



Coaxial-Pigtailed DFB-LD Module for Analog Application

LDM3S509 Series

Features

- *Operating wavelength: 1310nm*
- *High-stability MQW-DFB laser chip*
- *Built-in InGaAsP monitor photodiode*
- *4-pin coaxial-pigtailed package, single mode coupling, FC/APC connector*
- *Built-in optical isolator*

Applications

- *Mobile communication systems*
- *CATV transmission systems*
- *Other analog transmission applications*

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Optical output power from fiber end	Pf	mW	-	10
Optical isolation	ISO	dB	40	-
Fiber yield strength	-	kgf	-	1
Fiber bend radius	-	mm	30	-
Storage Temperature Range	T _s	°C	-40	85
Relative Humidity	RH	%	-	85
Laser Diode Reverse Voltage	V _{RL}	V	-	2

Laser Diode Forward Current	I_{FL}	mA	-	150
Monitor PD Reverse Voltage	V_{RPD}	V	-	15
Monitor PD Reverse Current	I_{RPD}	mA	-	2
Lead Solder Temperature	-	°C	-	260
Lead Soldering Time	-	s	-	10

Recommended Operating Conditions

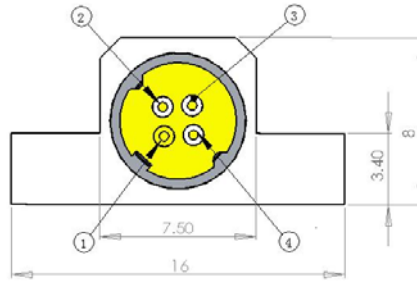
Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	T_c	°C	-20		80
Power Supply Voltage	V_{cc}		-	1.1	1.5

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

Parameter	Symbol	Unit	Min	Typ	Max	Condition
Electrical Characteristics						
Threshold Current	I_{th}	mA	-	8	15	CW
			-	-	50	CW, over temperature
Operating Current	I_{op}	mA	-	-	50	$T_c=25\text{ }^\circ\text{C}$
			-	-	100	$T_c=80\text{ }^\circ\text{C}$
Monitor PD Current	I_m	uA	50	-	2000	CW, $V_{rPD}=5\text{V}$
Monitor PD Dark Current	I_d	nA	-	-	10	CW, $V_{rPD}=5\text{V}$
			-	-	100	CW, $V_{rPD}=5\text{V}$ over temperature
Photodiode Capacitance	C	pF	-	-	10	$f=1\text{MHz}$, $V_{rPD}=5\text{V}$
Carrier Noise Ratio	CNR	dB	-	51		45-550MHz, 59CH, PAL-D
Composite Second Order	CSO	dBc	-	-	-58	45-550MHz, 59CH, PAL-D
Composite Triple Beat	CTB	dBc	-	-	-65	45-550MHz, 59CH, PAL-D
Frequency response	-	dB	-	± 0.75	-	CW 45MHz ~ 1000MHz
Optical Characteristics						
Optical Output Power	P_o	mW	2	-	8	
Slope Efficiency	η	W/A	0.10	-	-	CW
Optical Wavelength	λ_c	nm	1290	1310	1330	CW
Wavelength/Temperature Coefficient	$d\lambda/dT$	nm/C	-	-	0.1	Over temperature range
Side Mode Suppression Ratio	SMSR	dB	35	-	-	CW
Spectral Width	$\Delta\lambda$	nm	-	-	1	CW, -20dB
Optical isolation	ISO	dB	40	-	-	
Tracking Error	TE	dB	-1	-	+1	CW, $P_0=2\text{mW}$

Note1: $*TE=10\log(P_T/P_0)$

Pin Descriptions



Pin	Description (A Version)
1	LD anode (case)
2	LD cathode
3	PD cathode
4	PD anode

Package Outline

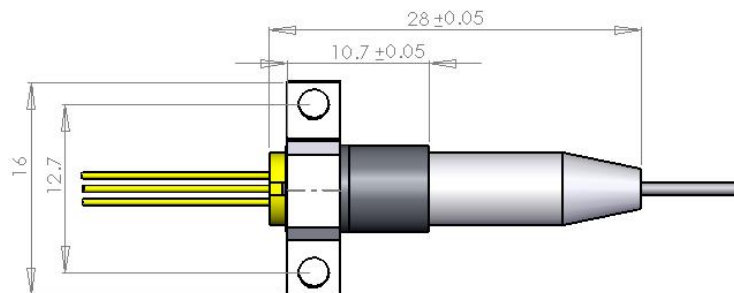


Figure.1 Tabs with 0.9mm pigtail jacket

Note1: All dimensions are in mm.

Ordering Information

Part No.	Specifications				
	Package	Tx	Pout	Top	PIN Description
LDM3S509-303	coaxial-pigtailed	1310nm DFB	2mW	-20~80°C	A Version
LDM3S509-304	coaxial-pigtailed	1310nm DFB	4mW	-20~80°C	A Version
LDM3S509-305 *	coaxial-pigtailed	1310nm DFB	6mW	-20~80°C	A Version
LDM3S509-306 *	coaxial-pigtailed	1310nm DFB	8mW	-20~80°C	A Version

*: The product marked with * is not available at present.

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