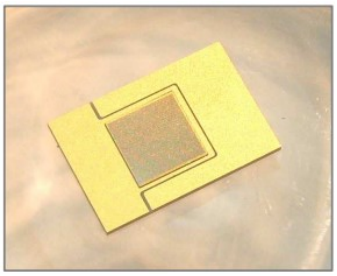
# 100W 975nm VCSEL Array Submodule

## PCW-CS1-100-W0975

- *Vertical-Cavity Surface-Emitting Laser technology*
- *Very high reliability, can operate at high temperatures (up to 80 °C)*
- *Low thermal resistance (~0.16 °C)*
- *Wavelength stabilized & narrow spectral width (< 1 nm)*
- *Easily soldered to heat exchanger*
- *Custom wavelengths available (808 - 1064 nm)*



## Optical & Electrical Characteristics

| PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| CW Output power | 135A, 25°C Heat-sink | 100 | 110 | -- | W |
| Threshold current | 25°C Heat-sink | -- | 16 | 20 | A |
| Operating current | $P_{out}$, 25°C Heat-sink | -- | 125 | 135 | A |
| Operating voltage | $P_{out}$, 25°C Heat-sink | -- | 2.1 | 2.5 | V |
| Differential resistance | $P_{out}$, 25°C Heat-sink | -- | 5.8 | 7.0 | mΩ |
| Slope efficiency | 25°C Heat-sink | 0.85 | 0.95 | -- | W/A |
| Conversion efficiency | 55W, 25°C Heat-sink | 40 | 43 | -- | % |
| Center wavelength | $P_{out}$, 25°C Heat-sink | 965 | 975 | 985 | nm |
| Spectral width (FWHM) | $P_{out}$, 25°C Heat-sink | -- | 0.8 | 1 | nm |
| Wavelength shift | 25°C Heat-sink | 0.060 | 0.065 | 0.07 | nm/°C |
| N.A. (4 sigma) | $P_{out}$, 25°C Heat-sink | -- | 0.15 | 0.17 | -- |
| Emission area | -- | -- | 4.7 x 4.7 | -- | $mm^2$ |

## Maximum Absolute Ratings

| PARAMETER | CONDITIONS |
|---|---|
| Forward current | 280 A |
| Reverse current | 25 µA |
| Operating temperature | 0 to +80 °C |
| Storage temperature | -40 to +80 °C |

## Ordering information

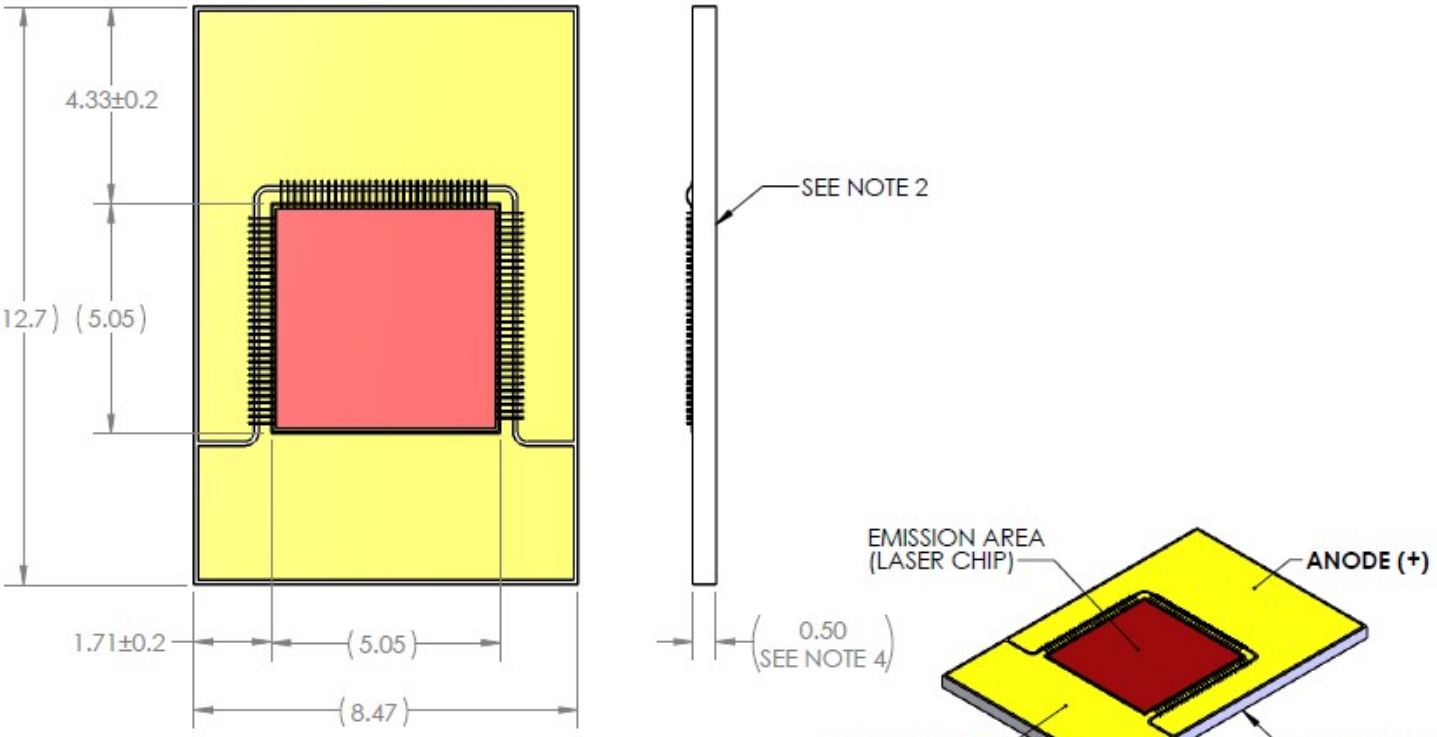
PCW – CS1 – 100 – W0975

- PCW – Heat Spreader Type
- CS1 – Heat Spreader Type
- 100 – CW Output Power (W)
- W0975 – Wavelength (nm)

Princeton Optronics, Inc. ● 1 Electronics Drive ● Mercerville, New Jersey 08619
Voice: (609) 584-9696 ● Fax: (609) 584-2448 ● e-mail: sales@princetonoptronics.com ● www.princetonoptronics.com

## Mechanical Characteristics

| PARAMETER | CONDITIONS |
|---|---|
| Package width | 8.47 ± 0.01 mm |
| Package length | 12.70 ± 0.01 mm |
| Package height | 0.60 ± 0.01 mm |
| Thermal resistance | < 0.2 °C/W |
| Max solder temperature | 140 °C |
| Metallization | Ti/Pt/Au + 12 µm Au |




NOTES:
1. ANODE AND CATHODE METALLIZATION: Au PLATING FOR WIREBONDING AND SOLDERING.
2. FULL BACKSIDE METALLIZATION: Au PLATING FOR SOLDERING.
3. WIREBONDS SHOWN FOR INFORMATION ONLY. WIREBOND SIZE, NUMBER AND CONFIGURATIONS MAY VARY.
4. SUBSTRATE THICKNESS.



Princeton Optronics reserves the right to change product design and specifications at any time without notice.
No license is granted by implication or otherwise under any patents or patent right of Princeton Optronics.
No responsibility is assumed for the use of these products, nor for any infringement on the rights of others resulting from the use of these products

Laser diode product components are intended for use in a user-devised end system. However, these products are capable of emitting Class IV radiation. Extreme care must be exercised during their operation. Only persons familiar with the appropriate safety precautions should operate a laser product. Directly viewing the laser beam or exposure to specular reflections must be avoided. Serious injury may result if any part of the body is exposed to the beam. The eye is extremely sensitive to the infrared radiation and therefore, proper eye-wear must be worn at all times. Use of optical instruments with these products may increase eye hazard. Always wear eye protection when operating.



REV.B – 8/16