

ML1133 series

DFB coaxial laser diode module for digital applications

Overview

The ML1133 series is comprised of 1470-1610 nm DFB coaxial laser diode modules for digital applications. The lasers have 8 wavelength channels following ITU G.694.2 CWDM wavelength grid. The ML1133 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

2.5 Gbps long haul coarse WDM

Electro-optical Characteristics (T=25°C)

Parameter	Symbol	Min	Typical value	Max	Unit	Test conditions
Threshold Current	I_{TH}	-	11	20	mA	Start, End=30mA (Step 0.5mA), 2 Points extrapolation)
Operating Current	I_{OP}	-	-	60	mA	CW, $P_F=2mW$
LD Forward Voltage	V_{Lop}	-	-	1.8	V	CW, $P_F=2mW$
Slope efficiency	η	0.07	-	-	W/A	CW, $P_F=2mW$
Central wavelength	λ_c	-	See below	-	nm	
Wavelength temperature coefficient	$\Delta\lambda/\Delta T$	-	-	0.08	nm/°C	CW, -20...70°C
Spectral width	$\Delta\lambda$	-	0.8	1.0	nm	-20dB
Side Mode Suppression Ratio	SMSR	30	-	-	dB	CW, $P_F=2mW$
Rise / Fall time	t_r / t_f	-	-	0.15	ns	$I=I_{th}$, 20 - 80%
Monitor Current	I_m	100	-	-	μA	$V_{RPD} = 5V$
Monitor Dark Current	I_{md}	-	-	100	nA	$V_{RPD} = 5V$
Tracking Error	TE	-1.0	-	+1.0	dB	$T_C=25^\circ\sim 70^\circ C$
Optical Isolation	Iso	30	-	-	dB	

Wavelength specification (nm, CW with $P_F = 2 mW$, $T_C = 25^\circ C$)

Nominal wavelength	Min	Typical	Max
1470	1467	1470	1473
1490	1487	1490	1493
1510	1507	1510	1513
1530	1527	1530	1533
1550	1547	1550	1553
1570	1567	1570	1573
1590	1587	1590	1593
1610	1607	1610	1613

Output Power Specification ($T_c = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Optical Power	P_F	1.4 (2) ¹	2 (3) ¹	-	mW	$I = I_{th} + 20\text{mA}$

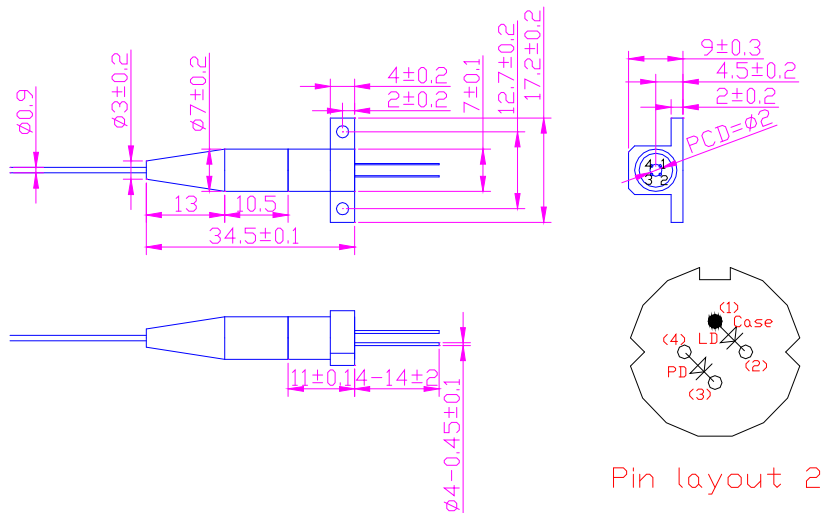
¹ The output power level for the high power variant of the module is indicated in parenthesis.

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Optical Output Power	P_F	7	mW
LD Reverse Voltage	V_{RLD}	2	V
PD Reverse Voltage	V_{RPD}	20	V
Soldering Temperature (< 10 s)	T_{SLD}	260	$^\circ\text{C}$
Operating Case Temperature	T_c	0...70	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40...85	$^\circ\text{C}$

Mechanical Specification and PIN layout

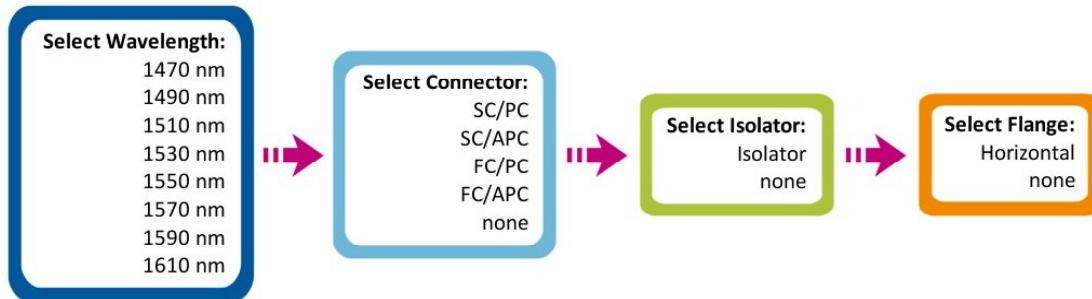
Dimensions with Horizontal Flange:



Pin layout 2

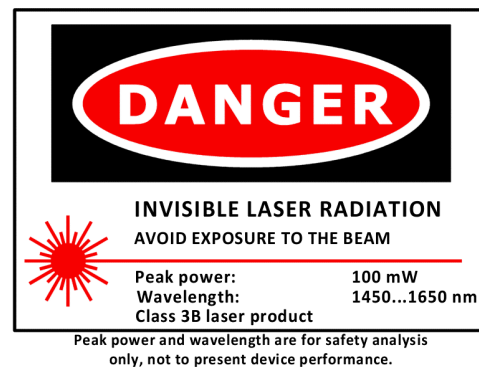
Ordering Information

When ordering ML1133 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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