



## SPL445-50-105M

- Fiber-Coupled Laser Diode
- 450 nm, 50 mW
- 105  $\mu\text{m}$  Multimode Fiber



### Description

**SPL445-50-105M** is a blue fiber-coupled laser diode, typically emitting at 450 nm with an output power of 50 mW. It comes in a coaxial package with mounting bracket, 105  $\mu\text{m}$  multimode fiber and FC/PC connector.

**Additional options** like alternative fiber connector, fiber core size or package are available on request.

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

| Parameter                       | Symbol           | Values |       | Unit               |
|---------------------------------|------------------|--------|-------|--------------------|
|                                 |                  | Min.   | Max.  |                    |
| Reverse Voltage                 | $V_R$            |        | 2.0   | V                  |
| Operating Temperature           | $T_{\text{OPR}}$ | - 10   | + 70  | $^{\circ}\text{C}$ |
| Storage Temperature             | $T_{\text{STG}}$ | - 40   | + 85  | $^{\circ}\text{C}$ |
| Soldering Temperature (max. 3s) | $T_{\text{SOL}}$ |        | + 260 | $^{\circ}\text{C}$ |

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

| Parameter             | Symbol          | Values    |      |      | Unit          |
|-----------------------|-----------------|-----------|------|------|---------------|
|                       |                 | Min.      | Typ. | Max. |               |
| Peak Wavelength       | $\lambda_P$     | 440       | 450  | 460  | nm            |
| Output Power          | $P_O$           |           | 50   |      | mW            |
| Spectral Width (FWHM) | $\Delta\lambda$ |           | 2.0  |      | nm            |
| Operating Voltage     | $V_F$           |           | 6.0  | 7.0  | V             |
| Threshold Current     | $I_{\text{th}}$ |           | 20   | 55   | mA            |
| Operating Current     | $I_F$           |           | 100  | 120  | mA            |
| Fiber Specification   | Type            | Multimode |      |      |               |
|                       | Core *1         | 105       |      |      | $\mu\text{m}$ |
|                       | Connector *2    | FC/PC     |      |      |               |
|                       | Length          | 80        |      |      | cm            |



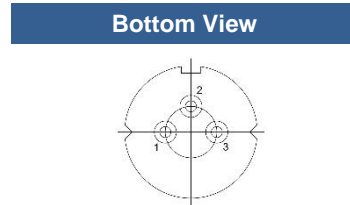
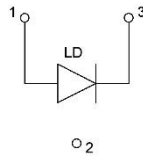
\*1 optional: 50  $\mu\text{m}$  or 62.5  $\mu\text{m}$

\*2 optional: SC or SMA905



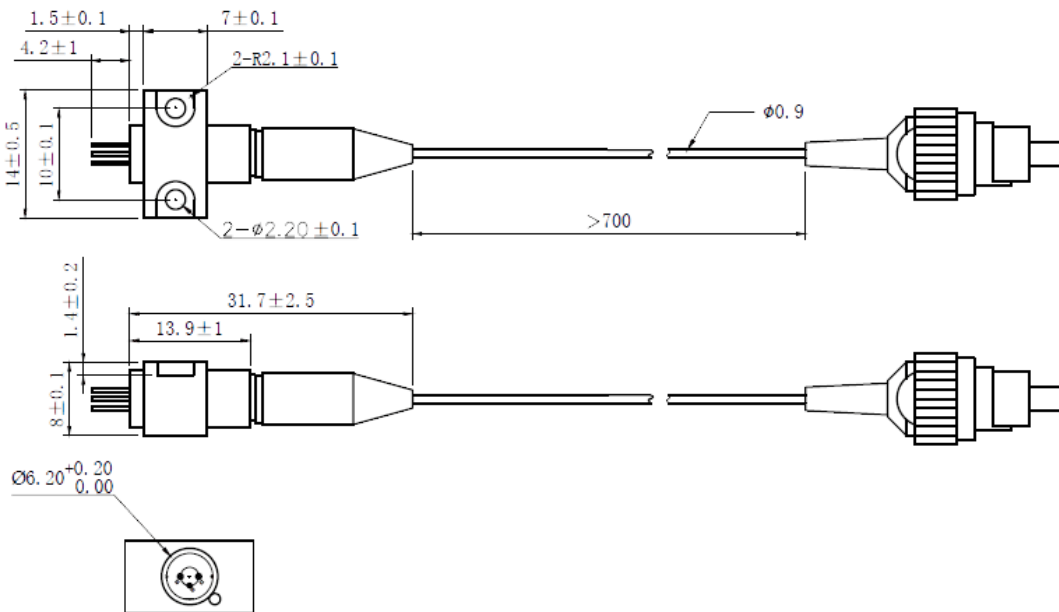
## Electrical Connection

| Pin Configuration* |            |
|--------------------|------------|
| PIN #              | Function   |
| 1                  | LD Anode   |
| 2                  | GND        |
| 3                  | LD Cathode |



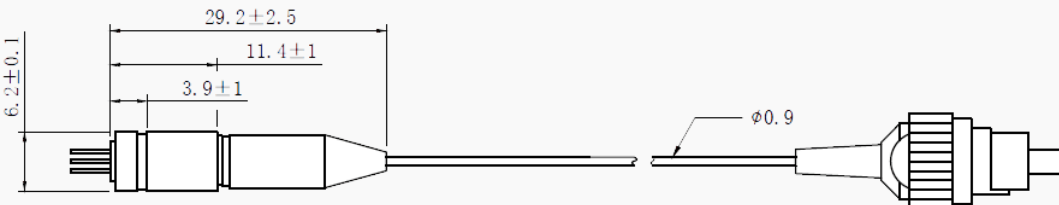
\* subject to change

## Outline Dimension



### Optional: Coaxial Package

SPL445-50-C105M



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 we strongly advise to always **wearing wrist straps**, and **grounding all applicable work surfaces**, when handling laser diodes



### Operating Considerations

We strongly advise 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