



## RLT850M-1WG50



### TECHNICAL DATA

## Infrared Laser Diode

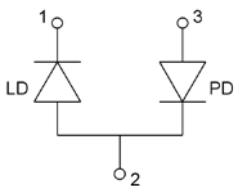
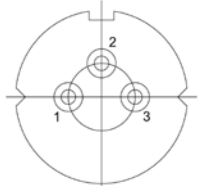
## AlGaAs/InGaAs

### 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								
 <table border="1"> <thead> <tr> <th>PIN</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LD Cathode</td> </tr> <tr> <td>2</td> <td>LD Anode, PD Cathode (case)</td> </tr> <tr> <td>3</td> <td>PD Anode</td> </tr> </tbody> </table>	PIN	Function	1	LD Cathode	2	LD Anode, PD Cathode (case)	3	PD Anode	
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### Electro-Optical Characteristics

specified at 25°C

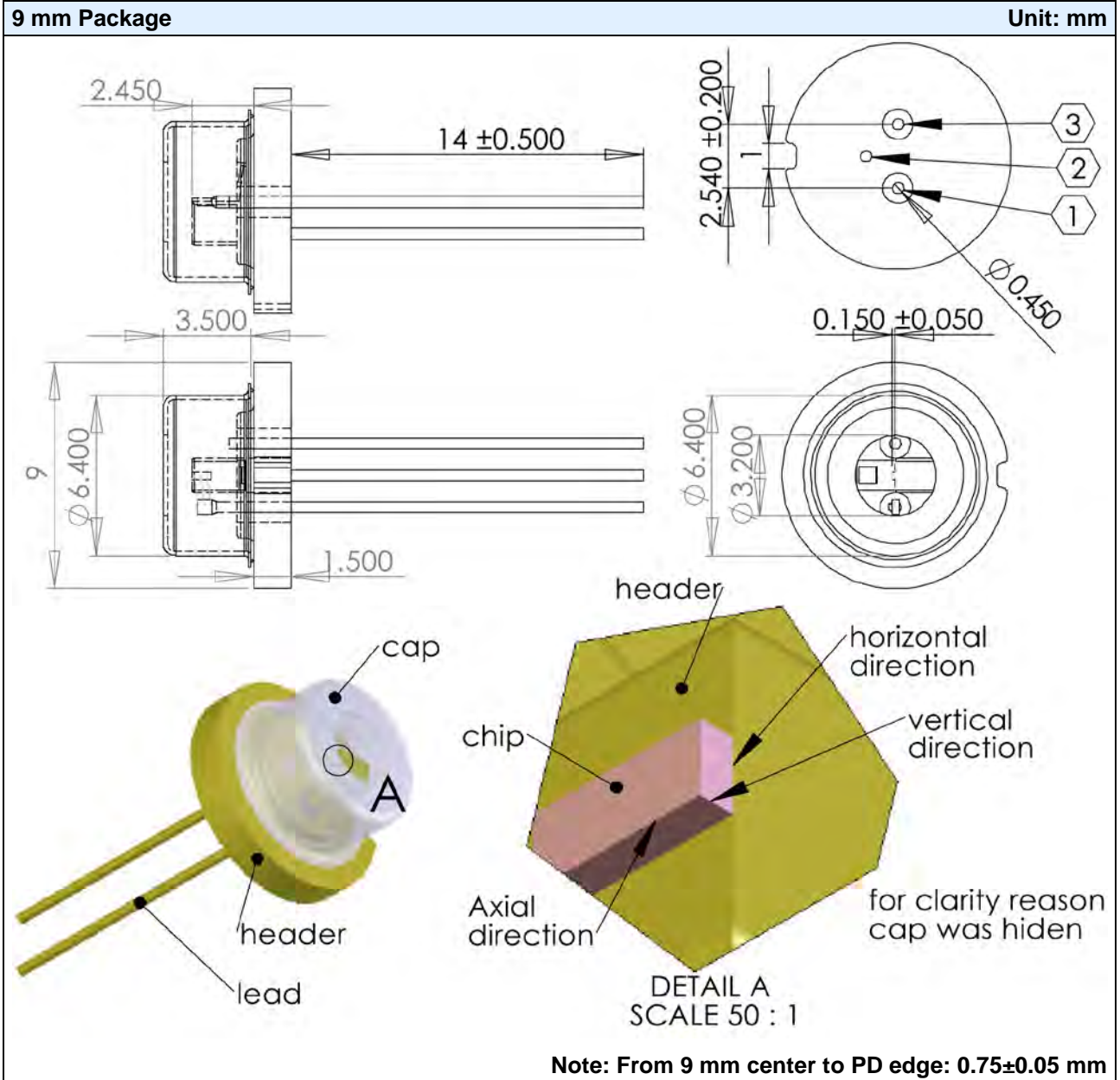
Item	Symbol	Min.	Typ.	Max.	Unit
<b>Optical Specifications</b>					
Central Wavelength	$\lambda_c$	847	852	857	nm
Spectral Width (FWHM)	$\Delta\lambda$	-	2	4	nm
Optical Output Power	$P_O$	-	1.0	-	W
Beam Divergence	$\theta_{  }$	-	8	11	deg.
	$\theta_{\perp}$	-	30	35	deg.
Emitting Aperture	W x H		1x50		$\mu\text{m}$
Mode Structure			MM		
<b>Electrical Specifications</b>					
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	$\eta$	1.0	1.2	-	W/A
Monitor Current	$I_M$	0.05	-	1.3	mA
<b>Absolute Maximum Ratings</b>					
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





## 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.



### 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.



### 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.