ROITHNER LASERTECHNIK GmbH

WIEDNER HAUPTSTRASSE 76   1040 VIENNA   AUSTRIA
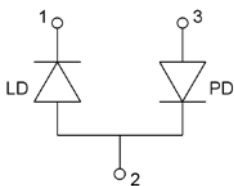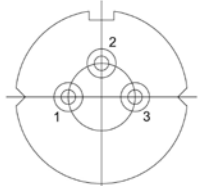TEL. +43 I 586 52 43 -0, FAX. -44, OFFICE@ROITHNER-LASER.COM

RLT850M-1WG50

TECHNICAL DATA

Infrared Laser Diode	AlGaAs/InGaAs

Specifications

- Structure: AlGaAs/InGaAs
- Peak Wavelength: 852 nm
- Optical Output Power: 1 W, cw
- Package: 9 mm, flat window
- Monitor PD: build-in

Electrical Connection   n-type

Pin Configuration		Bottom View

n-type

PIN	Function
1	LD Cathode
2	LD Anode, PD Cathode (case)
3	PD Anode

Electro-Optical Characteristics   specified at 25°C

Item	Symbol	Min.	Typ.	Max.	Unit
Optical Specifications					
Central Wavelength	λ_C	847	852	857	nm
Spectral Width (FWHM)	$\Delta\lambda$	-	2	4	nm
Optical Output Power	P_O	-	1.0	-	W
Beam Divergence	$\theta\parallel$	-	8	11	deg.
	$\theta\perp$	-	30	35	deg.
Emitting Aperture	W x H		1x50		µm
Mode Structure			MM		
Electrical Specifications					
Forward Current	I_F	-	1.09	1.20	A
Threshold Current	I_{TH}	-	180	220	mA
Forward Voltage	V_F	-	1.9	2.2	V
Slope Efficiency	η	1.0	1.2	-	W/A
Monitor Current	I_M	0.05	-	1.3	mA
Absolute Maximum Ratings					
Lifetime		10000			hour
Operating Case Temperature	T_C	-20	25	+50	°C
Storage Temperature	T_{STG}	-40	-	+85	°C
Soldering Temperature *	T_{SOL}	-	-	250	°C

* must be completed within 3 seconds

Note: The above specifications are for reference purpose only and subjected to change without prior notice.

Package Dimensions

9 mm Package	Unit: mm

2.450

14 ±0.500

2.540 ±0.200

3.500

1

0.150 ±0.050

Ø 0.450

9

Ø 6.400

Ø 6.400

Ø 3.200

1.500

cap

A

chip

header

header

lead

Axial direction

horizontal direction

vertical direction

for clarity reason cap was hiden

DETAIL A
SCALE 50 : 1

Note: From 9 mm center to PD edge: 0.75±0.05 mm
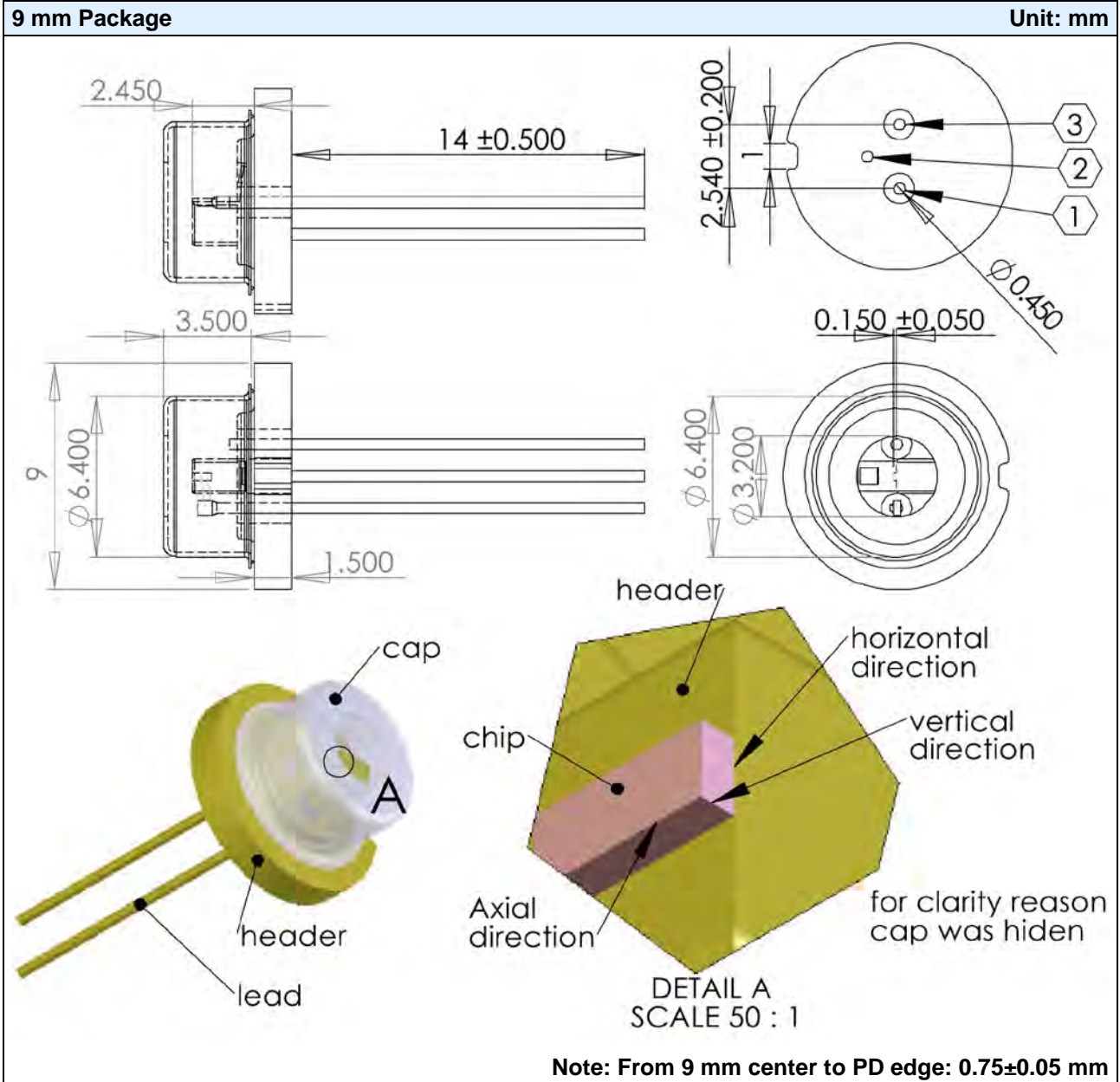
Precaution for Use

1. Cautions

- This LD must be cooled!
- DO NOT look directly into the emitting area of the LD during operation!
- **WARNING: LD is emitting invisible light!**

NOTE
LASERDIODE
MUST BE COOLED

2. Safety of Laser light

- Laser Light can damage the human eyes and skin. Do not expose the eye or skin directly to any laser light and/or through optical lens. When handling the LDs, wear appropriate safety glasses to prevent laser light, even any reflections from entering to the eye. Focused laser beam through optical instruments will increase the chance of eye hazard.

DANGER
LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM
DO NOT STARE INTO BEAM
NEVER VIEW THROUGH OPTICAL INSTRUMENTS

3. Soldering Conditions

- DO NOT apply any stress to the lead particularly when heat.
- After soldering the LDs should be protected from mechanical shock or vibration until the LDs return to room temperature.
- When it is necessary to clamp the LDs to prevent soldering failure, it is important to minimize the mechanical stress on the LDs.

4. Static Electricity

- The LDs are very sensitive to Static Electricity and surge voltage, which will reduce and degrade the reliability of the LDs. It is recommended that a wrist band and/or an anti-electrostatic glove be used when handling the LDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the LDs.

CAUTION
ELECTROSTATIC
SENSITIVE
DEVICES
DO NOT OPEN OR HANDLE
EXCEPT AT A
STATIC-FREE WORKSTATION

5. Operating method

- This LD shall change its forward voltage requirement and optical output power according to temperature change. Also, the LD will require more operation current to maintain same output power as it degrades. In order to maintain output power, APC (Automatic Power Control) is recommended, which use monitor feedback to adjust the operation current.
- Confirm that electrical spike current generated by switching on and off does not exceed the maximum operating current level specified herein above as absolute maximum rating. Also, employ appropriate countermeasures to reduce chattering and/or overshooting in the circuit.

6. Heat Generation

- Thermal design of the end product is of paramount importance. Please consider the heat generation of the LD when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LD placement on the board, as well as other components. It is necessary to avoid intense heat generation and operate within the maximum ratings given in the specification.
- The operating current should be decided after considering the ambient maximum temperature of LDs.

7. Absolute Maximum Rating

- Active layer of LDs shall have high current density and generate high electric field during its operation. In order to prevent excessive damage, the LD must be operated strictly below absolute maximum rating.