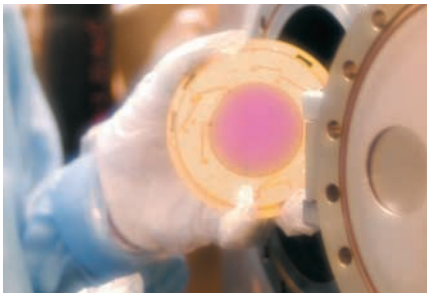
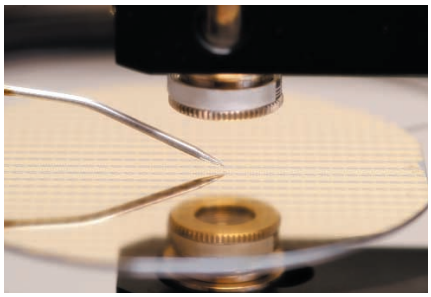




Description

VERTILAS VL-1550 series are single-mode uncooled VCSEL Lasers emitting at wavelengths around 1550nm. Other wavelengths in the 1400nm-1600nm range are available on request.
The vertical cavity structure offers good threshold, low operating current and excellent modulation performance.
The case operating temperature range goes from -20°C to 70°C (non condensing).

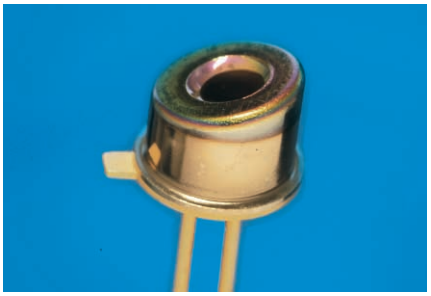
Applications

The product is designed to address a wide variety of optical communication applications such as Gigabit Ethernet, Fiber Channel, SONET/SDH, CWDM. Perfectly adapted to low power, low footprint transceivers such as SFP, XFP, X2, XPAK

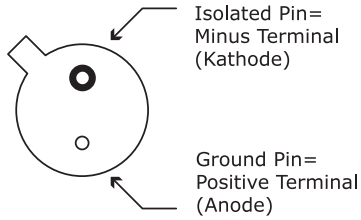
Features

· Low power consumption, low threshold current
· Individual laser data sheets after complete characterization
· Several packaging options with small footprint

TO-46 package with optional AR coated sealed cap



Pin Assignment (Bottom View)



Ordering Information

1550nm+/-10nm, 1.0mW typ., TO-46 (5.4mm)
VL-1550-10-TK-D-R4 ring (open cap)
VL-1550-10-TK-D-A4 angle cap, AR coating

Important Notes

1. **Non condensing operating conditions**
   If the package isn't hermetically sealed, at temperatures under the dew point, it is necessary to operate the device in a dry environment.
2. **ESD precautions**
   ESD precautions must be taken when handling this product.
3. **Eye protection warning**
   Be sure to avoid direct exposure of human eyes to the invisible beams emitted by this laser device in operations.

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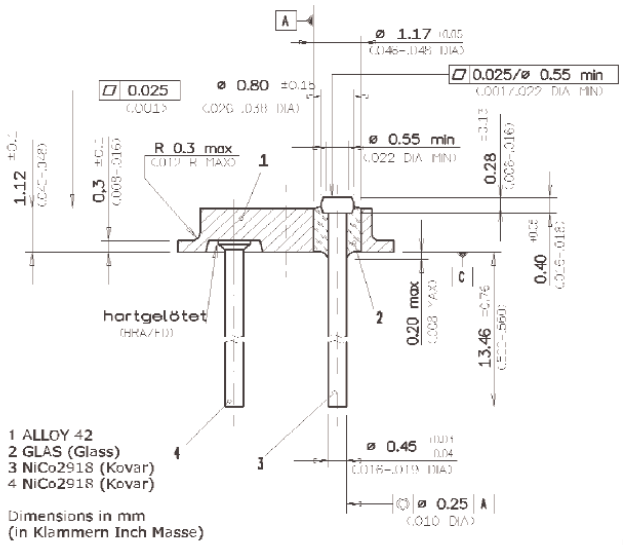
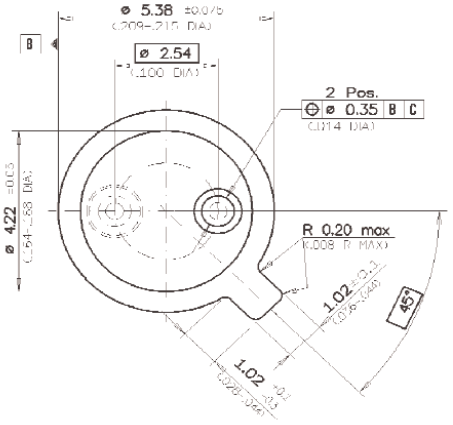
Sales requirements: sales@vertilas.com
Further information: info@vertilas.com

Electrical / Optical Characteristics at T_0 = 25°C

Parameter	Condition	Symbol	Units	Ratings		
	T_0=25°C case temperature			Min	Typ	Max
Operating Wavelength	T_0, at P_{max} / 2	λ_0	nm	1540	1550	1560
Maximum Optical Power	T_0	P_{max}	mW	0.7	1.0	1.5
Threshold Current	T_0	I_{th}	mA	0.6	1.1	2.0
Threshold Current variation with temperature	-20°C < T < 70°C	$\Delta I_{th}(T)$	%	10	30	50
Operating Voltage at P_{max}	T_0	V_{max}	V			2.0
Absolute Maximum Current	T_0	I_{max}	mA			15
Minimum Operating Current	T_0	I_0,min	mA		2x I_{th}	
Temperature tuning coefficient	λ_0	$\Delta\lambda/\Delta T$	nm/°C	0.08	0.11	0.15
Maximum slope efficiency	T_0	η	mW/mA	0.1	0.2	0.3
Side Mode Suppression Ratio	Including transverse and polarization modes at P_{max}	SMSR	dB	25	40	
Cut off frequency	T_0	f_{3db}	GHz		3	
Spectral Line Width	T_0	Δf	MHz		30	
Differential resistance	T_0	R_{diff}	Ω	40	60	80
Beam Divergence	Full width at half maximum	FWHM	degree	12	20	30

Plain TO-46 Header Dimensions in mm (inch)





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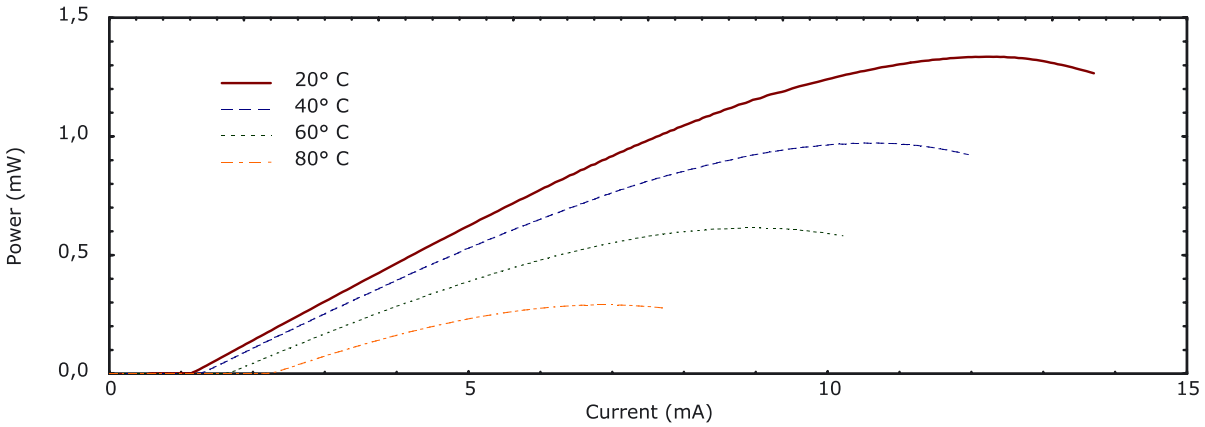
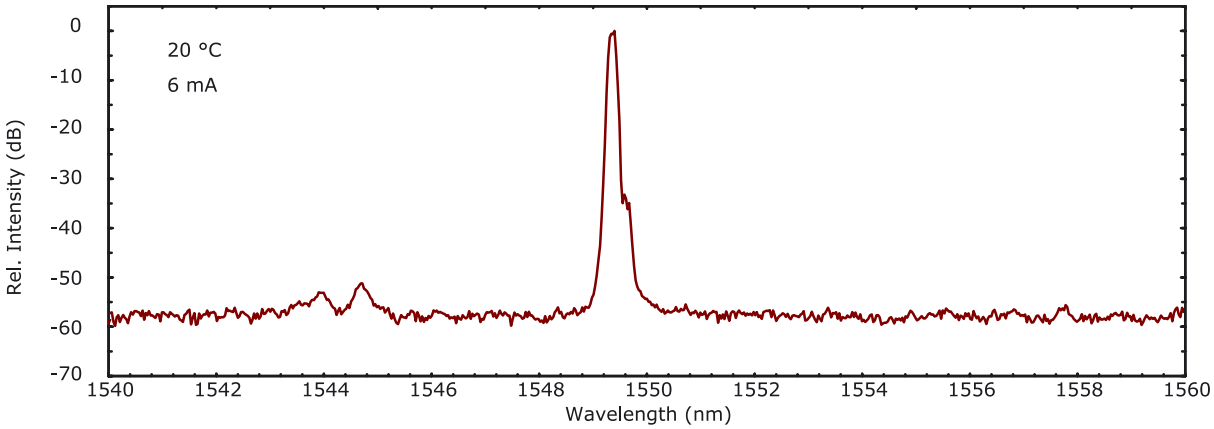
Characterization measurement example: VL-1550-10-TK-D-R4

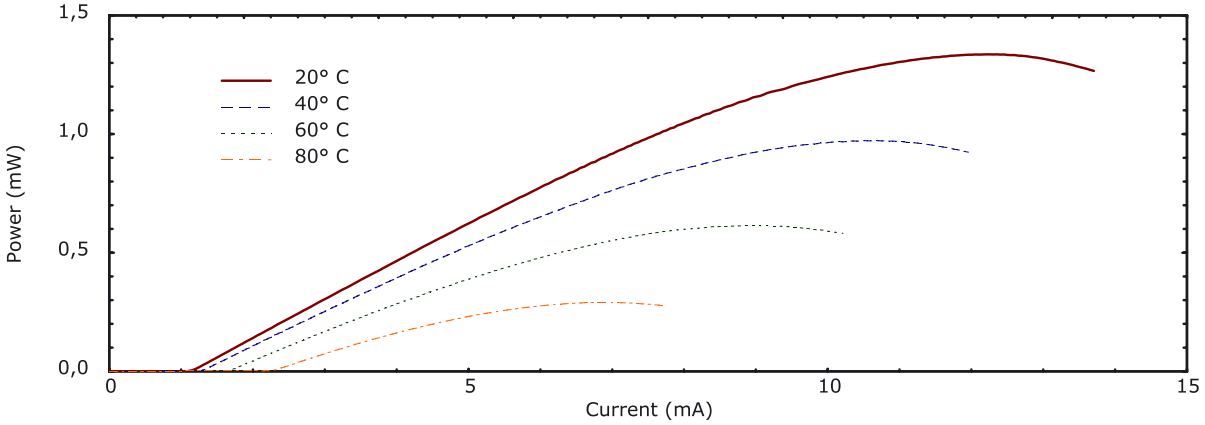
Typical LIV Characteristics at T_0 = 20°C and 30°C



Typical Spectrum Characteristics at T_0 = 20°C



Typical Power Variations with Temperature



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