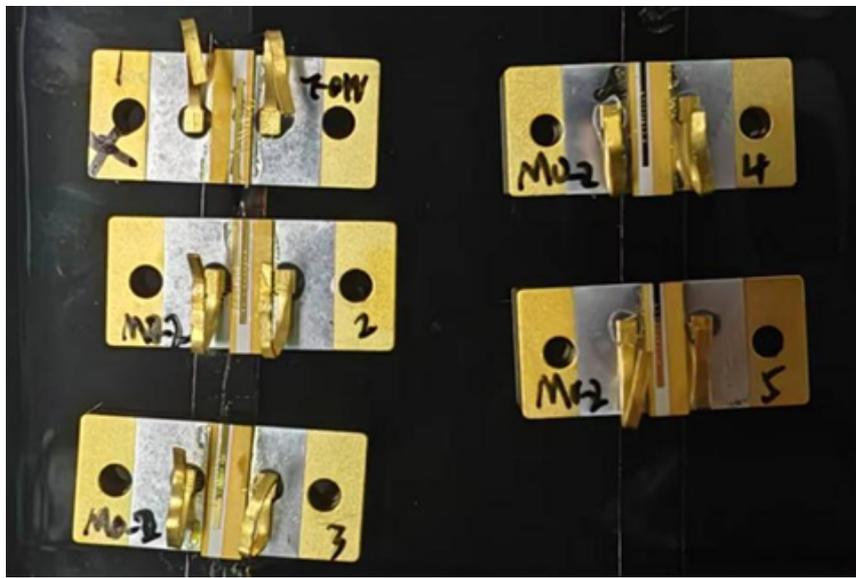


iChip.AI

4700nm 1500mW QCL LASER DIODE CHIPS

iChipQCL4700P1500



Features

- The center wavelength is 4700nm
- Excellent reliability
- High power efficiency
- RoHS compliant
- The operating temperature ranges from 15°C to 35°C

Electro-Optical Characteristics

Operating condition: Tc= 0-75 °C and all values are at BOL unless otherwise specified

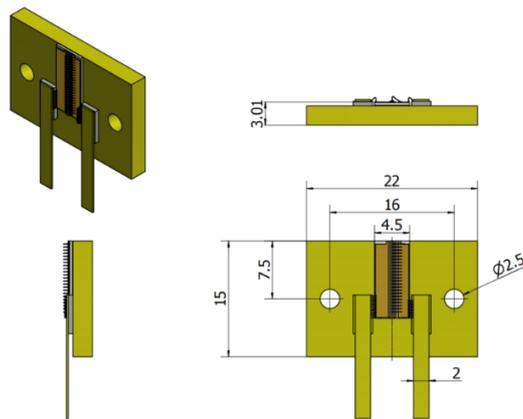
Item	Symbol	Min	Typ	Max	Unit
Operation					
Central Wavelength	λ	4500	4700	4800	[nm]
Optical Output Power	P_{opt}		1.5		[W]
Operation Mode			CW		
Power Modulation			100		[%]
Geometrical					
Emitter Width	W		7		[μ m]
Emitter Pitch	P		500		[μ m]
Cavity Length	L	9990	10000	10010	[μ m]
Thickness	D	110	130	150	[μ m]
Electro Optical Data					
Fast Axis Divergency	θ_{\perp}			50	[deg]
Slow Axis Divergency (FWHM)	θ_{\parallel}			10	[deg]
Spectral Bandwidth (FWHM)	$\Delta\lambda$		3	4	[nm]
Slope Efficiency	η				[W/A]
Conversion Efficiency			5		[%]
Threshold Current	I_{th}		0.5	1.3	[A]
Operating Current	I_{op}		1.9	2.0	[A]
Operating Voltage	V_{op}		17	20	[V]
Temperature Characteristics ($d\lambda/dT$)			0.3		[nm/°C]
Polarization			TE		
LD Operating Temperature		15	25	35	[°C]

Note 1: We perform SMSR measurements at chip level under certain pre-defined conditions and with production specs. In applications, the SMSR, like all of other parameters in this table, performance will depend on not only chip performance but also its assembling process. If the chip is assembled in a proper way, the performance described in this table can be expected.

Environmental Exposure Ratings

Parameter	Symbol	Condition	Max Rating	Unit
Storage Temperature	Tstg		-40 to 100	[°C]
Operating Temperature	Top		15 to 35	[°C]
Storage Relative Humidity	RH%		85	[%]
Die Attach Temperature		Max 10 sec.	320	[°C]
HBM ESD Threshold	ESD		1500	[V]

Dimensions and Layout



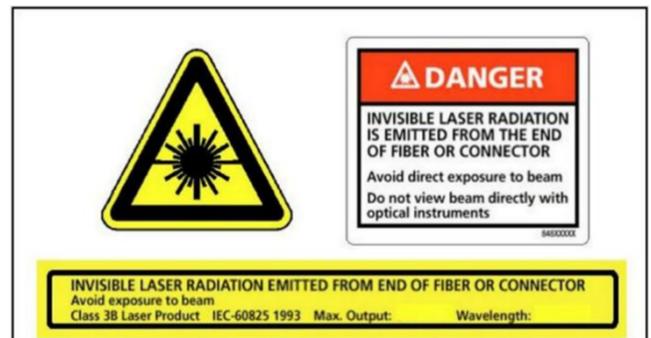
Parameter	Symbol	Min.	Typ.	Max.	Unit
Cavity length	L	20	22	24	mm
Die width	W	14	15	16	mm
Die thickness	T	2.9	3	3.1	mm

RoHS Compliance

iChip.AI is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by iChip.AI before they become applicable to any particular order or contract. In accordance with iChip.AI policy of continuous improvement specifications may change without notice. Further details are available from any iChip.AI sales representative.



Regulatory Compliance and Safety Warnings

- These laser components produce invisible radiation at wavelengths of 4700 nm.
- Avoid direct eye exposure.
- This laser component is not serviceable.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- This laser component is designated for use solely to be incorporated into a finished laser product. The finished laser product must be evaluated and certified to the relevant laser safety standards.