Innolume GmbH
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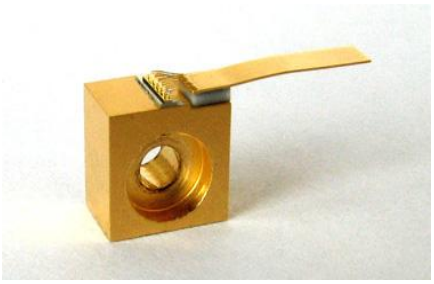
GC-1220-CM-100

High Power Gain Chip – 100mW @1220nm



Features:

- InAs Quantum Dot based single transverse mode gain chip
- Broad tuning range
- Optimized for wavelength locked operation in external cavity system
- Proprietary mirror coating technology enabling long life-time
- CW or pulse (down to 2ns pulse width) operation
- High reliable Au/Sn bonding technology

Application:	Chip design category: Type D
• External cavity tunable laser	
Specification	DATE: 24th November 2010

SPECIFICATIONS

Test conditions: CW operation, heatsink temperature 25°C

Parameters	Symb.	Min.	Typ.	Max.	Unit
Expected optical output power at the central part of the tuning range (depending on external feedback)	P_{out}	100	120		mW
Central position of wavelength locking range	λ_P	1205	1220	1235	nm
Wavelength locking range (@ min. 6% of external feedback)	$\Delta\lambda$	130	150		nm
Operating current	I_{op}		800	1100	mA
Operating voltage	U			2.0	V
Reflectivity of back facet (AR-coated)	R_{bf}	1		10	%
Reflectivity of front Facet (AR-coated)	R_{ff}			0.5	%
Fast axis beam divergence of self lasing (FWHM)	$\Theta_{\perp}$		59	62	deg
Slow axis beam divergence of self lasing (FWHM)	$\Theta_{\parallel}$		9	11	deg

ABSOLUTE MAXIMUM RATINGS

Parameters	Min	Max	Unit
Diode reverse voltage		1	V
Forward current		1200	mA
Storage temperature range (in original hermetically sealed package)	5	80	°C
Case operating temperature range	20	40	°C

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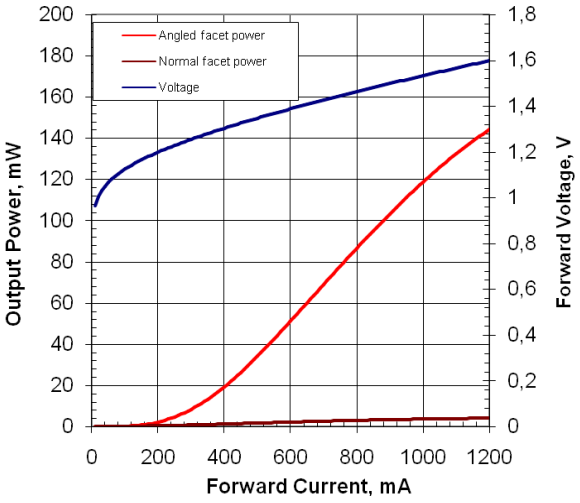
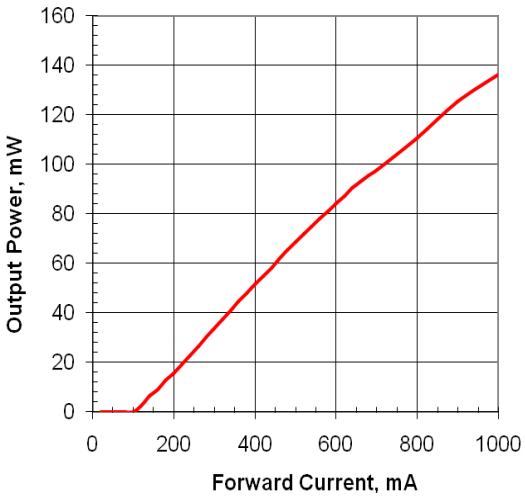
TYPICAL PERFORMANCE

Test condition: CW operation at 25°C heatsink temperature

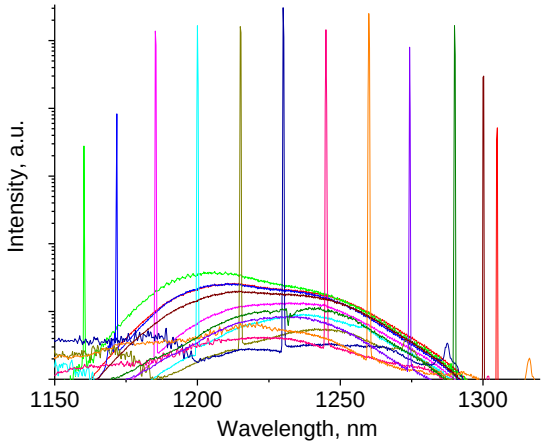
Light-Current-Voltage Characteristics without feedback



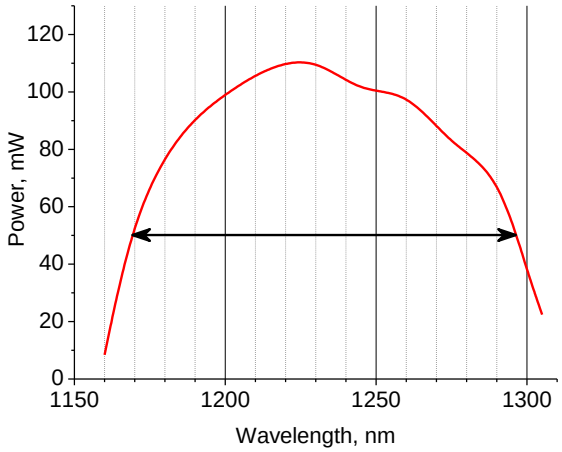
LIV with ~5% feedback at 1220nm



Spectra with ~5% feedback at different wavelength positions at 700mA



Power with ~5% feedback at different wavelength positions (I=800mA)



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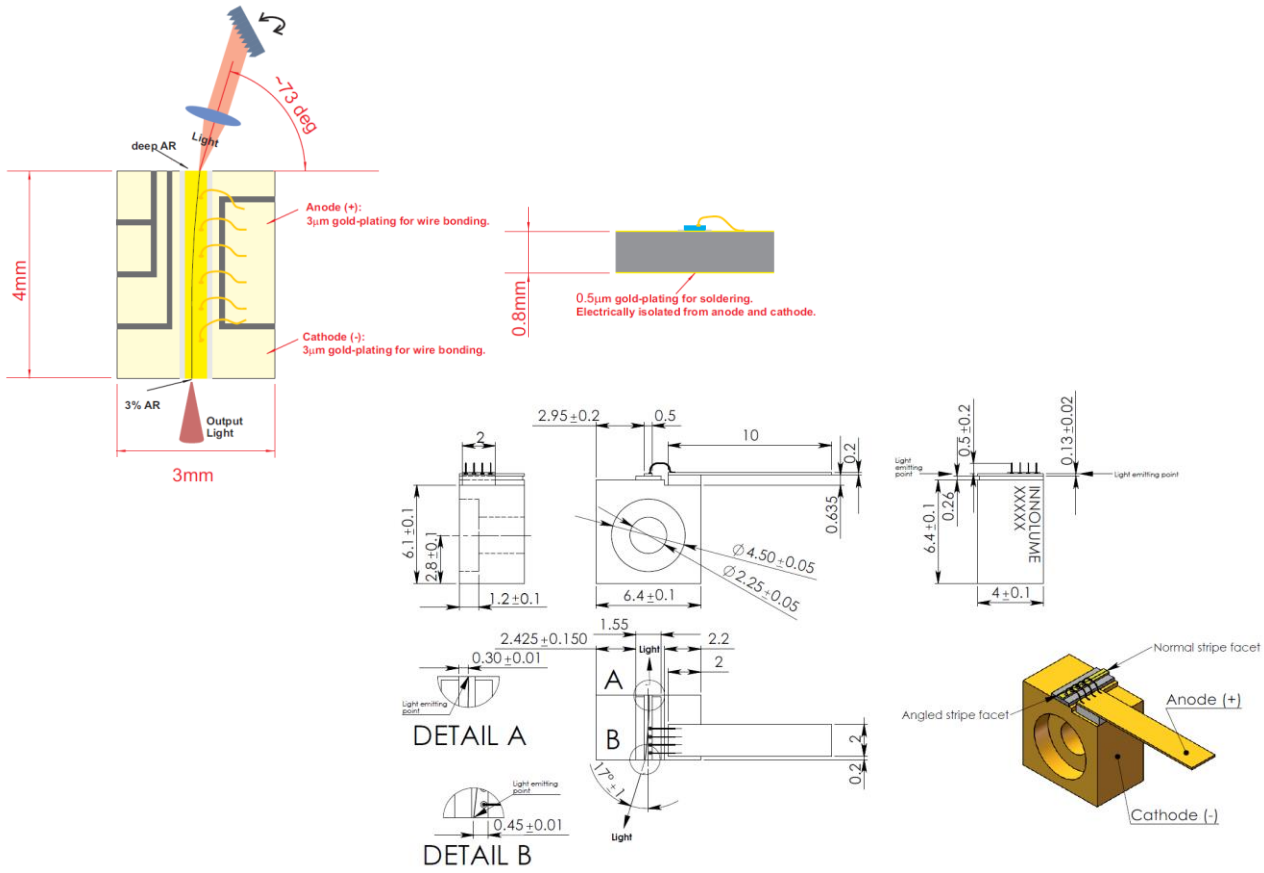
DIMENSIONS (All sizes in mm)



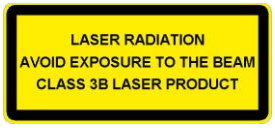
SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this Gain Chip is invisible and will harmful to the human eye. Avoid looking directly on the Gain Chip facet or into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Absolute Maximum Ratings may be applied to the Gain Chip for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device. Operating the Gain Chip outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum peak optical power cannot be exceeded. A proper heatsink for the Gain Chip is required.

The Device is an Open-Heatsink Diode Gain Chip; it may be operated in cleanroom atmosphere or dust-protected housing only. Operating temperature and relative humidity must be controlled to avoid water condensation on the laser facets. Any contamination or contact of the laser facet must be avoided.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling laser diodes.



NOTE: Innolume product specifications are subject to change without notice.