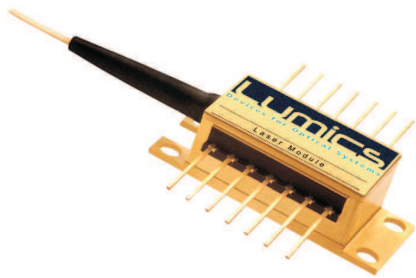


LU1064M300-1006F30H 1064nm Single Mode Laser Module, Sensing Laser c.w. or pulsed mode



The single mode fiber pigtailed laser diode module contains an optimized GaAs substrate based quantum well high power laser diode. It has been designed for customer specific signal transmission up to 160Mbit/s and is available with special FBG's and fibers to achieve locking during modulation. 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 & Functions:

- Wavelength 1064nm
- Up to 300mW c.w. operating power
- Up to 1W peak power
- Low inductive rise/fall time ~1ns

Options:

- Single mode pigtail
- FBG-option

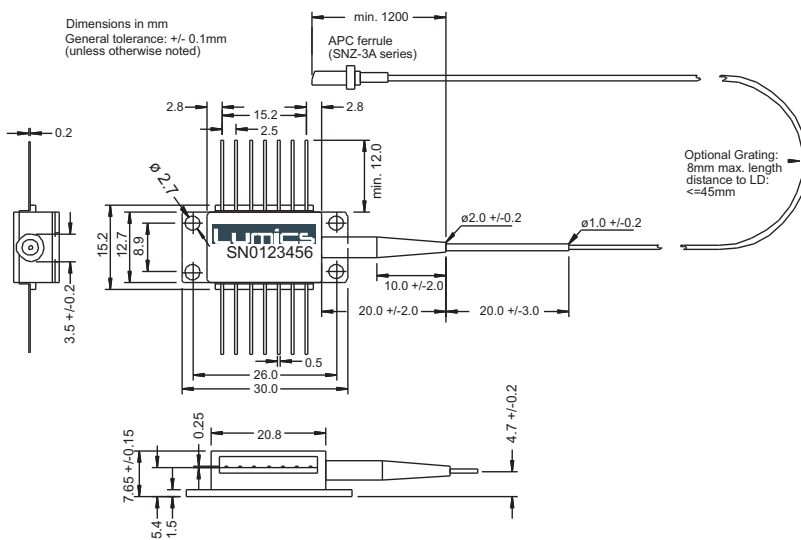
Benefits:

- All laser welded
- Field proven reliability
- Hermetic sealing
- Telcordia compliant package

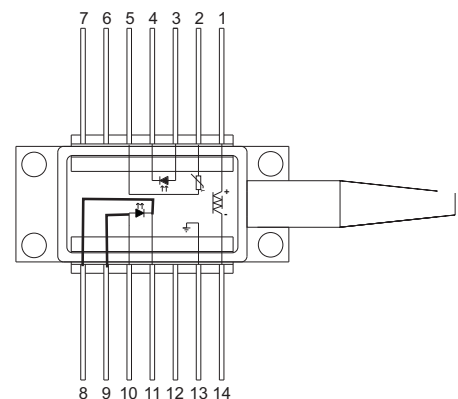
Applications:

- Sensor applications

Module Drawing (dimensions in mm)



Pin Connections



Pin	Function	Pin	Function
1	Cooler (+)	8	LD Cathode (-)
2	Thermistor	9	LD Anode (+)
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 (-)

We manufacture diode lasers.

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Operating Power	c.w.	P _{op}		300		mW
Operating Current	c.w.	I _{op}		490	600	mA
Peak Power	<=100ns d.c.<50% in 0.8µs periode>=15µs	P _{peak}		1000		mW
Peak Current	<=100ns d.c.<50% in 0.8µs periode>=15µs	I _{peak}			1.7	A
Rise and fall time (requires appropriate driver)				1		nsec
Threshold Current		I _{th}		70		mA
Forward Voltage	at I _{op}	V _{op}		1.65		V
Forward Voltage	at Peak Power V _{op_puls}			2.2		V
Peak Wavelength λ _{peak}	at P _{op}	λ	1063	1064	1065	nm
Spectral Width (FWHM)	at P _{op} with FBG	Δλ			1	nm
Spectral Shift with Temp.	FBG Temp.	Δ / T			0.02	nm/ °C
Side Mode Suppression	at P _{op} with FBG			-20		dB
Monitor Responsivity		R	0.02	1	5	µA / mW
TEC Current at Pop	chip 25°C, case 70°C	I _{TEC}		0.8		A
TEC Voltage at Pop	chip 25°C, case 70°C	V _{TEC}		1.6		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			160			MBit/s

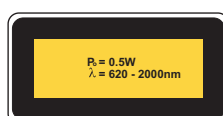
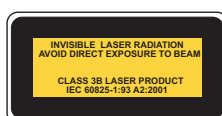
Other Specifications

Fiber Type	single mode (similar to HI1060)
FBG distance and Chip wavelenth such that wavelengh locks in pulsed mode within chip operating temperature range	
FBG distance to chip	45 mm

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage temp.	T _{max}	-40	85	°C
Operating case temp.	T _{op, case}	-20	70	°C
Operating chip temp.	T _{op, chip}	20	30	°C
Soldering temp. (max. 10sec)		260		°C
LD Forward current (c.w.)	I _{op, max}		800	mA
LD Forward current (Pulse 100ns 3% D.C.)			2	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

(2) A standard human body model (1.5kOhm, 1000pF) is used for ESD thresholds



We manufacture diode lasers.