	-	5
Relative Humidity	RH	%	-	80
Bias current	I_b	mA	-	50
Modulation current	I_{mod}	mA	-	40
TEC cooler current	I_{cooler}	mA	-	800

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

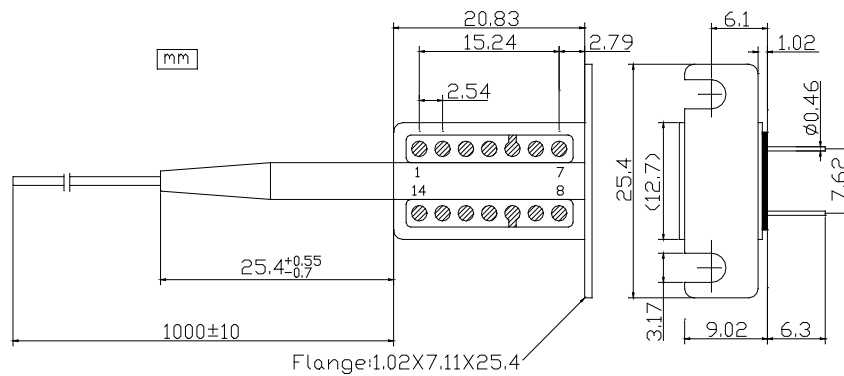
Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Operating Voltage	V_{op}	V	-	-	1.8	CW
Threshold Current	I_{th}	mA	-	20	30	CW
Modulation current	I_m	mA	10	-	40	$I_f = I_{th} + 20mA$
Rise/Fall Time	$T_{r/f}$	ns	-	0.3	0.5	$I_b = I_{th}$; 20%~80%

Analog bandwidth	-	MHz	-	800	-	-3dB, CW
Monitor Current	I_m	μA	100	-	1000	CW
Optical Characteristics						
Optical Output Power	P_o	mW	0.1	-	2.0	$I_f = I_{th} + 40mA$
Central Wavelength	λ_c	nm	1280	-	1330	CW
Spectral Width	$\Delta\lambda$	nm	-	3	5	CW, RMS
Tracking Error	ΔP_f	dB	-	± 0.5	-	CW, 0~60 °C $I_m = I_m @ 25\text{ °C}$
Series resistance	-	Ω	-	10	-	CW
TEC cooler	current	-	mA	-	800	CW
	voltage	-	V	-	1.5	CW

Pin Description

Pin	Description	Pin	Description	Bottom View
1	Cooler (+)	10	LD (P) Case ground	See "Package Outline "
5	Case ground	11	Thermistor	
7	Detector (N)	12	Thermistor	
8	Detector (P)	14	Cooler (-)	
9	LD (N)	Others are not connected		

Package Outline



Ordering Information

Part No.	Specification				
	Package	Data rate	Laser	Optical Power	Temp
LDM3S801	14-pin DIP cooled	800MHz	1310nm FP	0.1mW	-5~60°C
LDM3S802	14-pin DIP cooled	800MHz	1310nm FP	0.5mW	-5~60 °C
LDM3S803	14-pin DIP cooled	800MHz	1310nm FP	1.0mW	-5~60 °C
LDM3S804	14-pin DIP cooled	800MHz	1310nm FP	2.0mW	-5~60 °C

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