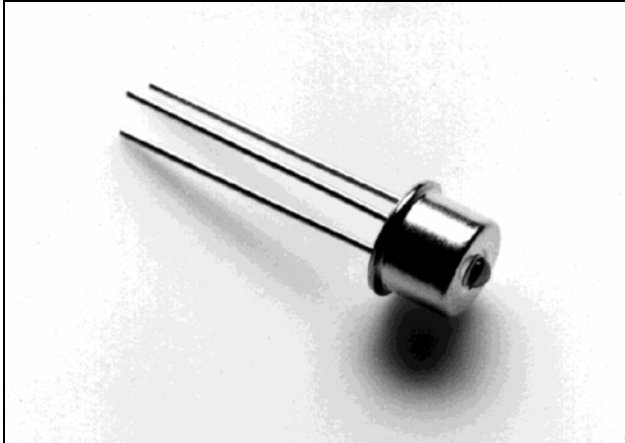


August 2004

**Ordering Information**

ZL60005/TBD	TO-46 Package
ZL60005/TDD	ST Housing
ZL60005/TGD	SMA Housing

0°C to +70°C

Note: Rated Optical Power apply only on the TO-46 package, for housing options optical power is typically 10% less.

Warning: Laser Radiation, avoid exposure to beam. Class 3B laser product, potential eye hazard. Warning labels in each box.

Features

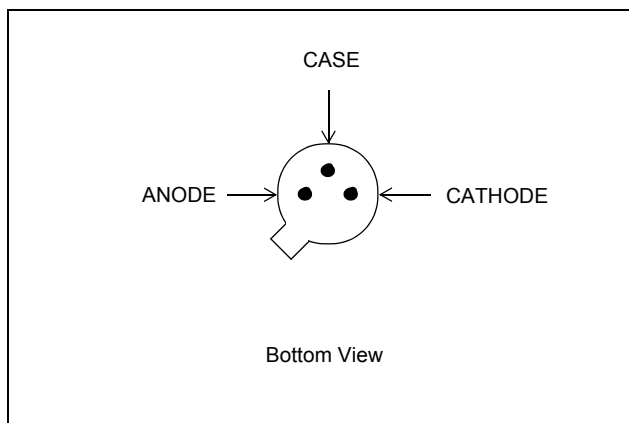
- High power
- Low beam divergence
- Low drive current
- Hermetically sealed
- Easy alignment

Applications

- Fiber optic datalinks
- Position sensor
- Range finder
- Free air datalinks
- Optical storage

Description

This High-Power VCSEL (Vertical Cavity Surface-Emitting Laser) is designed for industrial and sensors applications. It operates in multiple transverse and single longitudinal mode, ensuring stable output power and low noise.

**Figure 1 - Pin Description**

Optical and Electrical Characteristics - Case Temperature 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Optical Power	P_o	6	7		mW	$I_F=40$ mA. Note 1
Slope Efficiency (dP_o/dI_F)	h		300		mW/A	$I_F=40$ mA
Beam Divergence	Θ		11		deg	Full Width at $1/e^2$
Bandwidth 3 dB _{el})	f_c	1			GHz	$I_F=40$ mA
Peak Wavelength	λ_p	830	845	860	nm	$I_F=40$ mA
Spectral Width	DI		0.5	1.5	nm	$I_F=40$ mA
Forward voltage	V_F		2.0	2.3	V	$I_F=40$ mA
Threshold Current	I_{th}		14	19	mA	

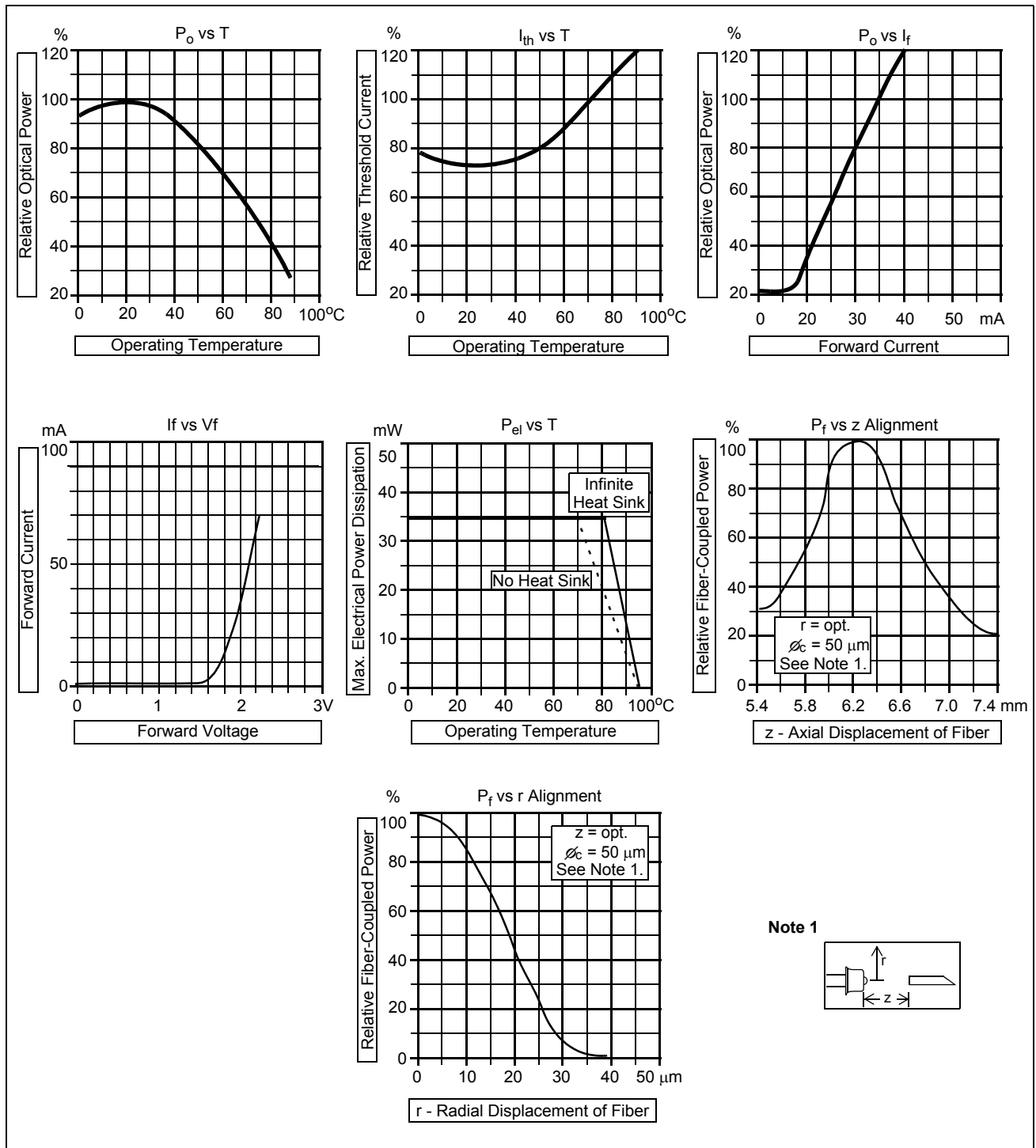
Note 1: Measured with 10 ms pulse.

Absolute Maximum Ratings - Not necessarily applied together. Exceeding these values may cause permanent damage. Functional operation under these conditions is not implied.

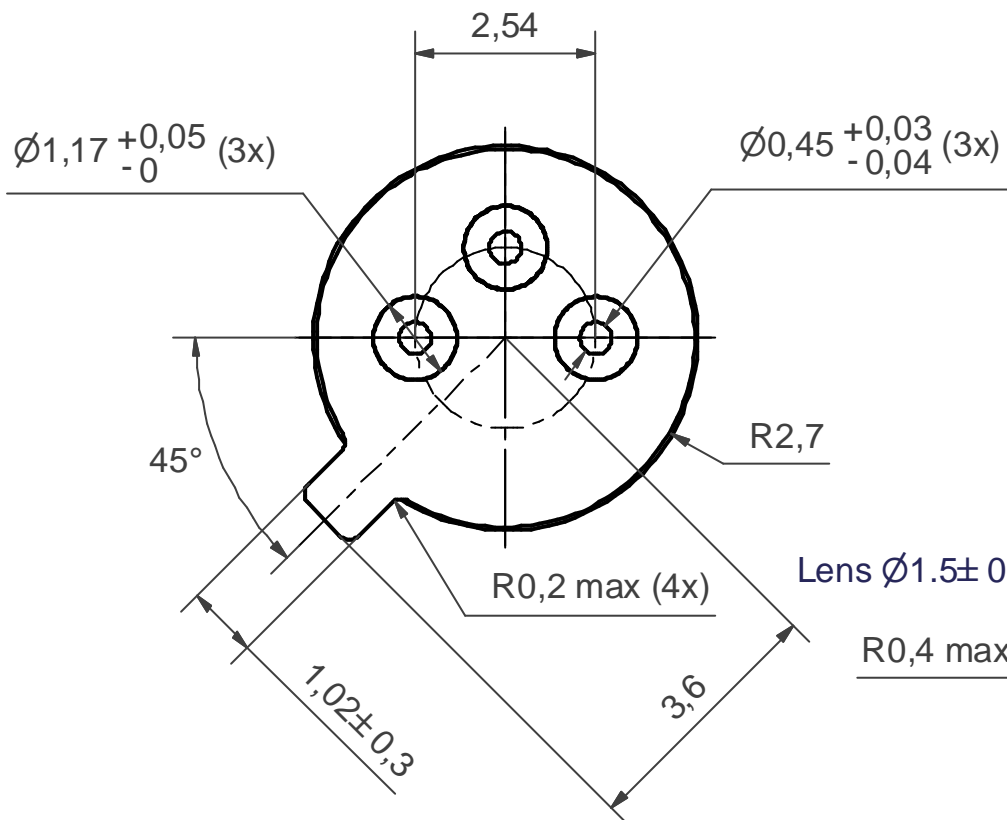
Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature	T_{op}	0 to +70°C
Electrical Power Dissipation	P_{tot}	100 mW
Continuous Forward Current ($f < 10$ kHz)	I_F	50 mA
Peak Forward Current (duty Cycle < 50%, $f > 1$ MHz)	I_{FRM}	80 mA
Reverse Voltage	V_R	1.5 V
Soldering Temperature (2 mm from the case for 10 sec.)	T_{sld}	260°C

Thermal characteristics

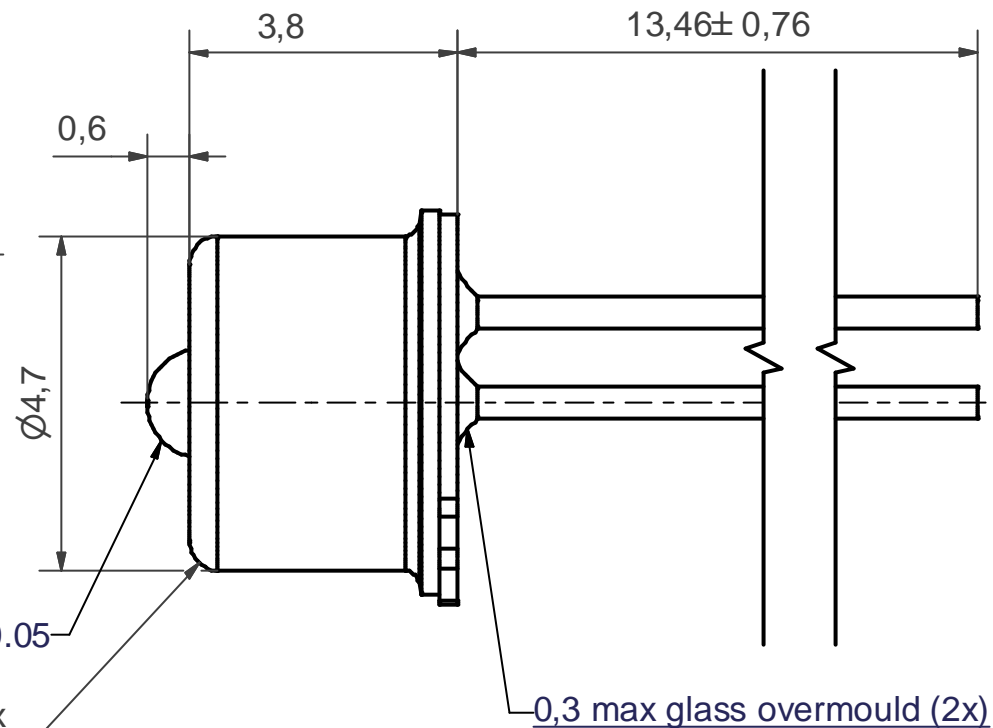
Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance - Infinite Heat Sink	R_{thjc}		200		°C/W
Thermal Resistance - No Heat Sink	R_{thja}		500		°C/W
Temp Coefficient - Wavelength	$d\lambda/dT_j$		0.06		nm/°C
Optical Power - Variation 0 to 70°C	ΔP		3		dB
Threshold Current - Variation 0 to 70°C	ΔI_{th}		5		mA



BOTTOM VIEW (10 : 1)



SIDE VIEW



NOTES:-

1. All dimensions in mm.
2. General tol. ISO-2768-mK.
3. Coating: Case: Ni 1,5-2,5 μm .
Header: Ni 2-3 μm / Au min 1,32 μm .

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DATE	22-MAR-03			
APPRD.	TD/BE			



Previous package codes

Package code **TB**

Drawing type
Package drawing, TO-46 with lens

Title **JS004076**



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