

**20mW High Power Laser Diode**

**Description**

The SLD201U/V is a gain-guided high-power laser diode fabricated by MOCVD.

**Features**

High power laser diode with the excellent general purpose

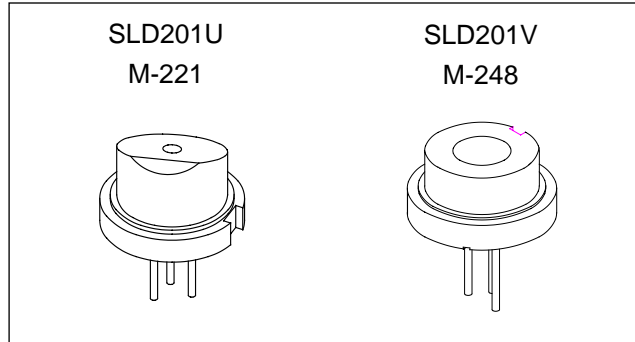
**Application**

Optical disc, Laser printer

**Structure**

AlGaAs double-hetero laser diode, PIN photo diode included for monitoring the laser radiant power output

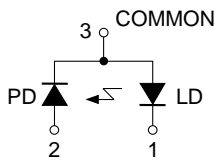
**Recommended Radiant Power Output** 15mW



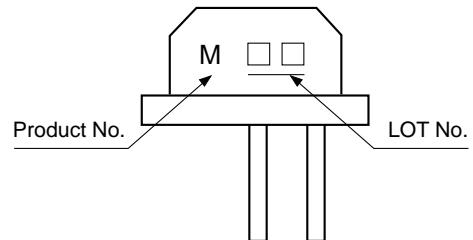
**Absolute Maximum Ratings (Tc = 25°C)**

- Optical power output Po 20 mW
- Reverse voltage VR LD 2 V
- PD 30 V
- Operating temperature Topr -10 to +50 °C
- Storage temperature Tstg -40 to +85 °C

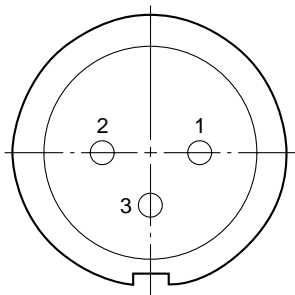
**Connection Diagram**



**Marking**



**Pin Configuration**



Bottom View

- 1. LD Cathode
- 2. PD Anode
- 3. COMMON

Sony reserves the right to change products and specifications without prior notice. This information does not convey any license by any implication or otherwise under any patents or other right. Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

**Electrical and Optical Characteristics**

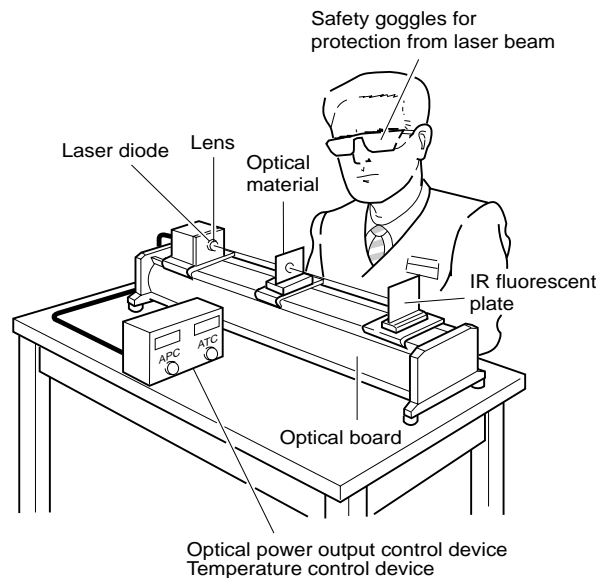
(T<sub>c</sub> = 25°C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit		
Threshold current	I <sub>th</sub>			80	110	mA		
Operating current	I <sub>op</sub>	P <sub>o</sub> = 15mW		95	135	mA		
Operating voltage	V <sub>op</sub>	P <sub>o</sub> = 15mW		1.9	2.5	V		
Wavelength	λ	P <sub>o</sub> = 15mW	760	780	800	nm		
Monitor current	I <sub>m</sub>	P <sub>o</sub> = 15mW V <sub>R</sub> = 15V	0.02	0.09	0.5	mA		
Radiation angle	Perpendicular	θ <sub>⊥</sub>	P <sub>o</sub> = 15mW		28	38	degree	
	Parallel	θ <sub>//</sub>			7	15	22	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P <sub>o</sub> = 15mW			±50	μm	
	Angle	Δφ <sub>⊥</sub>					±3	degree
		Δφ <sub>//</sub>						
Differential efficiency	η <sub>D</sub>	P <sub>o</sub> = 15mW	0.3	1.0		mW/mA		
Dark current of PD	I <sub>D</sub>	V <sub>R</sub> = 15V			0.15	μA		

**Handling Precautions**

(1) Eye protection against laser beams

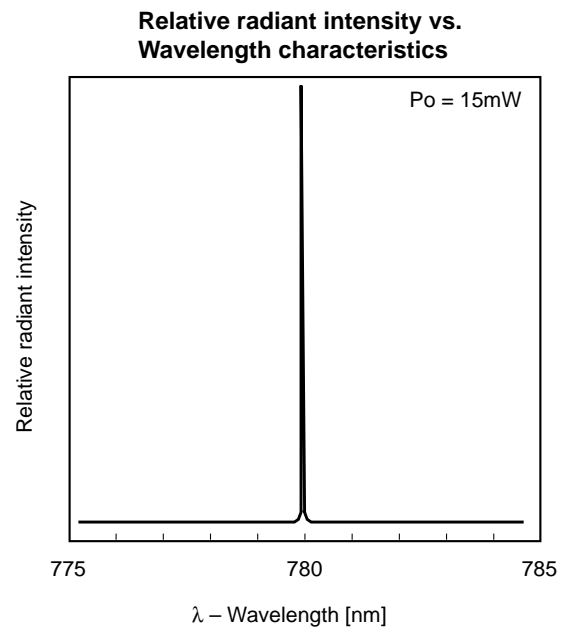
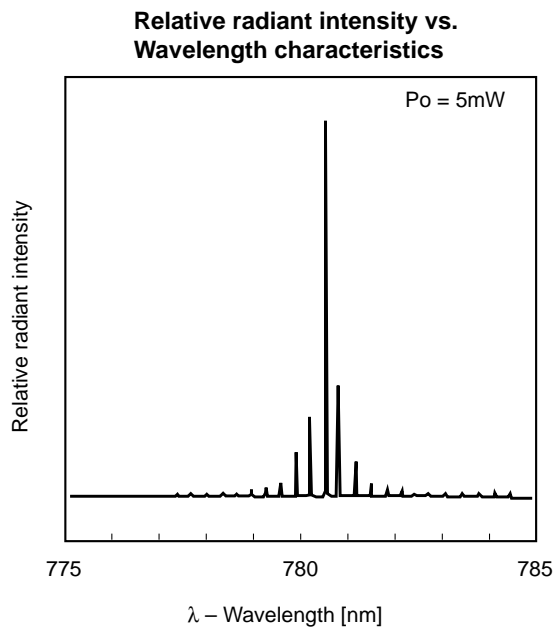
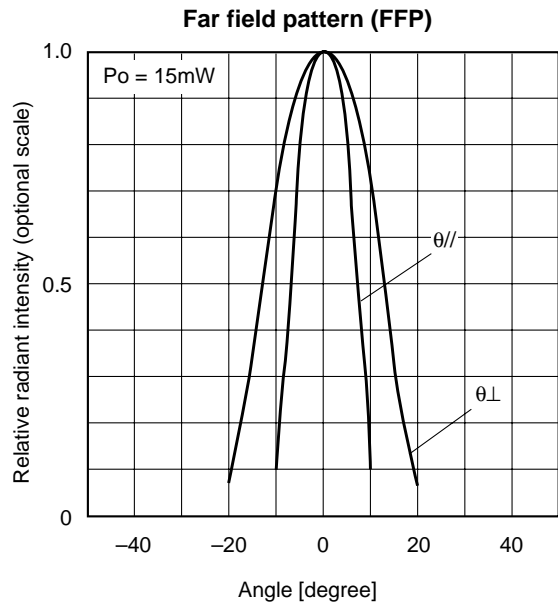
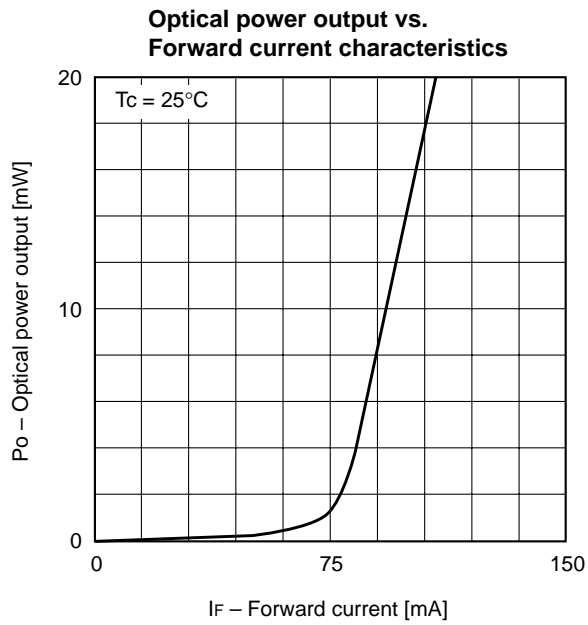
The optical output of laser diodes ranges from several mW to 4W. However the optical power density of the laser beam at the diode chip reaches 1MW/cm<sup>2</sup>. Unlike gas lasers, since laser diode beams are divergent, uncollimated laser diode beams are fairly safe at a laser diode. For observing laser beams, ALWAYS use safety goggles that block infrared rays. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.



(2) Prevention of surge current and electrostatic discharge

Laser diode is most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode even for an extremely short time (in the order of nanosecond), the strong light emitted from the laser diode promotes deterioration and then laser diodes are destroyed. Therefore, note that the surge current should not flow the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destructed instantly because electrostatic discharge is easily applied by a human body. Be great careful about excess current and electrostatic discharge.

Example of Representative Characteristics

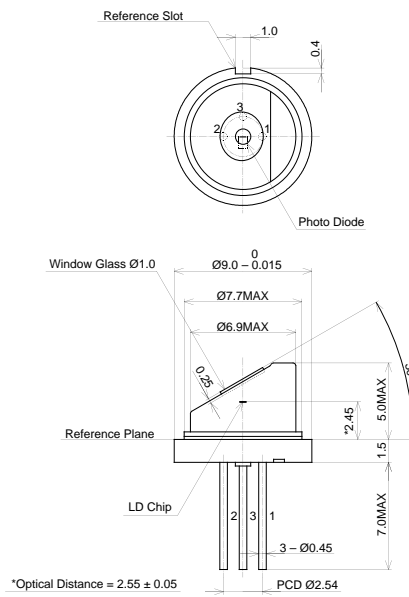


Package Outline

Unit: mm

SLD201U

M-221(LO-2)



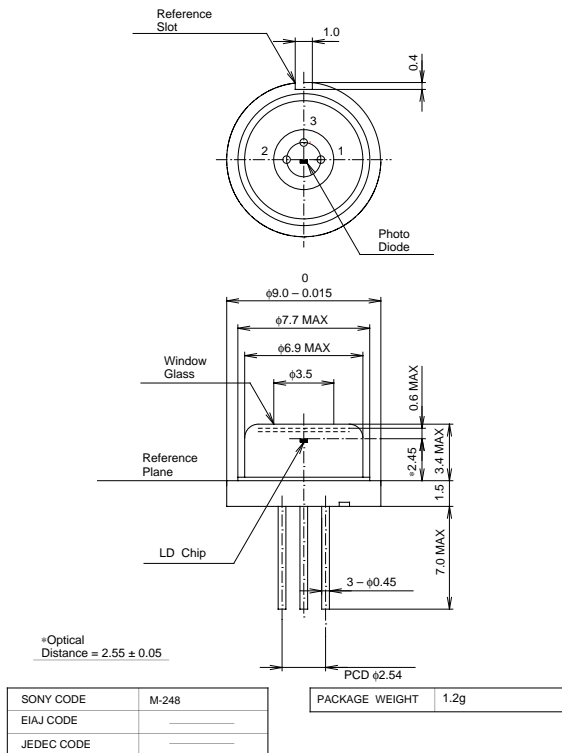
SONY CODE	M-221(LO-2)
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE STRUCTURE

PACKAGE WEIGHT	1.2g
----------------	------

SLD201V

M-248 (LO-11)



SONY CODE	M-248
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	1.2g
----------------	------