



RLT700-50MGS

- Infrared Laser Diode
- 700 ±10 nm, 50 mW
- Single Transverse Mode
- 5.6 mm TO-Can



Description

RLT700-50MGS is an infrared Fabry Perot laser diode, typical emitting at 700 nm. It features single transverse mode emission, CW or pulse operation, low threshold current and high slope efficiency. **RLT700-50MGS** comes in 5.6 mm TO-Can package with **integrated PD**.

Absolute Maximum Ratings

Parameter	Symbol	Values	Unit
Operating Temperature	T_{CASE}	-10 – +60	°C
Storage Temperature	T_{STG}	-40 – +80	°C
Soldering Temperature *	T_{SLD}	250	°C

* must be completed within 5 seconds

Electro-Optical Characteristics

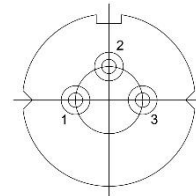
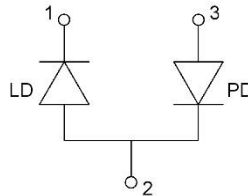
$T_{CASE} = 25^{\circ}\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Wavelength	λ_P	695	705	715	nm
Spectral Width (FWHM)	$\Delta\lambda$		0.8	2.0	nm
Wavelength/temperature Coefficient			0.2		nm/°C
Mode Structure		Single Transverse			
Optical Output Power	P_O	40	50		mW
Emitter Size	A	3 x 1.5			µm
Operating Voltage	V_{OP}		2.5	2.8	V
Threshold Current	I_{TH}		30	40	mA
Operating Current	I_{OP}		75	100	mA
Monitor Current	I_M	0.05		1.0	mA
Slope Efficiency	η	0.5	1.0	1.3	mW/mA
Beam Divergence, Parallel (FWHM)	$\theta_{ }$	7	9	14	deg.
Beam Divergence, Perpendicular (FWHM)	θ_{\perp}	14	18	25	deg.
Off Axis Angle	$\Delta\alpha_{ } \times \Delta\alpha_{\perp}$			<±3	deg.
Position Accuracy	$\Delta X, \Delta Y, \Delta Z$			±100	µm
Rise Time	t_r		1		ns
Lifetime (25°C, I_{OP} , CW)					hour



Pin Configuration

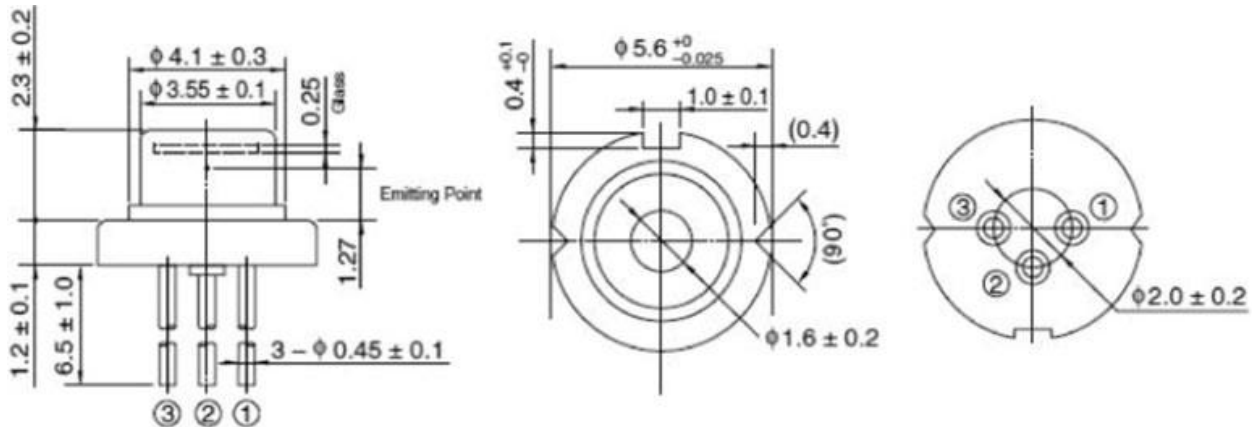
Pin	Description
1	LD Cathode
2	LD Anode, PD Cathode
3	PD Anode



bottom view

Outline Dimensions

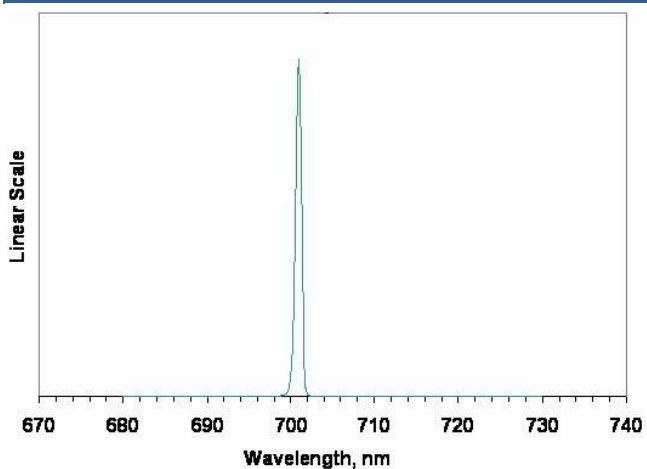
5.6mm TO-can



Dimensions: mm

Performance Characteristics

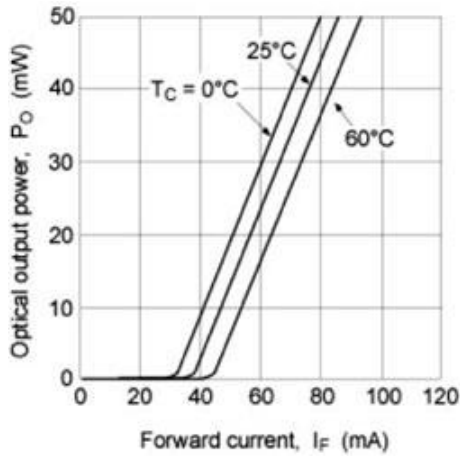
Spectrum



(sample)

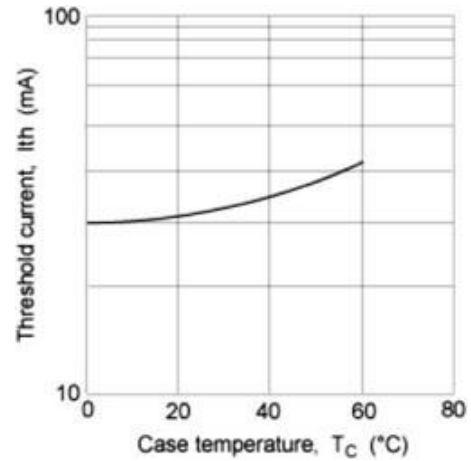


Output Power vs. Forward Current



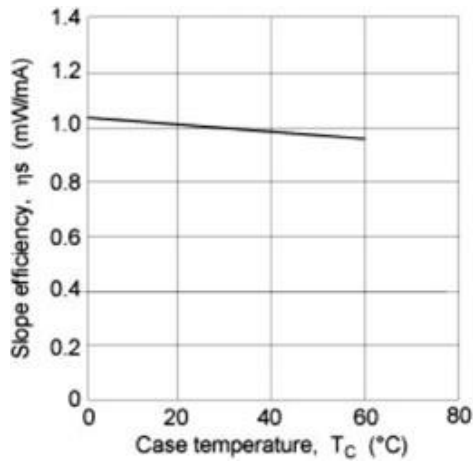
(sample)

Threshold Current vs. Case Temperature



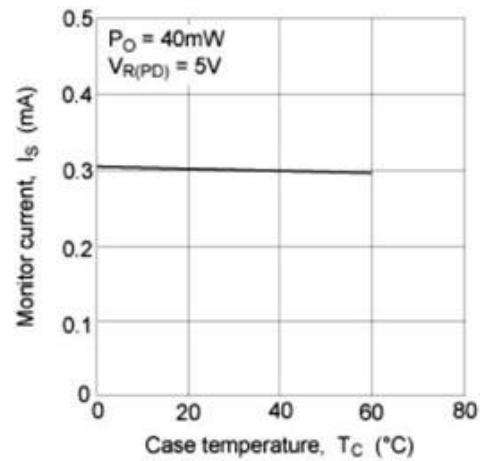
(sample)

Slope Efficiency vs. Case Temperature



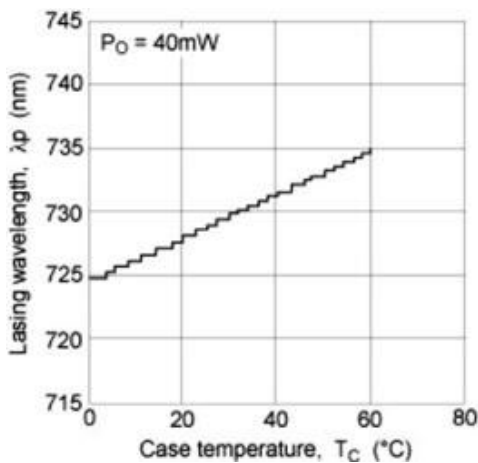
(sample)

Monitor Current vs. Case Temperature



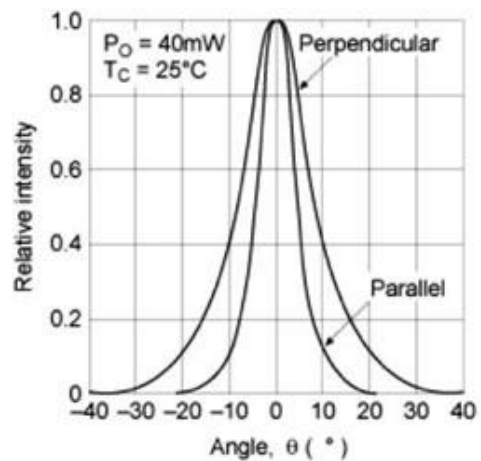
(sample)

Wavelength vs. Case Temperature



(sample)

Far Field Pattern



(sample)



Precautions

Safety

Warning: This LD is emitting invisible laser radiation!

Caution: Laser light emitted from any laser diode may be harmful to the human eye. Avoid looking directly into the laser diode's aperture when the diode is in operation.

Note: The use of optical lenses with this laser diode will increase eye hazard.



ESD Caution

Always do handle laser diodes with extreme care to prevent electrostatic discharge, the primary cause of unexpected diode failure. To prevent ESD related failures, it is strongly advised to always wearing wrist straps, and grounding all applicable work surfaces, when handling laser diodes.

Operating Considerations

It is strongly advised to only operate this laser diode with a current source. The current of a laser diode is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory. Laser diodes may be damaged by excessive drive currents or switching transients.

It is advised, to operate the laser diode at the lowest temperature possible, and to never exceed maximum specifications as outlined in the datasheet. Device degradation will accelerate with increased temperature. Proper heat sinking will greatly enhance stability and life time of the laser diode.

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