


## 760nm Single mode VCSEL in TO46

### Features:

- Stable single mode operation without mode hops
- Stable polarization
- Highly symmetric Gaussian beam profile
- Wide emission wavelength tuning by temperature and current
- Narrow line width
- High reliability
- Flat window hermetic TO46 package
- AR coated glass window
- Other wavelength ranges available on request
- RoHS compliant 

### Applications:

- Oxygen sensing
- Other spectroscopic applications



Oclaro's 760nm VCSELs are designed to meet the requirements for the optical measurement of oxygen concentration levels as well as other spectroscopic applications. The laser emits a single transverse and longitudinal mode with stable linear polarization, small divergence and a highly symmetrical Gaussian beam shape. The VCSEL is assembled in a hermetic TO46 package with flat AR coated glass window.

## Electro – Optical Characteristics\*

Parameter	Symbol	Conditions	Ratings			Unit
			Min	Typ	Max	
Threshold current	$I_{th}$		1.0	3.0	4.0	mA
Operating current	$I_{op}$	$P_{op} = 300\mu W$	2.0	4.0	6.0	mA
Operating voltage	$U_{op}$	$P_{op} = 300\mu W$		2.4	3.5	V
Differential resistance	$R_d$	$P_{op} = 300\mu W$		130	250	$\Omega$
Emission wavelength	$\lambda$	APC1101010312 ( $P_{op} = 300\mu W$ )	758.0		766.0	nm
		APC1101010313 ( $P_{op} = 300\mu W$ ) <sup>(1)</sup>	759.0		766.0	nm
Maximum single-mode output power	$P_{sm}$	SMSR $\geq 20$ dB	0.4	0.6		mW
Slope efficiency	$\eta$	$P_{op} = 300\mu W$	0.1	0.3	0.4	mW/mA
Beam divergence	$\Theta$	$P_{op} = 300\mu W$ , FWHM		13		$^\circ$
Linewidth	$\Delta\nu$	$P_{op} = 300\mu W$		20		MHz

(1) Excluding wavelengths from 761.5... 763 nm (no O<sub>2</sub> absorption line)  
 SMSR = side mode suppression ratio; FWHM = full width half maximum

## Thermal Characteristics

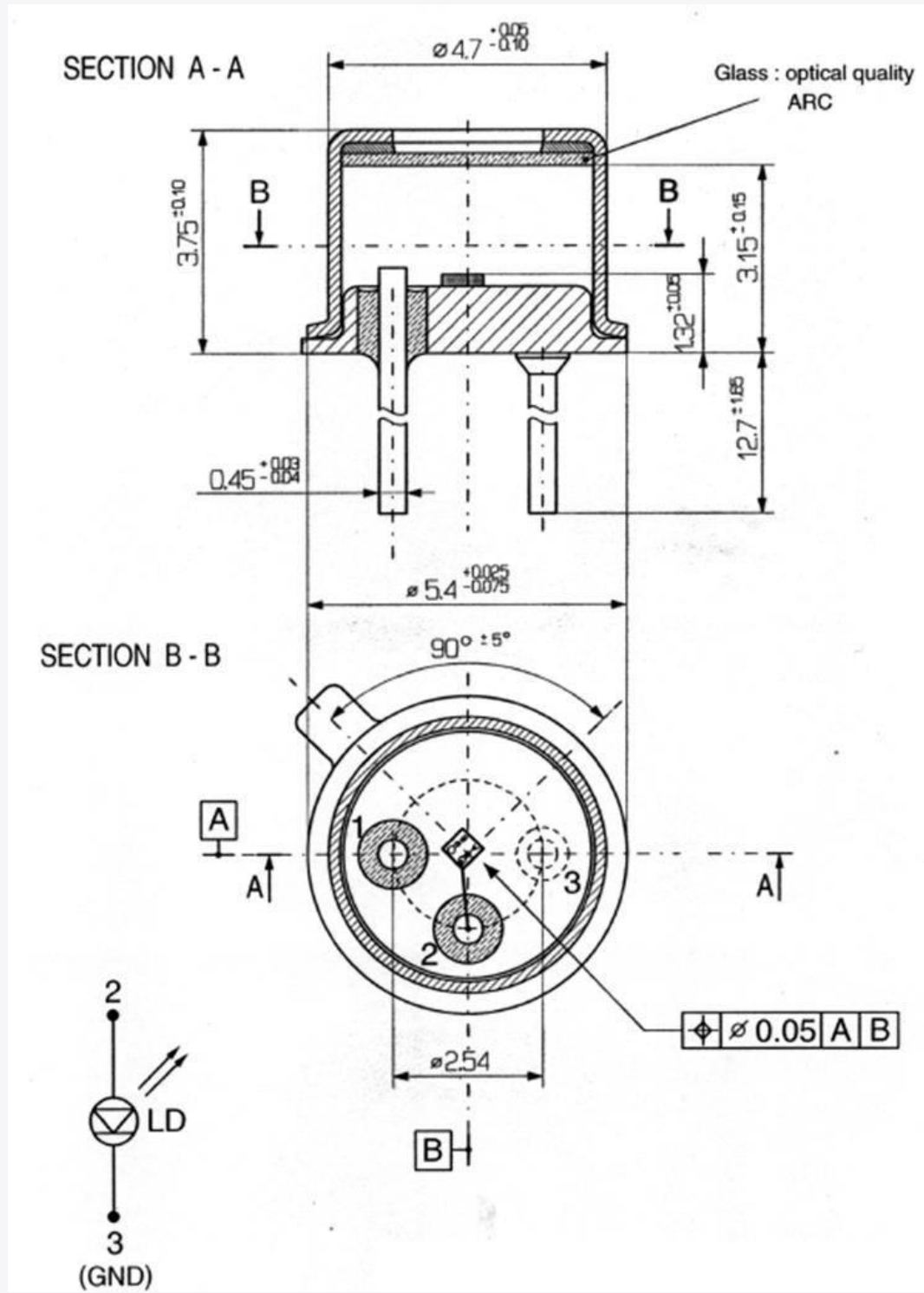
Parameter	Symbol	Ratings			Unit
		Min	Typ	Max	
Temperature tuning coefficient	$\delta\lambda/\delta T$		0.06		nm/K
Current tuning coefficient	$\delta\lambda/\delta I$		0.3		nm/mA
Thermal impedance	$Z_{th}$		1.5		K/mW
Threshold current variation 0°C - 60°C	$\Delta I_{th,T}$		1.3		mA

\*T=25°C unless otherwise noted

## Absolute Maximum Ratings

Parameter	Rating	Unit
Optical output power	3	mW
Peak forward current	10	mA
Operating temperature	0 to +60	$^\circ C$
Storage temperature	-40 to +100	$^\circ C$
Lead solder temperature (for 10sec)	260	$^\circ C$

Mechanical Dimensions and Electrical Connection



**RoHS Compliance**



Oclaro 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.

**Ordering Information:**

Product Code	Package	Description
APC1101010312	TO46	758.0...766.0nm
APC1101010313	TO46	759.0...761.5nm or 763.0...766.0nm

**Contact Information**

[www.oclaro.com](http://www.oclaro.com)

**Important Notice**

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



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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