

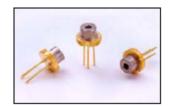
ROITHNER LASERTECHNIK GIRDH

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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	
10 03	m-type	•		2
\	PIN	Function		
LD Y PD	1	LD Anode		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	2	LD Cathode, PD Cathode		1 3
	3	PD Anode		
02				

Length of pins: 3mm

Absolute Maximum Ratings (T_C=25°C)

Item	Symbol	Value	Unit
CW Output Power	Po	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	°C
Storage Temperature	T _{sta}	-40 +85	°C

Specifications ($T_C=25$ °C)

Item		Symbol	Min.	Тур.	Max.	Unit				
Optical Specifications										
CW Output Power		Po	-	-	120	mW				
Peak Wavelength *		λ_{P}	400	405	410	nm				
FWHM Beam Divergence		Θ_{\parallel}	7.0	9.0	12.0	deg				
		$ heta_{\perp}$	15.0	19.5	23.0	deg				
Emission Point Accuracy	Angle	$\Delta \theta_{\parallel}$	-2.0	-	2.0	deg				
		$\Delta heta_{\perp}$	-2.5	-	2.5	deg				
Electrical Specifications										
Threshold Current		I _{th}	-	35	50	mA				
Operating Current		l _{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.

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

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



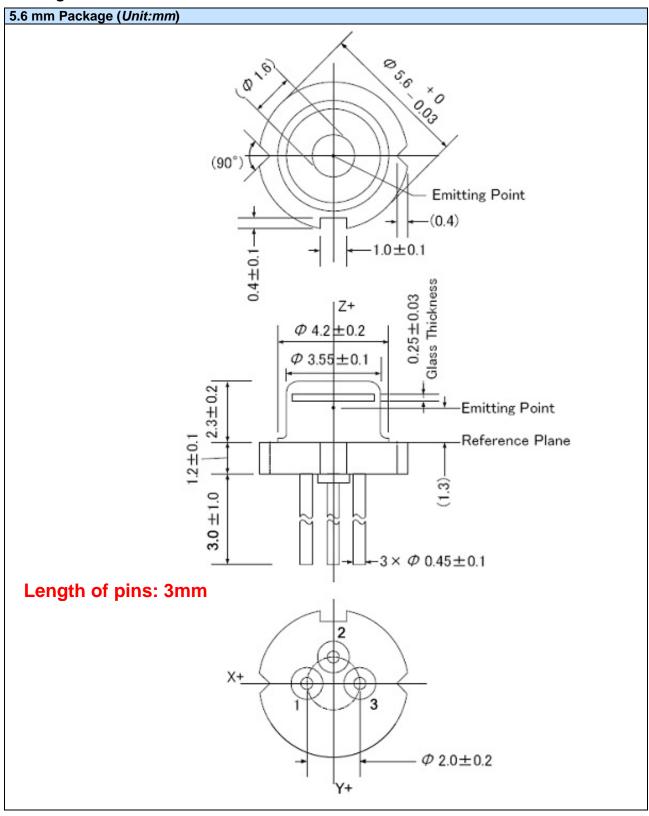
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Package Dimensions





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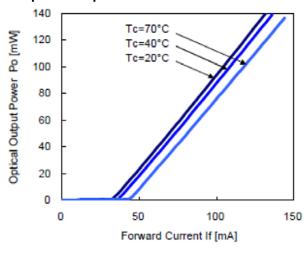




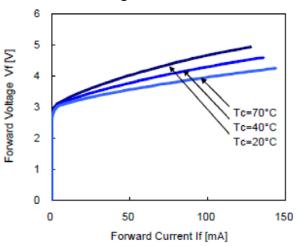
Typical Characteristics

Optical Output Power vs. Forward Current

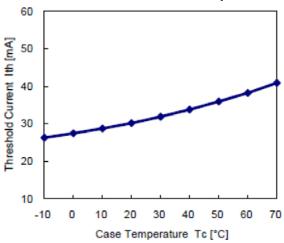
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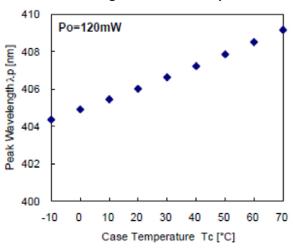
Forward Voltage vs. Forward Current



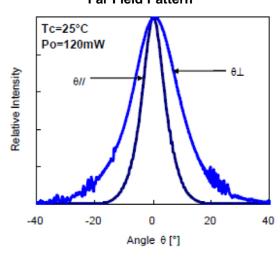
Threshold Current vs. Case Temperature



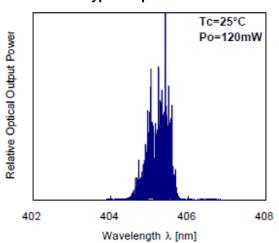
Peak Wavelength vs. Case Temperature



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.