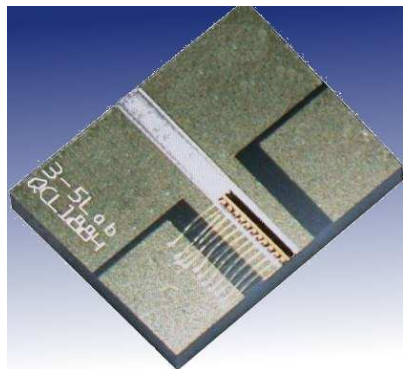


# 1631 cm<sup>-1</sup> DFB QCL



## Application

- NO<sub>2</sub> detection

## Features

- Distributed FeedBack (DFB) Quantum Cascade Laser (QCL)
- Wavelength specified at 1631 cm<sup>-1</sup> (6.13 μm)
- Pulsed operation (DC up to 5%)
- Up to 200 mW peak optical power
- Operating temperature range: 10°C to 35°C
- Mounted on a passive heatsink

## Recommended operating conditions

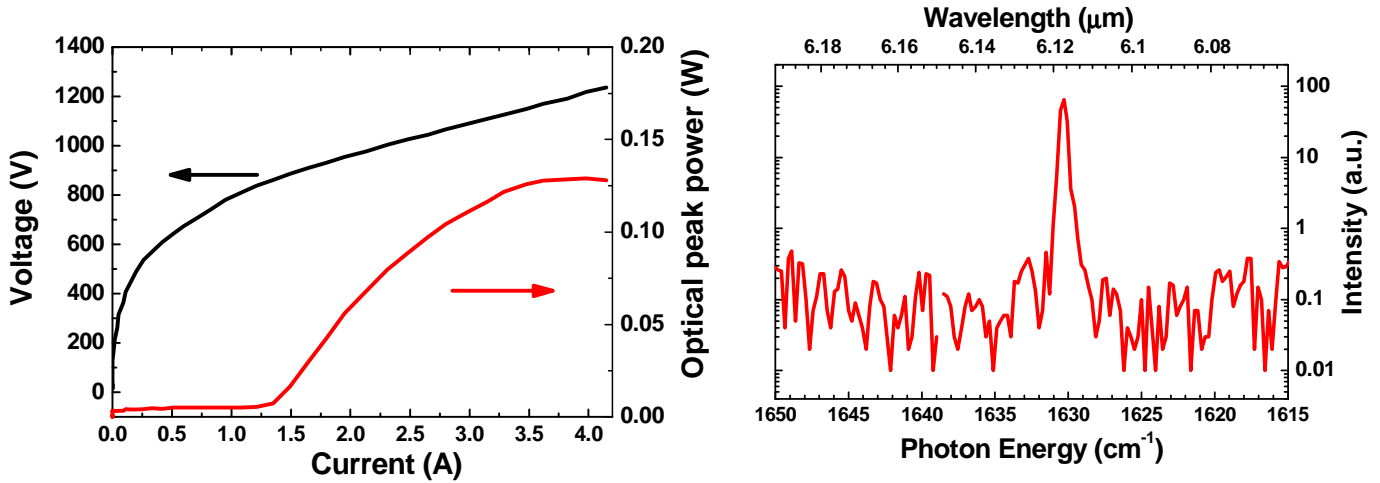
Operating Parameters	Symbol	Unit	Min	Typ	Max
Temperatures	T	°C	10	20	35
Pulse Repetition Frequency	PRF	kHz	-	100	150
Pulse length	t <sub>pulse</sub>	ns	-	500	1000
Duty Cycle	DCy	%	-	3	5

## Typical Laser characteristics

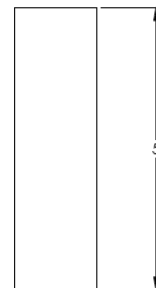
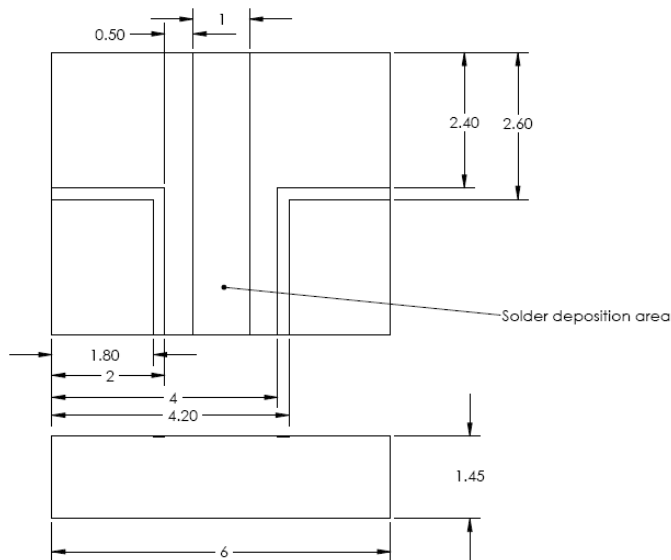
Parameters	Symbol	Unit	Typical Value
Reciprocal wavelength @ 20°C	n	cm <sup>-1</sup>	1631
Side Mode Suppression Ratio (SMSR)	SMSR	dB	30
Temperature Coefficient of Wavelength		cm <sup>-1</sup> .K <sup>-1</sup>	0,1
Chirp rate		cm <sup>-1</sup> .ns <sup>-1</sup>	0,005
Max peak output Power @ 20°C, Dcy 5%	P <sub>opt</sub>	mW	150
Slope Efficiency	h <sub>d</sub>	mW/A	100
Threshold Current	I <sub>th</sub>	A	1
Threshold Voltage	U <sub>th</sub>	V	10

# 1631 cm<sup>-1</sup> DFB QCL

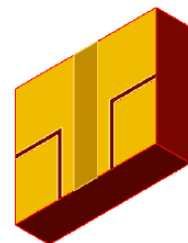
## Typical performance



## Outline drawing



- Notes: 1/ AlN (170W/mK) 1.45mm thick  
2/ Bottom surface full Au solderable  
3/ Top surface patterned Au finish wire bondable/solderable  
4/ material finish both sides AlN Ra 100nm  
5/ Indicated area on top surface requires 3-5um predeposited Au80Sn20 solder



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