


850nm Polarization Locked Single Mode VCSEL in TO46

Bookham's single mode VCSELs are designed to meet stringent specifications for a broad range of optical sensing applications. This product offers polarization stable single mode emission with a symmetrical Gaussian beam profile and output powers of typically 1mW. Bias currents range from 3 to 6mA.

Features

- Single transverse and longitudinal mode
- Polarization stable emission
- Low power consumption
- Gaussian beam profile
- High reliability and long term stability
- RoHS compliant 

Applications

- Laser mouse
- Optical sensor applications
- Optical encoder

Product Code	Description
APA8101013512	850nm polarization locked SM VCSEL in TO46 without window



Electro-optical Characteristics

Operating conditions: $T_{op}=5^{\circ} - 45^{\circ}\text{C}$; $I_{op}=\text{const.}$, set at 25°C so that $P_{op}=0.7\text{mW}$

Parameter	Symbol	Conditions	Ratings			Unit
			Min	Typ	Max	
Threshold current	I_{th}	$T=25^{\circ}\text{C}$	1	2.5	5	mA
Slope efficiency	η	$T=25^{\circ}\text{C}$, $I=I_{th} + 1\text{mA}$	0.15	0.35	0.55	mW/mA
Operating current	I_{op}	$T=25^{\circ}\text{C}$, $P_{op}=0.7\text{mW}$	2		7	mA
Operating voltage	U_{op}	Operating conditions			2.3	V
Single mode optical output power	P_{SM}	$T=25^{\circ}\text{C}$	0.8			mW
Side mode suppression ratio	SMSR	$T=25^{\circ}\text{C}$, $P_{op}\leq 0.8\text{mW}$	10			dB
Emission wavelength	λ	Operating conditions	840	850	860	nm
Beam divergence	Θ	Full width $1/e^2$, $T=25^{\circ}\text{C}$, $P_{op}=0.7\text{mW}$	13	17	21	$^{\circ}$
Differential resistance	R_{diff}	$P_{op}=0.7\text{mW}$	20		90	Ω
Optical power variation over temperature	$P(T)-P_{op}$	$I=I_{op}$, $T=5..45^{\circ}\text{C}$	-200		+200	μW

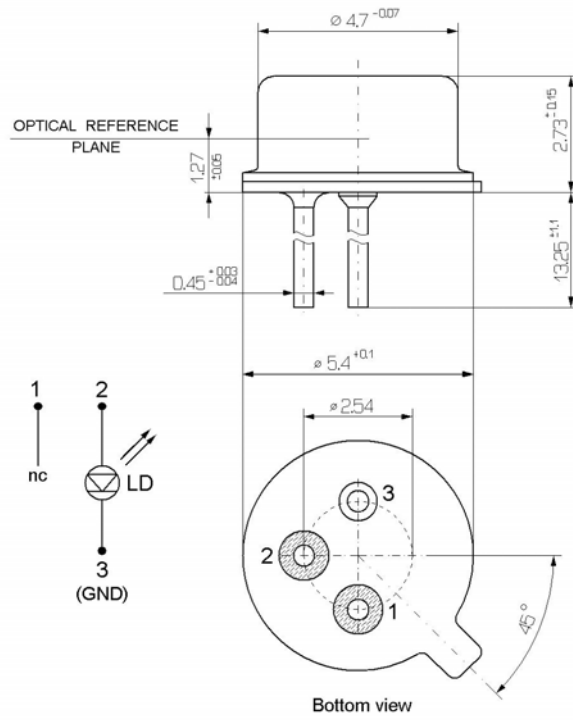
Polarization

- Laser operates with stable linear polarization
- No polarization flips in the operating range

Absolute maximum Ratings

Parameter	Min	Max	Unit	Condition
Continuous operating current		8	mA	
Continuous reverse voltage		8	V	

Package Outline and Electrical Connections



Unless otherwise specified all dimensions are in millimeters

RoHS Compliance



Bookham 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
APA8101013512

Description
850 nm polarization locked VCSEL in TO46 without window

Contact Information

**Bookham (Switzerland)
AG Sales Contact**
Binzstrasse 17
8045 Zurich
Switzerland

• **Tel: +41 44 455 8787**
• **Fax: +41 44 455 8586**

www.bookham.com
vcsel@bookham.com

EMEA Sales Contact

Gunnar Stolze
• **Tel: +41 79 635 3777**

North America – East Coast Sales Contact

Michael Cutler
• **Tel: +1 678 763 0777**

North America – West Coast Sales Contact

Deepika Ranaweera
• **Tel: +1 678 763 0777**

Asia Sales Contact

Denis Lu
• **Tel: +86 135 1066 0826**

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Safety Labels

