



Analog 1310nm DFB Coaxial Pigtailed Laser Device

LDM3S509-2&LDM3S509-3

Features

- *Analog bandwidth $\geq 1800\text{MHz}$*
- *Operating wavelength 1310nm*
- *High-reliability DFB laser chip*
- *Built-in InGaAs monitor photodiode*
- *Built-in optical isolator*
- *4pin Coaxial-pigtailed package, single mode FC/APC, SC/APC connector or customized*

Application

- *Mobile communication systems fiber-optical repeater*
- *CATV transmission systems return paths*
- *Other analog applications*

Absolute Maximum Ratings

Parameter		Symbol	Unit	Min	Max
Case Operating Temperature Range	LDM3S509-2	T_c	°C	0	85
	LDM3S509-3			-20	85

Storage Temperature Range	T_s	°C	-40	85
Relative Humidity	RH	%	-	95
Laser Diode Reverse Voltage	V_{RL}	V	-	2
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

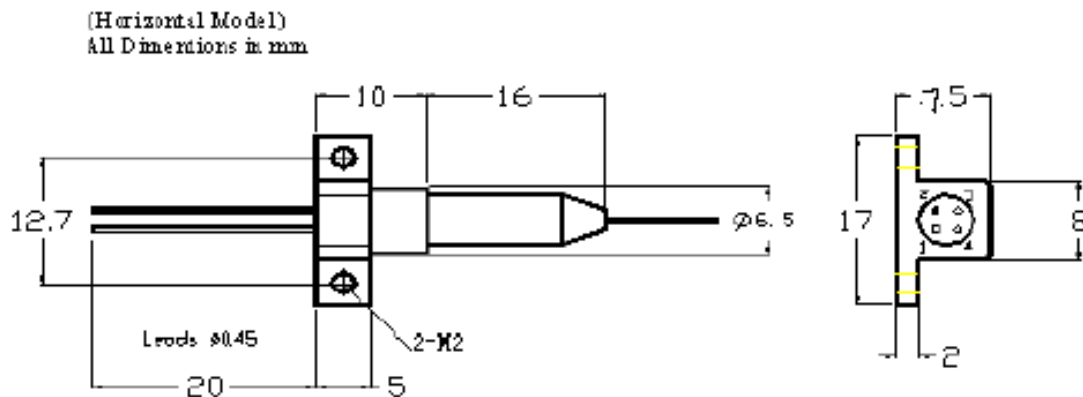
Specifications ($T=25^{\circ}\text{C}$, BOL, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Operating Voltage	V_{op}	V	-	-	1.6	
Threshold Current	I_{th}	mA	-	-	30	over temperature
			-	-	40	
Analog Bandwidth	BW	MHz	1800	-	-	-3dB
3 rd order distortion	CTB	dBc	-	-	-60	$f_1=872\text{MHz}, f_2=874\text{MHz}$, over temperature
Monitor Current	I_m	μA	100	-	-	CW, $V_{RD}=5\text{V}$, at rated P_o
Monitor Dark Current	I_d	nA	-	-	10	CW, $V_{RD}=5\text{V}$
			-	-	-	CW, $V_{RD}=5\text{V}$, over temperature
Optical Characteristics						
Optical Output Power	P_o	mW	-	2	-	CW, $I_f = I_{th} + 20\text{mA}$
Slope Efficiency	Se	mW/mA	-	0.1	-	CW
Central Wavelength	λ_c	nm	1280	1310	1340	CW
			1265	-	1355	CW, over temperature
Spectral Width	$\Delta\lambda$	nm	-	-	1	CW, -20dB
Side Mode Suppression Ratio	SMSR	dB	30	-	-	
Tracking Error	ΔP_f	dB	-1	-	1	CW, over temperature $I_m = \text{const} @ P_f(I_{th} + 20\text{mA}), \text{APC}$
Monitor PD Capacitance	C	pF	-	-	10	$V_{RD}=5\text{V}$, $f=1\text{MHz}$
Connector Repeatability		dB	-1	-	1	

Pin Description

Pin No.	Description	Bottom View
1	LD(anode)(CASE)	
2	LD(cathode)	
3	Detector(cathode)	
4	Detector(anode)	

Package outline



Ordering Information

PN	Bandwidth	Wavelength	Chip type	Package	Operating temperature
LDM3S509-2	≥1800MHz	1310nm	DFB-LD	4pin Coaxial pigtail	0~85 °C
LDM3S509-3	≥1800MHz	1310nm	DFB-LD	4pin Coaxial pigtail	-20~85 °C

Updated Information (from V2.0 to V2.1)

1. There were some mistakes in the page header and "Absolute Maximum Ratings" table of V2.0, "LDM5S509-2&LDM5S509-3" should be "LDM3S509-2&LDM3S509-3", It's corrected in V2.1.
2. The page footer was changed.

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