

# QLight™ C-Amp

Models CL, CM, and CH

## Features

- ◆ 14-Pin MSA Package
- ◆ Wide Optical Bandwidth
- ◆ C Band (1550 nm) Coverage
- ◆ Supports Rates Up to 160 Gb/s
- ◆ Low Polarization Dependence
- ◆ High Output Power

## Applications

- ◆ Transmit Booster
- ◆ Receiver Pre-Amplifier
- ◆ In-Line Amplifier
- ◆ Loss Compensation
- ◆ Gain Medium for Swept Sources



## Description

The QLight™ C-Amp is a semiconductor optical amplifier (SOA) designed for communications, fiber optic sensing, medical imaging, and test and measurement applications. It is based on Alphion proprietary QLight™ technology platform for the manufacturing of advanced discrete photonics and photonic integrated circuits (PICs).

The C-Amp is available in the MSA compliant, 14-pin butterfly package, based on Alphion standard packaging platform. The use of a laser-welded, hermetic, organics-free package ensures highly reliable operation. The package incorporates both a thermistor and thermo-electric cooler to provide stable operation of the SOA over the full operating temperature range. The product is available in three models, CL, CM, and CH, differentiated by the level of gain provided.

The Alphion QLight™ C-Amp has unsurpassed performance in amplification of burst-mode traffic and when used in broadly tunable laser sources.



# Models CL, CM, and CH SPECIFICATIONS

## Absolute Maximum Ratings\*

Parameter	Symbol	Min	Typ	Max	Unit	Note
Operating Temperature	$T_{case}$	0		70	$^{\circ}C$	
Storage Temperature	$T_{store}$	-40		85	$^{\circ}C$	
Operating Bias Current	$I_f$			300	mA	CL Model; 450 and 600 for CM and CH
Optical Amplifier Reverse Bias	$V_{rev}$			2	V	
Thermistor Current	$I_{therm}$			5	mA	
TEC Current	$I_{TEC}$			1.8	A	
TEC Voltage	$V_{TEC}$			3.4	V	

\* Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational section of the datasheet. Exposure to Absolute Maximum Ratings for extended periods can adversely affect the device reliability.

## Operating Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Note
Operating Wavelength	$BW_{op}$	1525		1565	nm	
Peak Gain	$G_{pk}$	5		30	dB	Varies by C-Amp model
Peak Gain WL	$\lambda_{pk}$		1545		nm	
BW Gain Flatness	$GF_{BW}$		1.0		dB	
Gain Ripple	GR		0.2		dB	
Noise Figure	NF		6.0		dB	Max gain pol., -20 dBm input power
Polarization Dependent Gain	PDG		1.0		dB	
Saturation Output Power	$P_{1dB}$		10		dBm	1.0 dB gain compression
Saturation Output Power	$P_{3dB}$		13		dBm	3.0 dB gain compression
Forward Voltage	$V_f$		2		V	
Operating Bias Current	$I_{op}$	120		420	mA	Varies by C-Amp model
Thermistor Resistance	$R_{therm}$		10		k $\Omega$	At 25 $^{\circ}C$
Total Power Consumption	P		2.2	4	W	$T_{case} = 70^{\circ}C$

Specifications are subject to change without notice.

Pin Assignments			
1	TEC (+)	14	TEC (-)
2	Thermistor	13	NC
3	NC	12	NC
4	NC	11	Chip (-)
5	Thermistor	10	Chip (+)
6	NC	9	NC
7	NC	8	NC

