



C3

Chip on 3.1mm Submount

SINGLE-MODE
LASER DIODES

DESCRIPTION

High brightness, high quality, and high reliability are the foundation of our product lines. Sheumann's single-mode laser diodes are available with up to 500mW of output power from a single emitter chip. Sheumann's trademark laser chip design offers un-measurable degradation and long lifetimes that make our chips among the most reliable in the industry today.



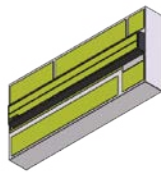
FEATURES

- Optional thermistor solder pads
- AlN carrier, AuSn bonding

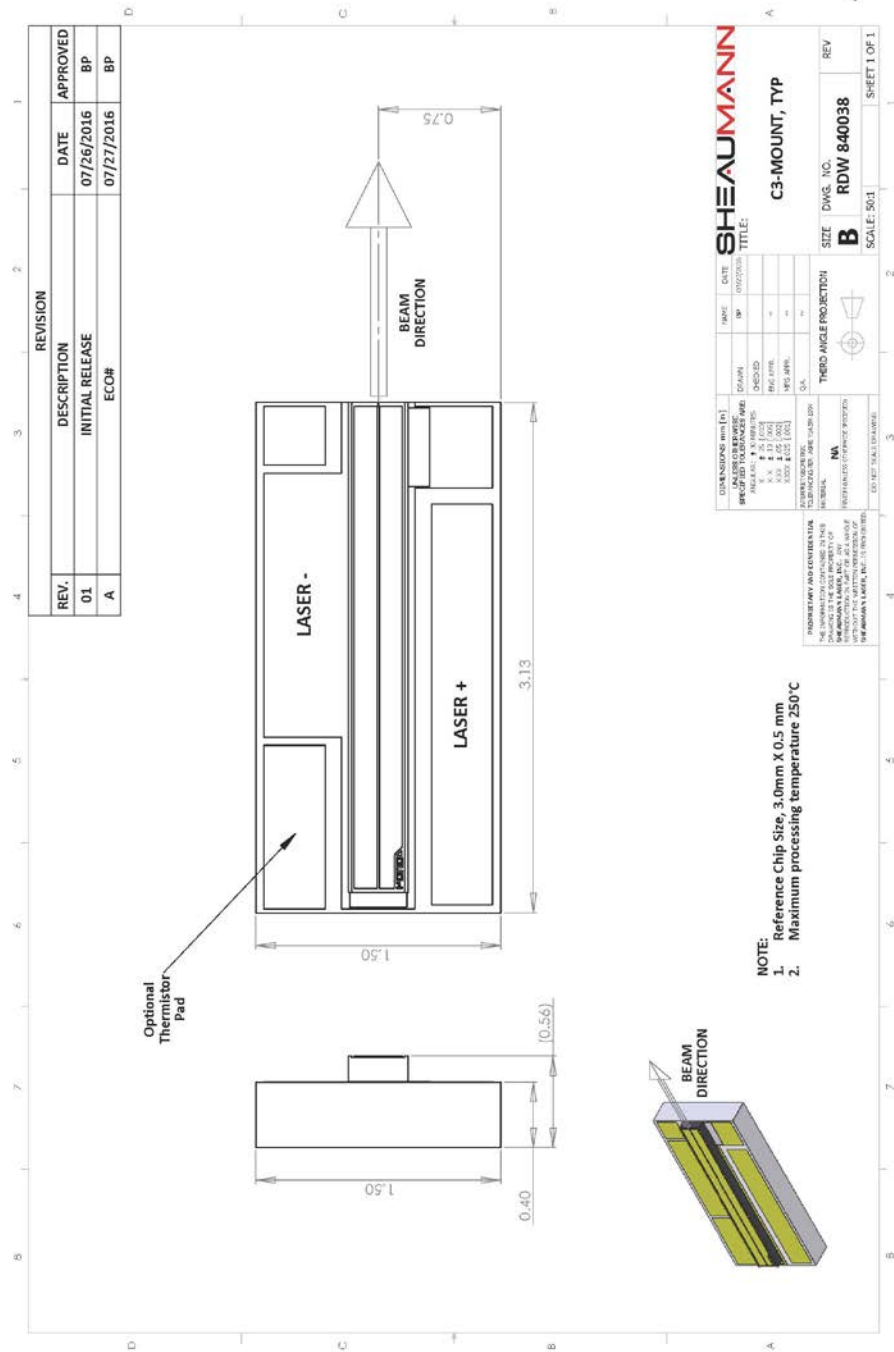
APPLICATIONS

- Raman Spectroscopy
- Laser Therapy
- Laser Pumping
- Medical
- Defense

RENDERING & LASER OUTPUT



WARNING!
Invisible laser radiation is emitted
from devices as shown above



REV.	DESCRIPTION	DATE	APPROVED
01	INITIAL RELEASE	07/26/2016	BP
A	ECOM#	07/27/2016	BP

NAME	DATE	SIZE	DWG. NO.	REV
SHEAUMANN	07/27/2016	B	RDW 840038	

TITLE: C3-MOUNT, TYP

SCALE: 3:1

SHEET 1 OF 1

NOTE:
 1. Reference Chip Size, 3.0mm X 0.5 mm
 2. Maximum processing temperature 250°C

980nm

SPECIFICATIONS

Parameter	Unit	500mW series		
		Min	Typ	Max
Wavelength ¹	nm	-	980	-
Operating Power	mW	-	500	-
Operating Current	mA	-	700	880
Operating Voltage	V	-	-	2
Threshold	mA	-	70	110
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	28	-
Horizontal Far Field @ FWHM	deg. FWHM	-	8	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

C3-980-0500-550

Chip on 3.1mm Submount 980±5nm 500mW

ALTERNATE PACKAGING OPTIONS

Please inquire about additional options.

CUSTOMIZATION OPTIONS

PACKAGE - WAVELENGTH - POWER - OPTIONS

(C3) - (780-1080nm) - (Up to 500mW) - (123)

PACKAGE

WAVELENGTH

POWER

OPTIONS

OPTIONS*

Option 1	
I	25µm-aperture
Θ	50µm-aperture (submounts, window-modules) OR 50µm-fiber, 0.22NA (fiber-coupled packages)
⊖	100µm-aperture (submounts, window-modules) OR 100µm-fiber, 0.22NA (fiber-coupled packages)
M	145µm-aperture (submounts, window-modules) OR 145µm-fiber, 0.22NA (fiber-coupled packages)
⊘	200µm-aperture (submounts, window-modules) OR 200µm-fiber, 0.22NA (fiber-coupled packages)
⊚	290µm-aperture (submounts, window-modules) OR 290µm-fiber, 0.22NA (fiber-coupled packages)
4	400µm-aperture (submounts, window-modules) OR 400µm-fiber, 0.22NA (fiber-coupled packages)
⊕	600µm-aperture (submounts, window-modules) OR 600µm-fiber, 0.22NA (fiber-coupled packages)
⊖	1000µm-aperture (submounts, window-modules)
D	SM-chip, p-down (submounts)
E	50µm-fiber, -12NA (fiber-coupled packages)
F	50µm-fiber, -15NA (fiber-coupled packages)
G	100µm-fiber, -15NA (fiber-coupled packages)
H	100µm-fiber, -22NA (fiber-coupled packages)
I	200µm-fiber, -15NA (fiber-coupled packages)
J	62.5µm-fiber, -22NA (fiber-coupled packages)
S	SM chip, p-up (submounts)
Option 2	
3	wavelength ±3nm
5	wavelength ±5nm
9	wavelength ±10nm
K	SM-FBG ±0.5nm
N	SM-narrow-bandwidth-FBG
J	SM-DM-FBG ±0.5nm
L	VFBG ±0.5nm
B	MM-FBG ±0.5nm
Option 3	
0	standard submount/chip OR fiber without connector OR welded cap for M9
A	FC/PC connector for 0.22NA, PVC-jacket
E	FC/PC connector for 0.37NA or 0.39NA, PVC-jacket
F	FC/PC 8° connector for 0.22NA, PVC-jacket
G	FC/PC 8° connector for 0.37NA or 0.39NA, PVC-jacket
B	ST connector, PVC-jacket
J	ST connector, 3mm-jacket
E	SMA connector, PVC-jacket
H	SMA connector, 3mm-jacket
I	SMA connector, armored cable
M	microlens (9x8 square beam)
U	microlens (collimated, c2)
D	5.6mm or 9.0mm TO-Can with PD welded cap (PD anode ground)
A	5.6mm or 9.0mm TO-Can with PD welded cap (PD cathode ground)
Q	5.6mm or 9.0mm TO-Can, taped or loose cap, no PD
F	5.6mm or 9.0mm TO-Can, taped or loose cap, PD
R	Thermistor
S	Ultra low AR coating (<math><0.5\%</math>)
V	High AR coating (>4%)
1	Bar with fill length >15 chips per bar
2	3-chip-bar
3	3-chip-bar
4	4-chip-bar
5	5-chip-bar
6	6-chip-bar
8	10-chip-bar

*options listed in gray are currently unavailable for this product.

OPERATING CONSIDERATIONS

Operating the diode laser outside of its maximum ratings may present a safety hazard or cause a device failure. Additionally, CW diode lasers may be damaged by excessive drive current or switching transients. When using a power supply with the component, it must be used within the specified parameters. DO NOT exceed the maximum peak optical power. Before turning the power supply on, connect the component to the power supply and ensure the output voltage value is zero. After the component has been successfully connected, increase the current slowly and monitor both the output power and drive current. Device degradation accelerates with increased temperature; therefore, careful attention to minimize the case temperature is advised. A proper heat-sink for the diode laser on a thermal radiator will greatly enhance laser life.

ESD CAUTION

The primary cause of diode failure is unexpected electrostatic discharge. To help prevent device failures, be sure to handle devices with extreme care. The user should always wear an ESD wrist strap, ground all applicable work surfaces and follow anti-static techniques when handling diode lasers.

FDA 21 CFR 1040.10

All devices are manufactured, tested and labeled in compliance with FDA 21 CFR 1040.10 regulations, as applicable under the Radiation Control for Health and Safety Act of 1968. For smaller devices, the appropriate compliance labeling may be affixed to the shipping container.

All products comply with 21 CFR Chapter 1, Subchapter J.

SAFETY

Caution: Laser light emitted from a diode may be harmful to the human eye. Avoid looking directly into the diode laser aperture when the device is in operation. Note: The use of optical instruments with this product will increase eye hazard.

NOTE

Specifications are subject to change without

Alternate package configurations and options may be available. Please inquire about additional options when contacting our sales team.

POWER OUTPUT DANGER LABEL



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