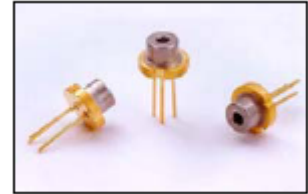




RLV4313

TECHNICAL DATA



Violet Laser Diode

Features

- Peak Wavelength: 405 nm
- Optical Output Power: 120 mW
- Package: 5.6 mm, with Photo Diode



Electrical Connection

Pin Configuration	Bottom View								
<div style="display: inline-block; vertical-align: top; margin-left: 20px;"> <p><i>m-type</i></p> <table border="1"> <thead> <tr> <th>PIN</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LD Anode</td> </tr> <tr> <td>2</td> <td>LD Cathode, PD Cathode</td> </tr> <tr> <td>3</td> <td>PD Anode</td> </tr> </tbody> </table> </div>	PIN	Function	1	LD Anode	2	LD Cathode, PD Cathode	3	PD Anode	
PIN	Function								
1	LD Anode								
2	LD Cathode, PD Cathode								
3	PD Anode								

Length of pins: 3mm

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

Item	Symbol	Value	Unit
CW Output Power	P_O	140	mW
LD Reverse Voltage	V_R (LD)	5	V
PD Reverse Voltage	V_R (PD)	20	V
Operating Case Temperature	T_C	-10 ... +70	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ... +85	$^\circ\text{C}$

Specifications ($T_C=25^\circ\text{C}$)

Item	Symbol	Min.	Typ.	Max.	Unit	
Optical Specifications						
CW Output Power	P_O	-	-	120	mW	
Peak Wavelength *	λ_P	400	405	410	nm	
FWHM Beam Divergence	$\theta_{ }$	7.0	9.0	12.0	deg	
	θ_{\perp}	15.0	19.5	23.0	deg	
Emission Point Accuracy	Angle	$\Delta\theta_{ }$	-2.0	-	2.0	deg
		$\Delta\theta_{\perp}$	-2.5	-	2.5	deg
Electrical Specifications						
Threshold Current	I_{th}	-	35	50	mA	
Operating Current	I_{op}	-	120	150	mA	
Slope Efficiency	η	1.2	1.4	1.9	W/A	
Operating Voltage	U_{op}	-	4.8	5.5	V	
Monitor Current **	I_m	0.2	0.4	0.7	mA	

* Measuring specifications.

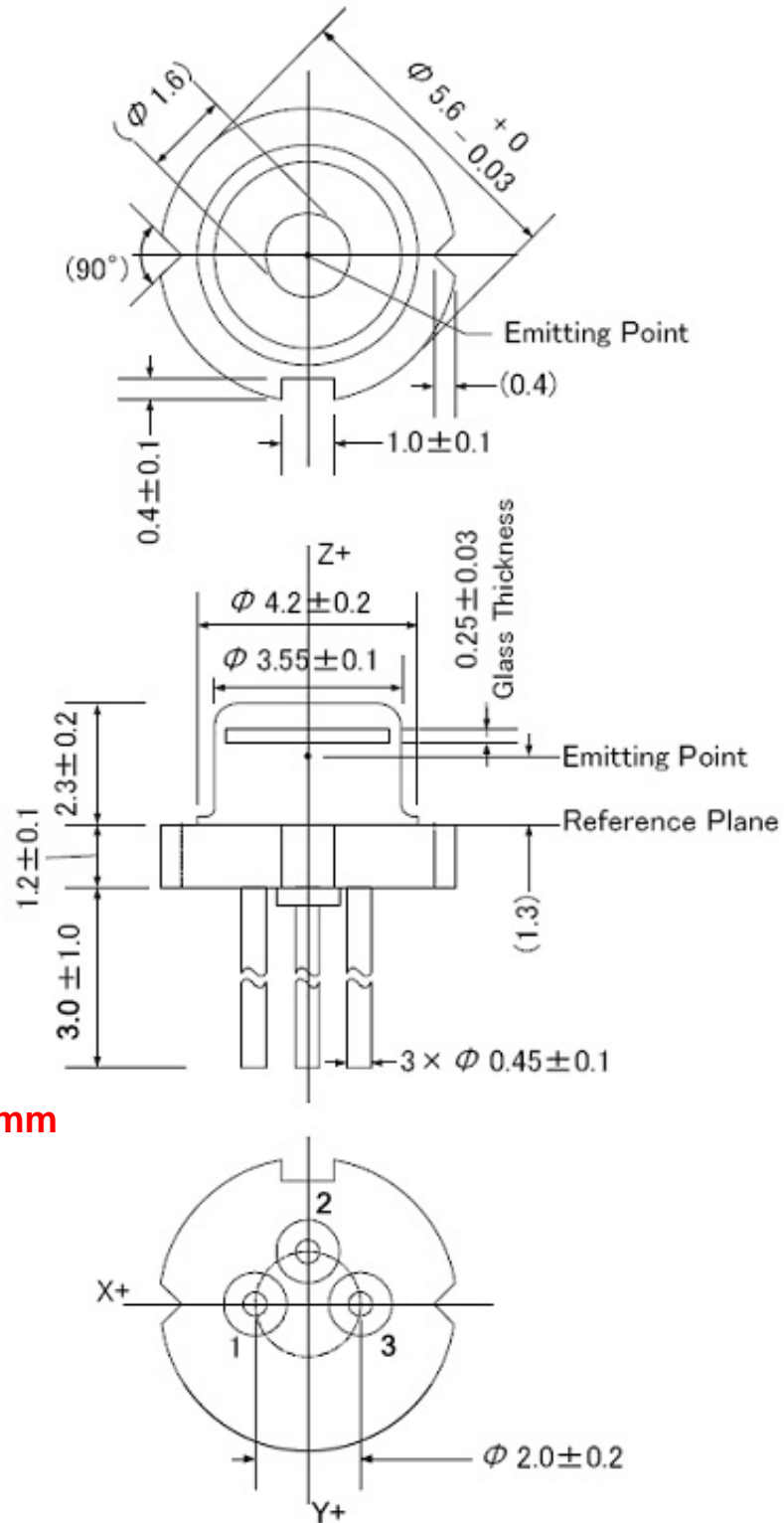
** Monitor Current is short time power reference purpose only.
Not guaranteed for accuracy.

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



Package Dimensions

5.6 mm Package (Unit:mm)

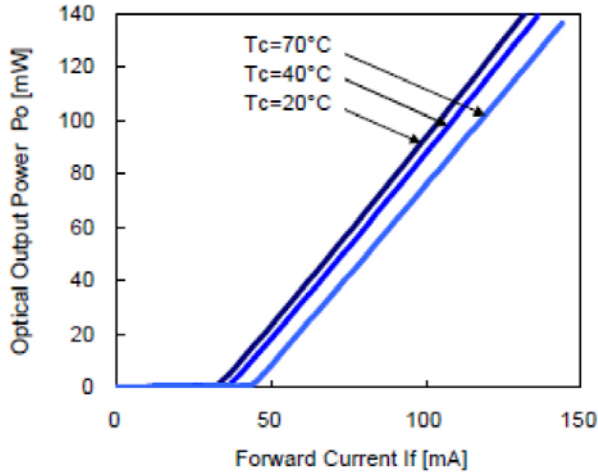


Length of pins: 3mm

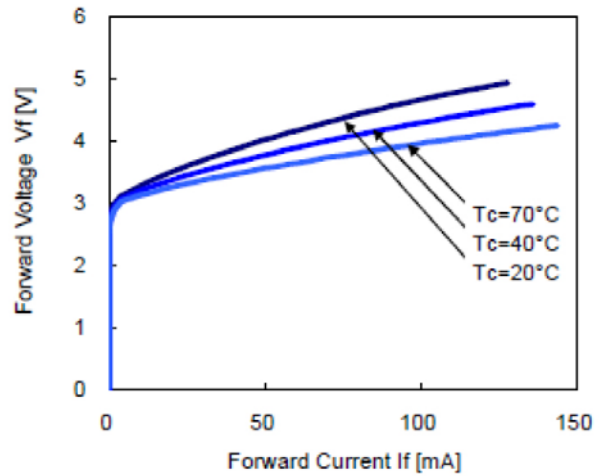


Typical Characteristics

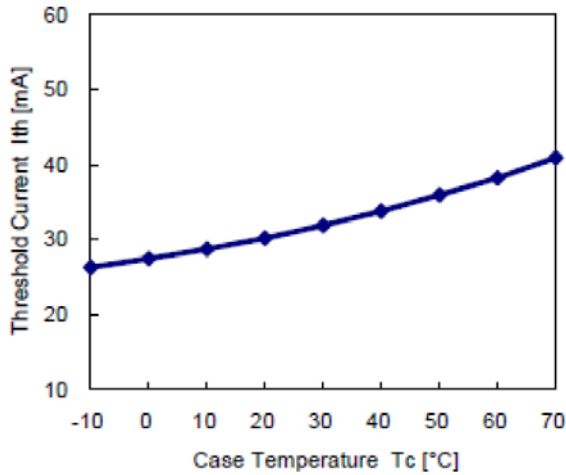
Optical Output Power vs. Forward Current



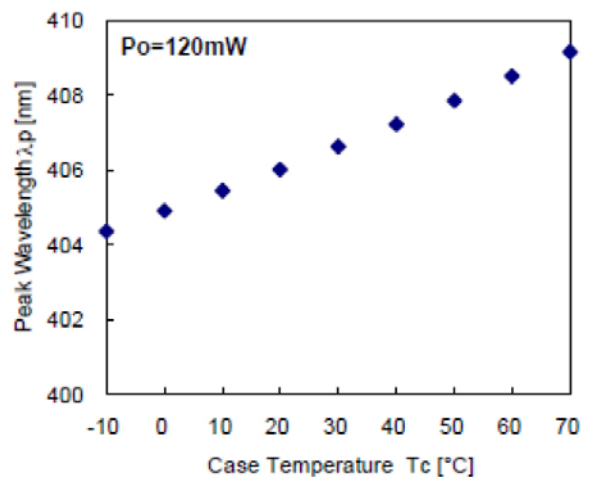
Forward Voltage vs. Forward Current



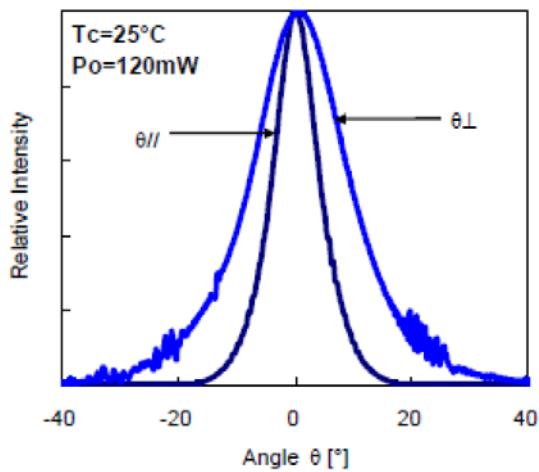
Threshold Current vs. Case Temperature



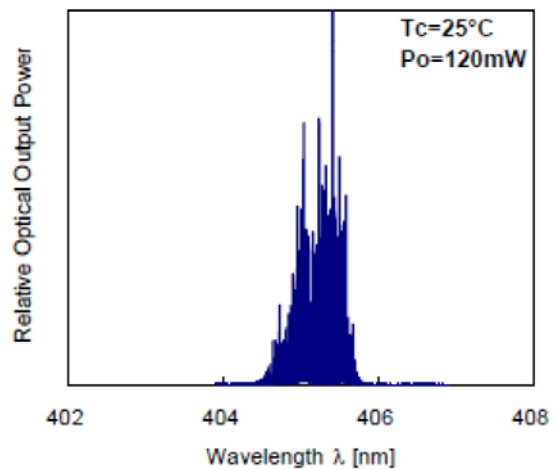
Peak Wavelength vs. Case Temperature



Far Field Pattern



Typical Spectrum





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.
- These LDs are classified in Class 4 of IEC60825-1 and 21 CFR Part 1040.10 Safety Standards. It is absolutely necessary to take overall safety measures against User's modules, equipment and systems into which this LDs are incorporated and/or integrated.



Cautions

1. 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, use of 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.

2. Static Electricity

- Static electricity or electrical surges will reduce and degrade the reliability of the LDs. It is recommended to use a wrist trap or anti-electrostatic glove when handling the Product.

3. 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.