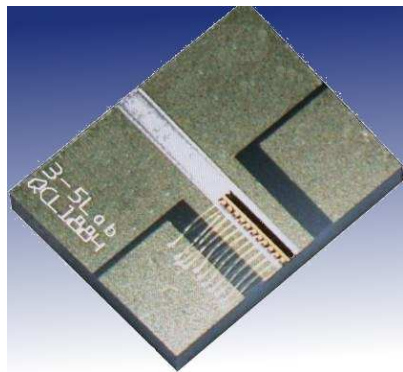


1345 cm⁻¹ DFB QCL



Application

- H₂S, CH₄, SO₂ detection

Features

- Distributed FeedBack (DFB) Quantum Cascade Laser (QCL)
- Wavelength specified at 1345 cm⁻¹ (7.43 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

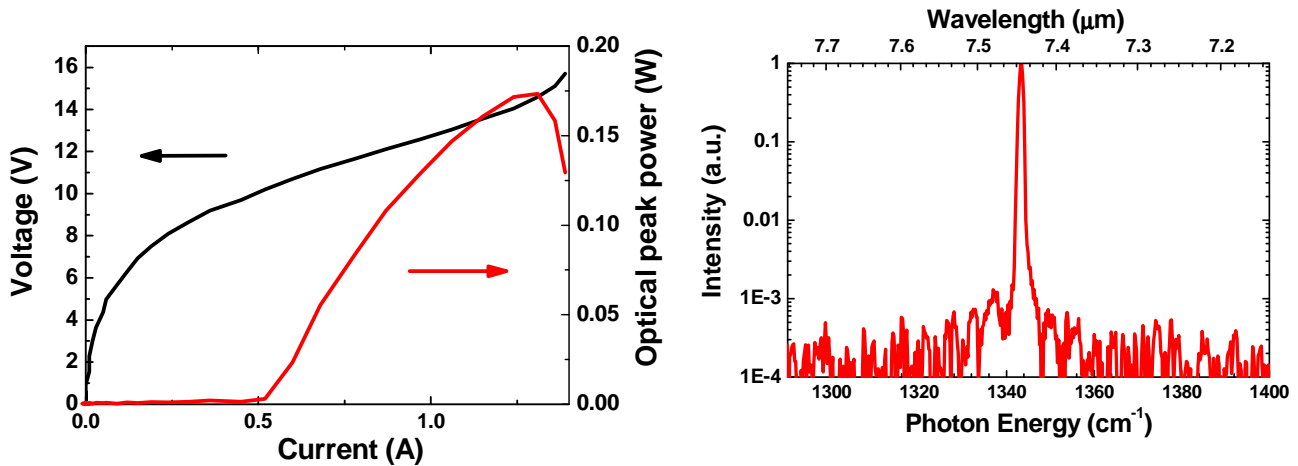
Recommended operating conditions

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

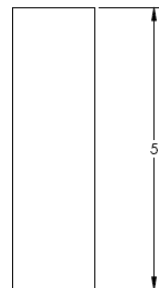
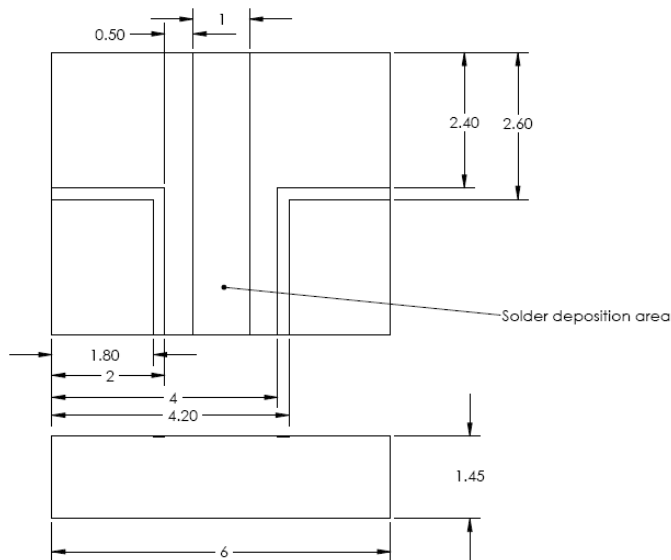
Typical Laser characteristics

Parameters	Symbol	Unit	Typical Value
Reciprocal wavelength @ 20°C	n	cm ⁻¹	1345
Side Mode Suppression Ratio (SMSR)	SMSR	dB	30
Temperature Coefficient of Wavelength		cm ⁻¹ .K ⁻¹	0,1
Chirp rate		cm ⁻¹ .ns ⁻¹	0,005
Max peak output Power @ 20°C, Dcy 5%	P _{opt}	mW	200
Slope Efficiency	h _d	mW/A	200
Threshold Current	I _{th}	A	0.5
Threshold Voltage	U _{th}	V	12

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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