

ML1113 series

1310 nm FP coaxial laser diode module for analog applications

Overview

The ML1113 series is comprised of 1310 nm FP coaxial laser diode modules for analogue applications. The lasers have a low threshold current and a narrow spectral linewidth. The ML1113 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

- Hybrid Fibre Coax (HFC)
- RF-over-fibre
- Wireless Repeaters
- Analog applications

Electro-optical Characteristics

Parameter	Symbol	Min	Typical value	Max	Unit	Test condition
Threshold Current	I_{TH}	-	7	15	mA	
Operating Current	I_{OP}	-	40	60	mA	$P_{OPT}=3mW, CW$
Optical Output Power	P_{OPT}	2	3	6	mW	$I_{OP}=40mA$
Operating Voltage	V_{OP}	-	1.5	1.8	V	$P_{OPT}=3mW, CW$
Slope Efficiency	η	0.1	-	0.17	W/A	$CW, T_C=-20^{\circ}C$
		0.09	-	0.15	W/A	$CW, T_C=25^{\circ}C$
		0.05	-	-	W/A	$CW, T_C=85^{\circ}C$
Peak Wavelength	λ	1280	1310	1340	nm	$P_{OPT}=3mW, CW$
Spectral Width	$\Delta\lambda$	-	-	4	nm	CW, RMS
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 *	TE	-1	-	1	dB	$T_C=25^{\circ}\sim 85^{\circ}C$
Third Oder Intermodulation Distortion **	IMD3	-	-	-50	dBc	
Relative Intensity Noise	RIN	-	-	-150	dB/Hz	$P_o=3mW, CW, f=1.8GHz$
Optical Isolation ***	Iso	NA/30	-	-	dB	

* $CW, APC(25^{\circ}C)=3mW, TE=10\log(PL(T_c)/PL(25^{\circ}C))$

** $CW, 2\ tone, RF\ input\ Power=0dBm, f_1=1.8G, f_2=1.802GHz$

*** Left values: without isolator. Right values: with isolator

Absolute Maximum Ratings

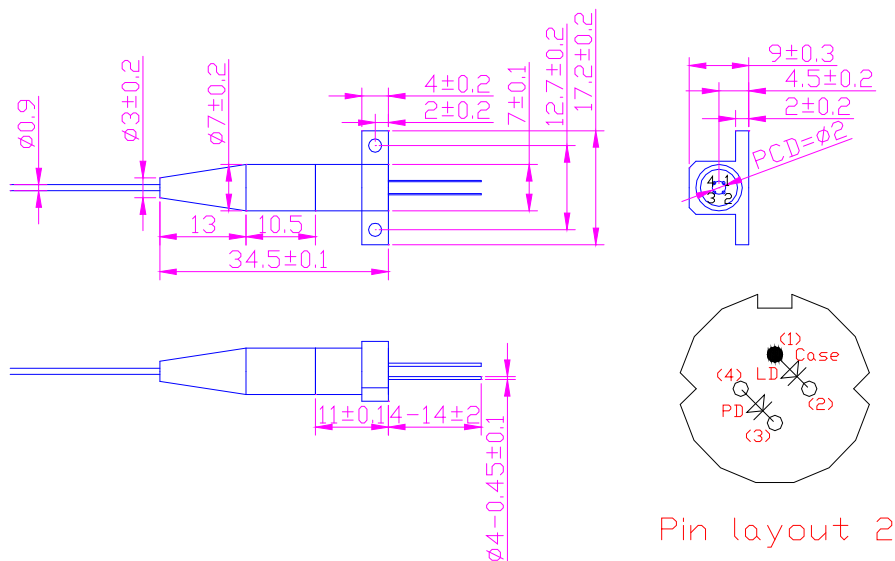
Parameter	Symbol	Min	Max	Unit
Light Output	P_o	-	7	mW
LD Reverse voltage	V_{RLD}	-	2	V
PD Reverse voltage	V_{RPD}	-	20	V
Operating Temperature	T_{OP}	-20	85	°C
Storage Temperature	T_S	-40	85	°C
Soldering Temperature	T_{SOL}	-	260	°C/10s

Optical Fiber Specification

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

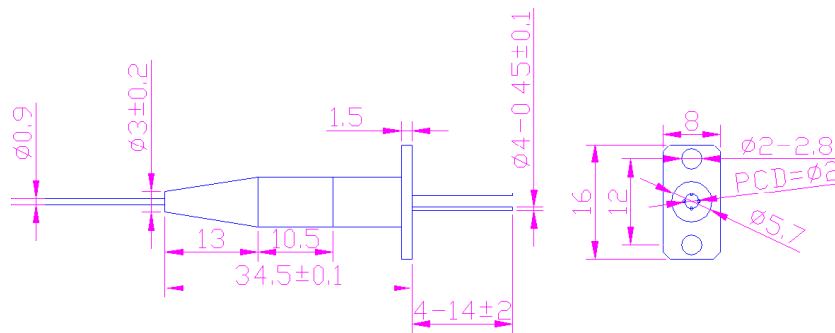
Mechanical Specification and PIN layout

Dimensions with Horizontal Flange:



Pin layout 2

Dimensions with Horizontal Flange:



Ordering Information

When ordering ML1113 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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