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RLT650-50MGS

- Red Laser Diode
- 658 nm, 50 mW
- Single transverse mode
- TO18 package, Flat Window



Description

RLT650-50MGS is a red laser diode, typically emitting at 658 nm. It features **single transverse mode** emission and low operating current. **RLT650-50MGS** comes in 5.6 mm TO-Can package **with integrated PD**.

Maximum Rating* ($T_{CASE} = 25^{\circ}C$)

| Parameter | Symbol | Values | | Unit |
|---------------------------------|-----------|--------|-------|-------------|
| | | Min. | Max. | |
| Reverse Voltage | V_R | | 2 | V |
| Operating Temperature* | T_{OPR} | 0 | + 60 | $^{\circ}C$ |
| Storage Temperature* | T_{STG} | - 40 | + 85 | $^{\circ}C$ |
| Soldering Temperature (max. 3s) | T_{SOL} | | + 260 | $^{\circ}C$ |

* operating close to or outside these conditions may damage the device

Electro-Optical Characteristics ($T_{CASE} = 25^{\circ}C$)

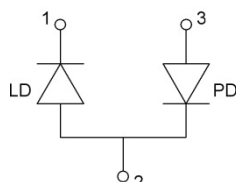
| Parameter | Symbol | Values | | | Unit |
|------------------------|---------------|------------------|------|------|------|
| | | Min. | Typ. | Max. | |
| Peak Wavelength | λ_P | 655 | 658 | 668 | nm |
| Optical Output Power | P_O | | 50 | | mW |
| Spectral Width (FWHM) | λ | | 2.0 | | nm |
| Operating Voltage | V_F | | 2.7 | 3.0 | V |
| Threshold Current | I_{th} | | 45 | 60 | mA |
| Operating Current | I_F | | 100 | 120 | mA |
| Slope efficiency | η | | 1.0 | | W/A |
| PD Current | I_{PD} | | 0.3 | | mA |
| PD Reverse Voltage | V_{PD} | | 30 | | V |
| Beam Divergence (FWHM) | parallel | $\Theta_{ }$ | 9 | 12 | deg. |
| | perpendicular | Θ_{\perp} | 20 | 26 | deg. |



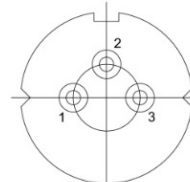
Electrical Connection

Pin Configuration

| Pin # | Function |
|-------|----------------------|
| Pin 1 | LD cathode |
| Pin 2 | LD anode, PD cathode |
| Pin 3 | PD anode |

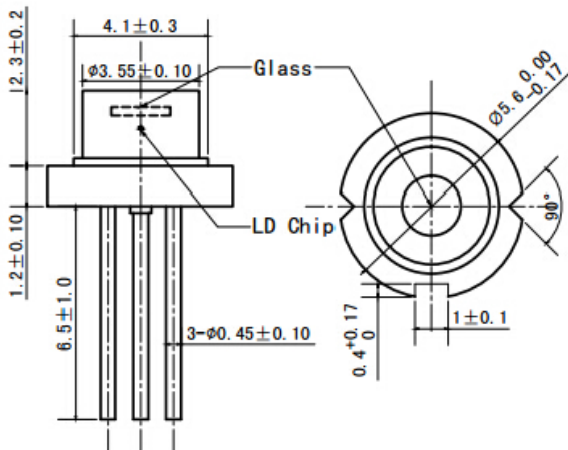


Bottom View





Outline Dimensions



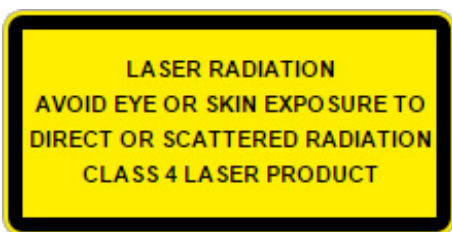
All dimensions in mm

Precautions

Safety

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**