

Pump Laser Modules

Key Features

Epoxy free design inside the Butterfly module for long term Reliability

Output power up to 500mW CW

1050-1070nm wavelength

High PER

Short pulse operation of 30ns-500ns

MTTF > 100,000h

RoHS 6/6

Applications

Fiber Lasers

Pumping and printing applications

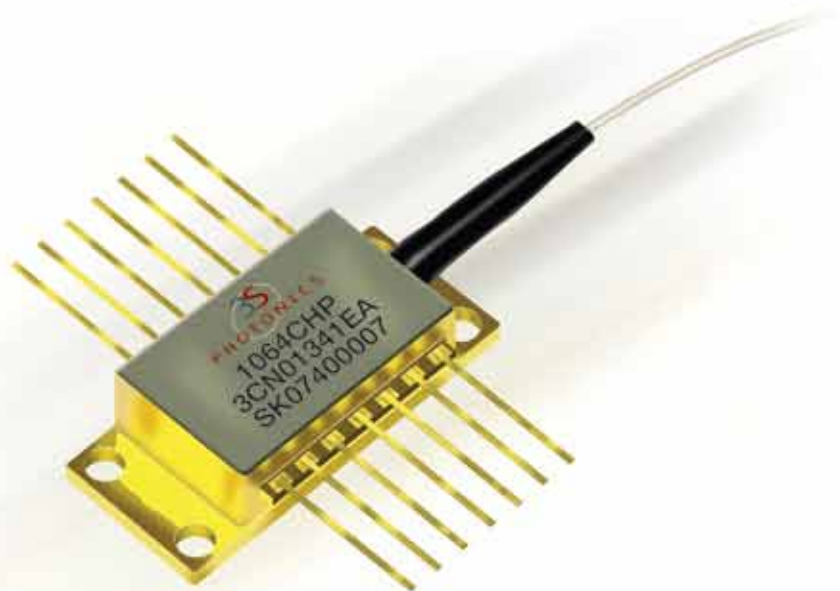
Frequency-doubling

1064 CHP 500mW 1060nm Pump Laser Module

The 1064 CHP high power single-mode laser module is a pump source designed for both pulsed and CW fiber laser applications that requires operating wavelengths in the 1050-1070nm range. The 1064 CHP series is a new pump product family from 3SPGroup which contains a new high power laser chip developed internally and fully qualified. Modules are available with a Polarization Maintaining Fiber (PMF) single mode pigtail.

They incorporate a thermoelectric cooler (TEC), a precision NTC thermistor and a back-facet monitoring photodiode.

These modules provide excellent stability with both time and temperature.



For more info

Please contact us at:

North America: **514.748.4848**
888.922.1044

Europe & Asia: **+33 (0) 1 69 80 58 33**
or via e-mail at sales@3spgroup.com

1064 CHP

500mW 1060nm Pump Laser Module



ELECTRO-OPTICAL CHARACTERISTICS

The following parameters are specified B0L for CW Operation, $T_{submount}=25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, $V_{BFM}=-5\text{V}$, -50dB max back-reflection and $T_{case}=-5^{\circ}\text{C}$ to 75°C unless otherwise stated.

Parameters	Conditions	Symbol	Min	Typ	Max	Unit
PUMP LASER						
Threshold current (1)		I_{th}	-	60	80	mA
Operating Power	@800mA	P_{op}	400	420	-	mW
	@1000mA	P_{op}	500	525		mW
Forward voltage	P_{op}	V_{nom}	-	1.6	2.0	V
Peak wavelength (2)	P_{op}	λ_p	1050	-	1070	nm
Operating peak power	<500ns / Duty cycle < 5%	P_{opp}	0.9	1.0		W
Operating peak current	<500ns / Duty cycle < 5%	I_{opp}			2	A
MONITOR DIODE						
Responsivity		I_{BFM} / P	0.5	-	10	$\mu\text{A}/\text{mW}$
Dark current	$V_r = 5\text{V}$	I_{BFM_dark}	-	50	100	nA
THERMO-ELECTRICAL COOLER						
Cooling capacity	$T_{case} = 75^{\circ}\text{C}$, $1.1 \times I_{nom}$	ΔT_{TEC}	50	-	-	$^{\circ}\text{C}$
TEC voltage (EOL)		$V_{TEC, EOL}$	-	-	3.3	V
TEC current (EOL)		$I_{TEC, EOL}$	-	-	2.0	A
TEC Power consumption		P_{TEC}	-	-	5,05	W
THERMISTOR						
Resistance	25°C	R_{th}	9.5	10	10.5	k Ω
Constant		B	3600	-	4200	K

(1) I_{th} is the intersection point with the x-axis of a linear fit of the P(I) curve between 15 and 50mW

(2) Center Wavelength target upon customer request

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Absolute Maximum Ratings

Exposing this device to stresses and conditions above those listed in this section could cause permanent damage and affect reliability. The device is not meant to operate outside the operational limits described in previous section at any length of time.

Parameter Conditions	Symbol	Min	Max	Unit
Storage temperature (2000h)	T_{stg}	-40	85	°C
Operating temperature ($T_{submount} = 25^{\circ}\text{C}$)	T_{op}	-5	75	°C
Lead soldering temperature (10s max)		-	260	°C
CW LD forward drive current (10s max)	I_{f_max}	-	1100	mA
LD reverse voltage	V_{r_max}	-	2	V
PD reverse voltage	V_{PD_max}	-	15	V
PD forward current	I_{PD_max}	-	10	mA
TEC voltage	V_{TEC_max}	-	4.2	V
TEC current	I_{TEC_max}	-	2.0	A
ESD* damage	V_{ESD}	-	500	V
Mounting torque		-	150	mN.m
Fiber bend radius		20	-	mm
Axial pull force (1 x 1min)		-	5	N

* Human Body Model, C= 100pF, R= 1.5Ω

Fiber Pigtail Characteristics

Parameters	Note	Min	Typ	Max	Unit
Fiber type		SM98-PS-U25A-H or equivalent			
Coating diameter		230	250	270	μm
Loose tube buffer diameter		885	-	915	μm
Pigtail termination	Bare fiber				

1064 CHP

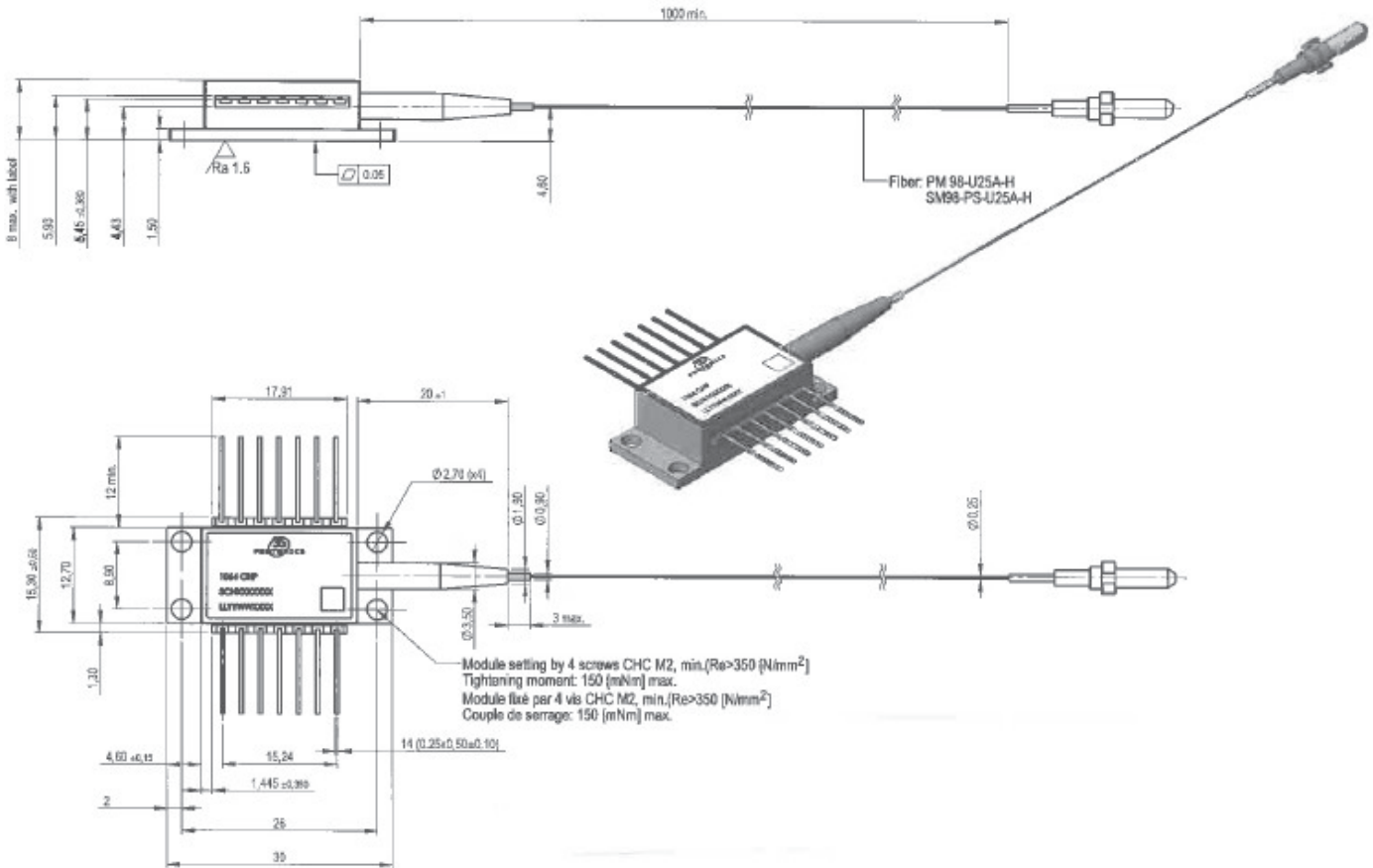
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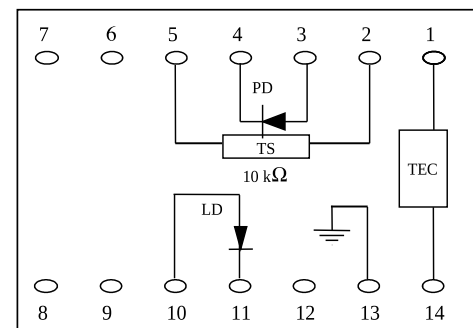
Mechanical Details

Dimensions are in mm.



Pin Assignment

N°	Description	N°	Description
1	TEC (+)	8	No connect
2	Thermistor	9	No connect
3	Monitor PD Anode	10	Laser Anode (+)
4	Monitor PD Cathode	11	Laser Cathode (-)
5	Thermistor	12	No connect
6	No connect	13	Ground
7	No connect	14	TEC (-)



Totally floating pin-out.

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Laser Safety Information

This laser module emits invisible light. Take appropriate precautions to prevent undue exposure to naked eye when module is in operation.

This product is classified Class 4 Laser Product according to IEC-60825-1.

Handling

This product is sensitive to electrostatic discharge and should not be handled except at a static free workstation.

Take precautions to prevent ESD ; use wrist straps, grounded work surfaces and recognized anti-static techniques when handling the product. Handle the module by its package only, never hold it by its pigtail.

Care should be taken to avoid supply transient currents and voltages. Drive voltage above the maximum specified in absolute maximum rating section may cause permanent damage to the device.



Ordering Information

1064 CHP pump product family – other wavelengths are available upon request.

1064 CHP module stabilized with FBG is available upon request

Nominal Operating Power (mW)	$\lambda_p = 1060 \text{ nm}$, $T = 25 \text{ }^\circ\text{C}$
	Part Number
400	3CN 01341 DA
500	3CN 01341 EA

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Please note: information in this document is typical and must be specifically confirmed in writing by your supplier before it becomes applicable to any order or contract.

Information is subject to change without notice.

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ORDERING INFO

Please contact your Sales Manager. 3SPGroup can also develop custom products to meet a wide range of technical requirements.

3SPGroup

North America: 514.748.4848

888.922.1044

Europe and Asia: +33 (0)1 69 80 58 33

www.3spgroup.com • sales@3spgroup.com