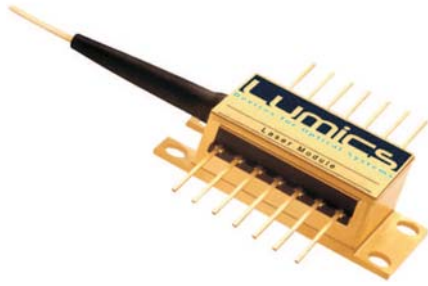


LU1064Myyy 1064nm Laser Module, Seed Laser c.w. or pulsed mode



Description:

The Lumics LU1064Myyy laser diode module contains an optimized GaAs substrate based quantum well high power laser. It has been designed for customer specific applications and is available with special FBG's and fibers. The extremely stringent reliability requirements are achieved through our patent pending innovative technology. This includes careful design, exactly defined manufacturing and extensive testing. The qualification contains a set of optoelectronic, thermal and mechanical tests. Each laser diode module is individually serialized for traceability and is shipped with a specified set of test data.

Features:

- Wavelength 1064nm
- additional: 1032nm, 1055nm & 1080nm
- > 400mW kink-free power
- Up to 1W peak power

Functions:

- single mode pigtail
- cooled 14pin package
- FBG-stabilized
- PM-fiber optional

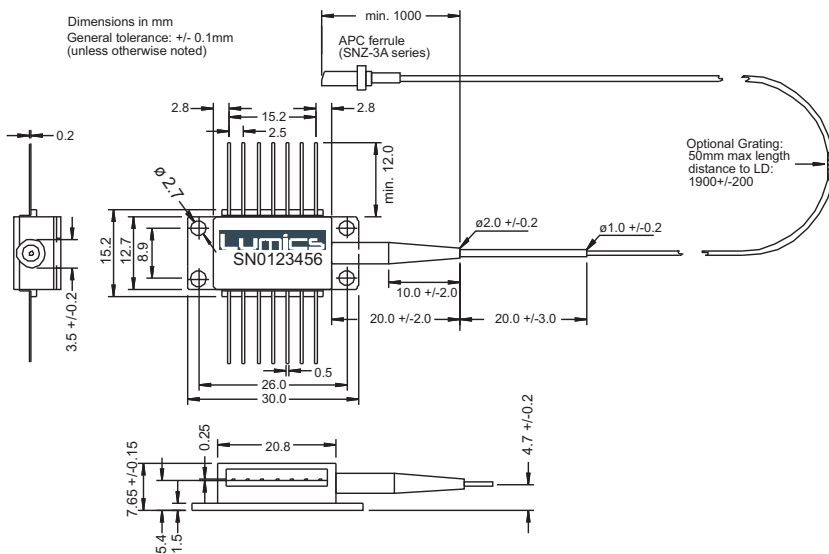
Benefits:

- all Laser welded
- short pulse mode 5ns - 1µs
- field proven reliability

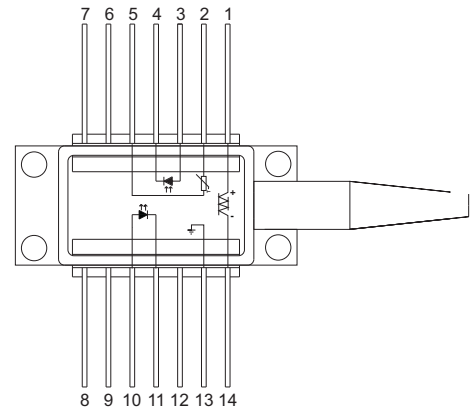
Applications:

- seeder for fiber laser
- sensor applications

Module Drawing (dimensions in mm)



Pin Connections



Pin	Function	Pin	Function
1	Cooler (+)	8	nc
2	Thermistor	9	nc
3	PD Anode (+)	10	LD Anode (+)
4	PD Cathode (-)	11	LD Cathode (-)
5	Thermistor	12	nc
6	nc	13	Case ground
7	nc	14	Cooler (-)

Your ideas are welcome.

Electrical and Optical Characteristics (at 1064nm, 25°C (T_{chip} and T_{case}) and Begin of Life (BOL)):

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Operating Power (1064nm)	LU1064M200	P _{op}		200		mW
	LU1064M400	P _{op}		400		mW
Operating Current	LU1064M200	I _{op}		400	450	mA
	LU1064M400	I _{op}		750	800	mA
Operating peak power	< 1μs / 100KHz	P _{op}		1000		mW
Operating peak current	< 1μs / 100KHz	I _{op}			2	A
Rise and fall time				2		nsec
Threshold Current		I _{th}		60		mA
Forward Voltage	at I _{op}	V _{op}		1.62	1.95	V
Peak Wavelength λ _{peak}	at P _{op}	λ	1059	1064	1069	nm
Spectral Width (FWHM)	at P _{op} , with FBG	Δ λ			1	nm
Optical Power Stability	at I _{op} , t = 60 sec	P _{op} / t			0.5	%
Polarization extinction ratio	PM fiber version		12			dB
Spectral Shift with Temp.	FBG Temp.	Δ / T			0.02	nm/ °C
Side Mode Suppression	at P _{op} , with FBG		-20			dB

Pulsed Operation

Peak Power	10KHz, 0.2 μsec		1			W
Monitor Responsivity		R	0.1	0.5	10	μA / mW
Monitor Dark Current				5	40	nA
TEC Current	chip 25°C, case 70°C	I _{TEC}		0.8		A
TEC Voltage	chip 25°C, case 70°C	V _{TEC}		2.1		V
Thermistor Resistance	T=25°C	R _{th}	9.5	10	10.5	kOhm
Thermistor B constant		B	3850	3950	4050	K
Steinhart-Hart-Equation coefficients	C ₁ = 1.1292E-03 / C ₂ = 2.3411E-04 / C ₃ = 8.7755E-08					
Large Signal Modulation Bandwidth				200		MHz

Fiber Specifications

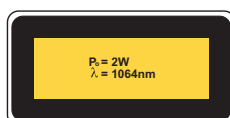
Fiber Type	Corning HI1060, single mode (PM Fiber PM980 on request)
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Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage temp.	T _{max}	-40	85	°C
Operating case temp.	T _{op, case}	-20	60	°C
Operating chip temp.	T _{op, chip}	20	30	°C
Soldering temp. (max. 10sec)		260		°C
LD Forward current	I _{op}			
	LU1064M200		500	mA
	LU1064M400		800	mA
LD Forward current	I _p (Pulse 1μs / Period 30μsec)	2.0		A
LD Reverse voltage	V _{R, max}	2		V
Monitor forward current	I _{F, PD}	5		mA
Monitor reverse voltage	V _{R, PD}	20		V
TEC Current	I _{TEC}	1.8		A
TEC Voltage	V _{TEC}	3.2		V
ESD Damage (2)		500		V
Fiber pigtail bend radius	HI 1060	25		mm
Maximum transient (<3μs) forward current		1.2		A

(2) A standard human body model (1.5kOhm, 100pF) is used for ESD thresholds

User Safety



Your ideas are welcome.