ROITHNER LASERTECHNIK GmbH
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SPL445-500-C105M

- **Blue Fiber-Coupled Laser Diode**
- **450 nm, 500 mW**
- **105 µm Multimode Fiber**

Description

SPL445-500-C105M is a blue fiber-coupled laser diode, typically emitting at 450 nm with an output power of 500 mW. It comes in a coaxial package with 105 µm multimode fiber and FC/PC connector.

Additional options like closer peak wavelength selection, HHL package, fiber receptacle, or alternative fiber connector are available on request.

Maximum Rating (T_{CASE} = 25°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Reverse Voltage	V_R		2.0	V
Operating Temperature	T_{OPR}	0	+ 70	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
Soldering Temperature (max. 3s)	T_{SOL}		+ 260	°C

Electro-Optical Characteristics (T_{CASE} = 25°C)

Parameter		Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength *1		λ_P	440	450	460	nm
Output Power		P_O		500		mW
Spectral Width (FWHM)		$\Delta\lambda$		2.0		nm
Operating Voltage		V_F		6.0	7.0	V
Threshold Current		I_{th}		0.2	0.6	A
Operating Current		I_F		1.0	1.2	A
Fiber	Type			UV Multimode		
	Core			105		µm
	Numerical Aperture					
	Connector *2			FC/PC		
	Length			80		cm

*1 *optional: down to ±5 nm*

*2 *optional: SC or SMA905*

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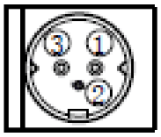
Electrical Connection

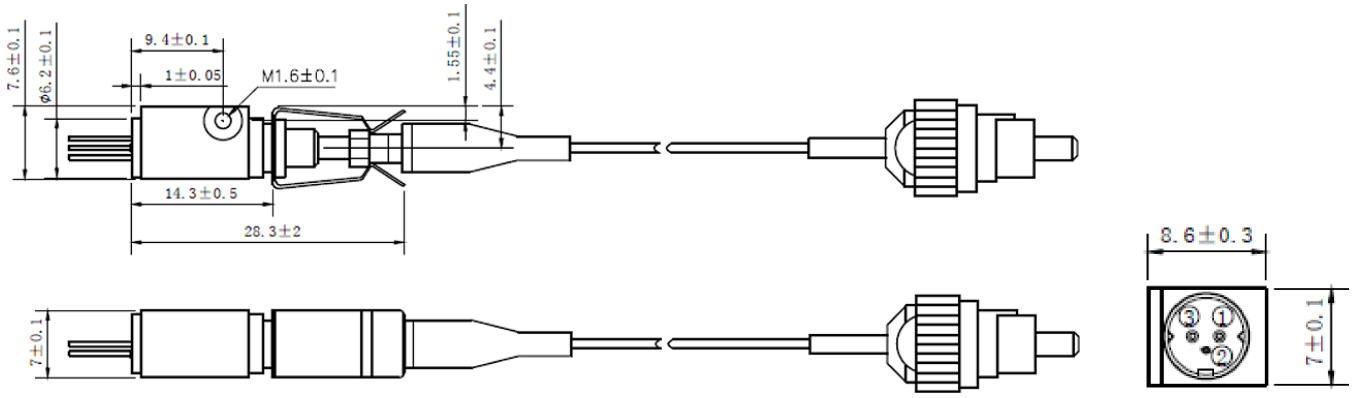
Pin Configuration*	
PIN #	**Function**
1	LD Anode
2	GND
3	LD Cathode

* subject to change

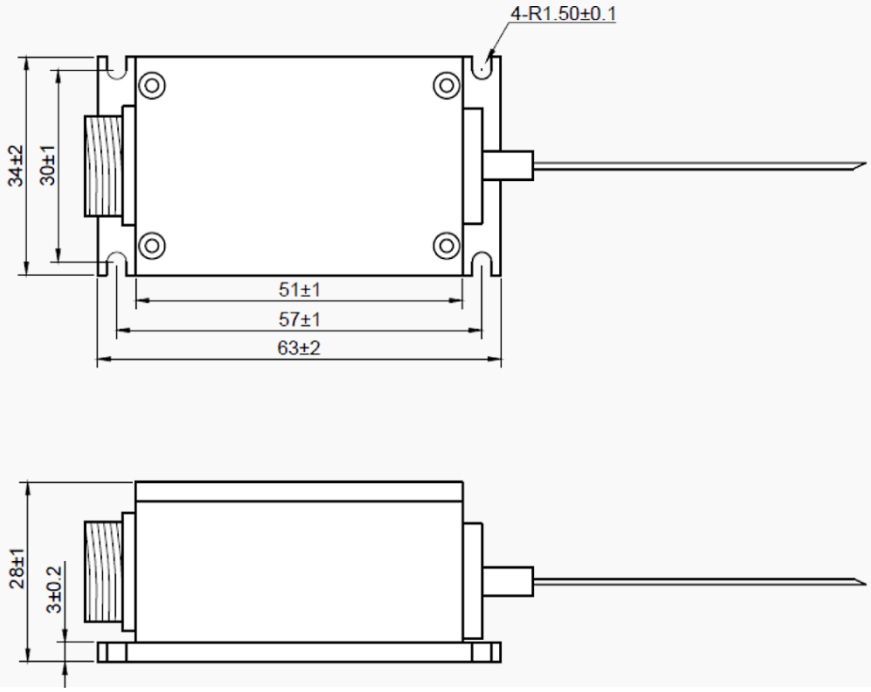
Side View



Outline Dimension



***Optional**: HHL Package* *SPM445-500-105M-T*



All dimensions in mm

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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.**