

ML1141 series

1550 nm DFB coaxial laser diode module

Overview

The ML1141 series is comprised of 1550 nm DFB coaxial laser diode modules for analog applications. The lasers have a low threshold current and a high SMSR. The ML1141 series is available with optical isolators, various connectors and different flange options. Please check the section on ordering information for details on the different options.



Applications

Communications

Analog applications
Wireless Repeaters

Electro-optical Characteristics

Parameter	Symbol	Min	Typical value	Max	Unit	Test condition
Threshold Current	I_{TH}	-	11	20	mA	
Operating Current	I_{OP}	-	40	60	mA	$P_{OPT}=3mW, CW$
Optical Output Power	P_{OPT}	2	3	-	mW	$I_{op} = I_{th} + 30mA$
Operating Voltage	V_{OP}	-	1.5	1.8	V	$P_{OPT}=3mW, CW$
Slope Efficiency	η	0.1	-	0.17	W/A	$T_c = +25^\circ C$
Central Wavelength	λ		Note 3		nm	$P_{OPT} = 3mW, CW$
Wavelength Temperature Coefficient	$d\lambda/dT$	-	0.08	-	nm/K	$CW, -20\sim 85^\circ C$
Spectral Width	$\Delta\lambda$	-	-	1	nm	-20 dB
Side-Mode Suppression Ratio	SMSR	35	-	-	dB	$P_{OPT}=3mW, CW$
Monitor Current	I_m	0.1	-	-	mA	$V_{RPD}=5V, P_{OPT}=3mW$
Monitor Dark Current	I_{md}	-	-	0.1	μA	$V_{RPD}=5V$
LD Series Resistance	R_{LD}	4	-	8	Ω	
Tracking Error (Note 1)	TE	-1.0	-	1.0	dB	$T_c=25^\circ\sim 85^\circ C$
Third Order Intermodulation Distortion (Note 2)	IMD3	-	-	-55	dBc	
Relative Intensity Noise	RIN	-	-155	-	dB/Hz	$P_{OPT}=3mW, f=1.8GHz$
Optical Isolation	Iso	30	-	-	dB	

Note 1 $CW, APC(25^\circ C)=3mW, TE=10\log(P_o(T_c)/P_o(25^\circ C))$

Note 2 2 tone, RF input power = 0dBm, $f_1 = 1.8GHz, f_2 = 1.802GHz$

Note 3 1470 \pm 3 nm, 1490 \pm 3 nm, 1490 \pm 3 nm, 1510 \pm 3 nm, 1530 \pm 3 nm, 1550 \pm 3 nm, 1570 \pm 3 nm, 1590 \pm 3 nm, 1610 \pm 3 nm

Absolute Maximum Ratings

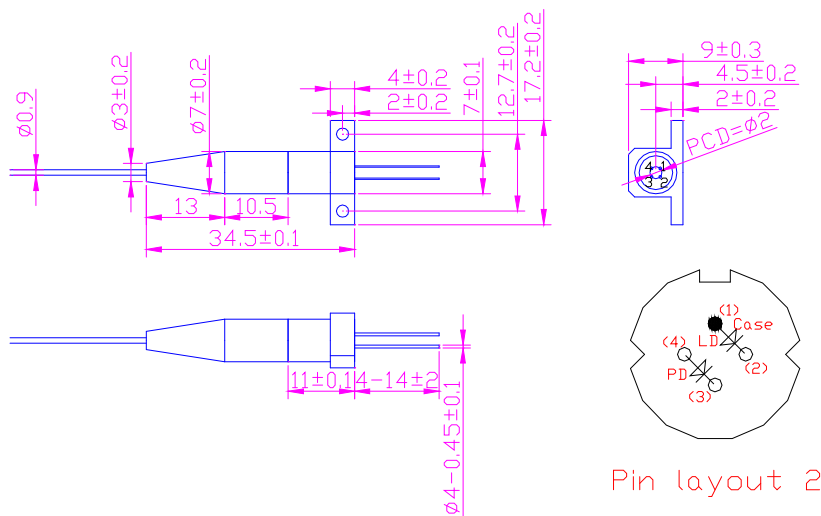
Parameter	Symbol	Min	Max	Unit
Light Output	P _{OPT}	-	7	mW
LD Reverse voltage	V _{RLD}	-	2	V
PD Reverse voltage	V _{RPD}	-	20	V
Operating Temperature	T _{OP}	-20	+85	°C
Storage Temperature	T _S	-40	+85	°C
Soldering Temperature	T _{SOL}	-	260	°C/10s

Optical Fiber Specification

Parameter	Specification	Unit
Mode Field Diameter	9.5±1	μm
Cladding Diameter	125±2	mm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Noncircularity	1.6	%
Outer Diameter	0.9±0.1	mm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1000±50	mm

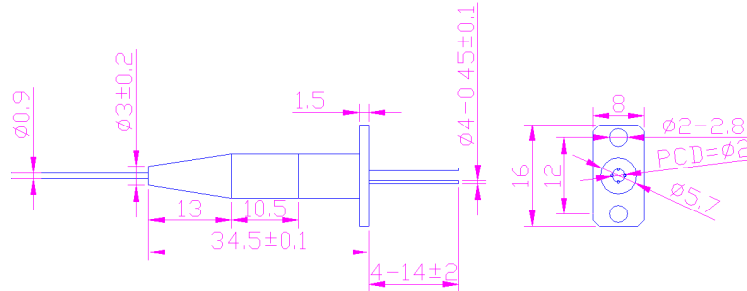
Mechanical Specification and PIN layout

Dimensions with Horizontal Flange:



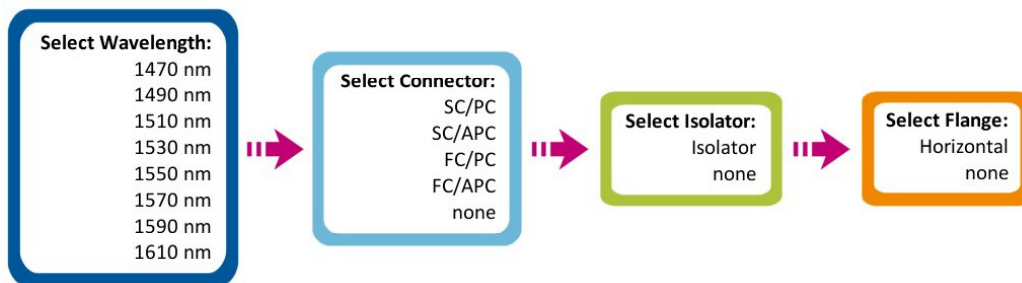
Pin layout 2

Dimensions with Horizontal Flange:



Ordering Information

When ordering ML1141 series lasers, please specify a configuration from the following selection:



Safety Information

- The laser light emitted from this laser diode is invisible and potentially harmful to the human eye. Avoid eye and skin exposure to the beam, both direct and reflected.
- Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload. Please ensure ESD protection prior to handling the products.
- These Modulight products are not intended for use in systems where product malfunction can reasonably be expected to result in personal injury.



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