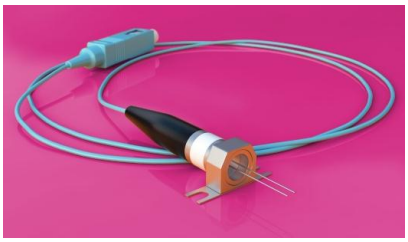
ML1113 series

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
Analogue applications

Electro-optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Peak Wavelength (P_{OP} = 3 mW, CW)	λ_c	1280	1310	1340	nm
Optical Output Power (I_{OP} = 40 mA)	P_{OP}	2	3	6	mW
Operating Current (P_{OP} = 3 mW, CW)	I_{OP}	-	40	60	mA
Operating Voltage (P_{OP} = 3 mW, CW)	V_{OP}	-	1.2	1.8	V
Slope Efficiency (25°C, CW)	η_{25}	0.09	-	0.15	W/A
Slope Efficiency (85°C, CW)	η_{85}	0.05	-	-	W/A
Threshold Current	I_{TH}	-	7	15	mA
LD Series Resistance	R_{LD}	4	-	8	Ω
Spectral Width (CW, RMS)	$\Delta\lambda$	-	-	4	nm
Monitor Current (V_{RPD} = 5 V, P_{OP} = 3 mW)	I_m	0.1	-	-	mA
Monitor Dark Current (V_{RPD} = 5 V)	I_{md}	-	-	0.1	µA
Tracking Error (T_C = 25…85°C) *	TE	-1.0	-	1.0	dB
Third Order Intermodulation Distortion **	IMD3	-	-50	-	dBc
Relative Intensity Noise (P_{OP} = 3 mW, f = 1.8 GHz)	RIN	-	-150	-	dB/Hz
Optical Isolation ***	Iso	30	-	-	dB

Unless otherwise noted, the above values represent operation @ 25°C. All temperatures refer to case temperature, T_C.

** CW, $P_{OP(25°C)}$ = 3 mW , TE = 10log(Pf(T_c)/Pf(25°C))*

*** CW, 2 tone, RF input Power = 0dBm, f1= 1.8G, f2=1.802GHz*

**** 30 dB with single-stage isolator*

Absolute Maximum Ratings

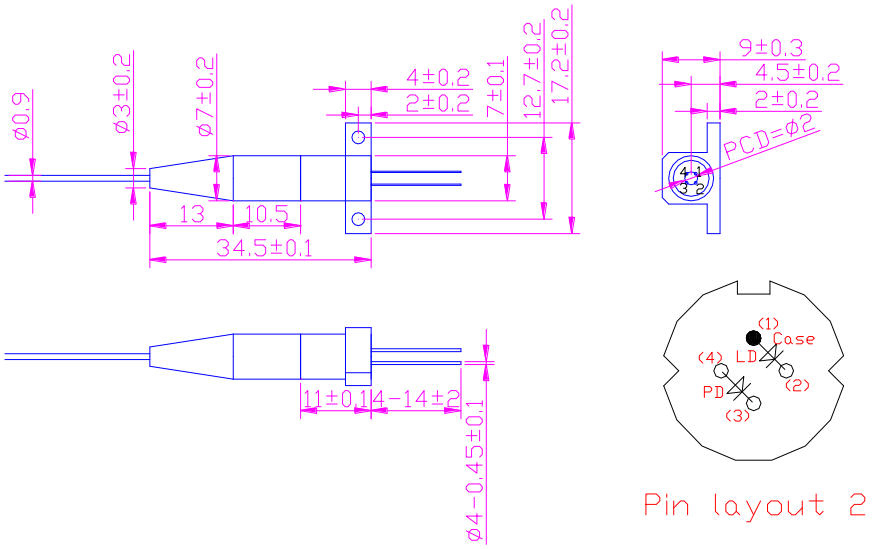
Parameter	Symbol	Rating	Unit
Light Output	P_{OPT}	7	mW
LD Reverse Voltage	V_{RLD}	2	V
PD Reverse Voltage	V_{RPD}	20	V
Operating Temperature	T_{OP}	-20…+85	°C
Storage Temperature	T_S	-40…+85	°C
Soldering Temperature (< 10 s)	T_{SOL}	260	°C

Optical Fiber Specification

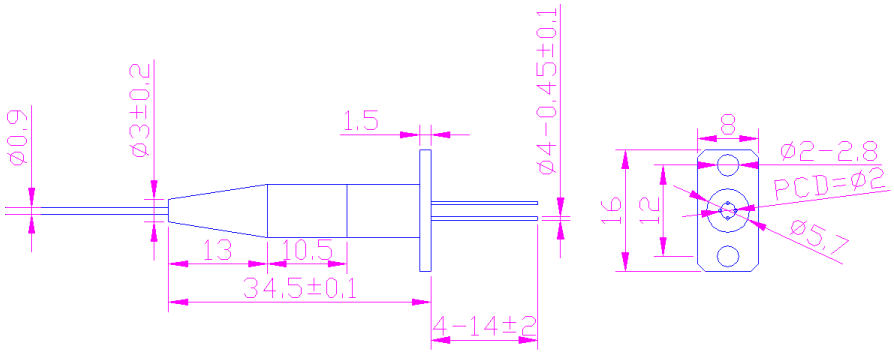
Parameter	Specification	Unit
Mode Field Diameter	9.5±1	µm
Cladding Diameter	125±2	µm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Noncircularity	1.6	%
Outer Diameter	0.9±0.1	mm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1000±50	mm

Mechanical Specification And Pin Layout

Dimensions With Horizontal Flange:

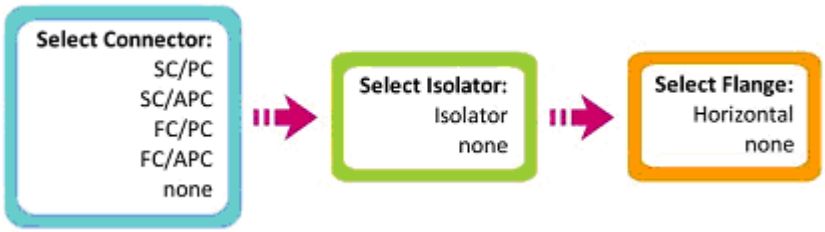


Dimensions With Vertical Flange:



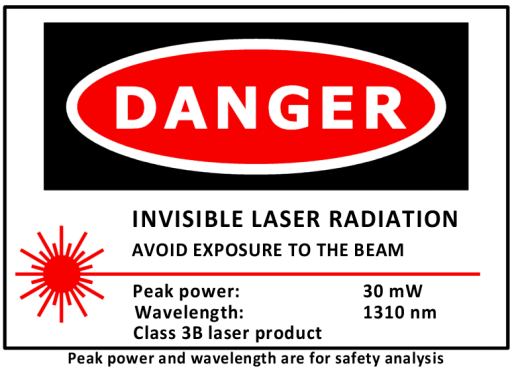
Ordering Information

When ordering ML1010 series lasers, please specify a configuration from 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.



Peak power and wavelength are for safety analysis only, not to present device performance.

Liability note