

### Infrared Emitter with High Radiant Flux Density and Low Coherency

#### ■ FEATURES

- High radiant flux density
- Low coherency

#### ■ APPLICATIONS

- Optical fiber gyroscopes
- Optical communication
- Optical measurement systems



The super luminescent diode (SLD) is an infrared emitter that has the advantages of both the laser diode and the LED; high radiant flux density and low coherency. The SLD was developed as a device that compensates for the disadvantages of laser diodes such as their coherent noise and is therefore ideal for applications where a higher S/N ratio is essential, for example in light-applied measurements and optical communications. A photodiode chip has also been mounted within the same package for monitoring the SLD output.

#### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub>=25°C)

Parameter	Symbol	Value	Unit
Forward Current	I <sub>F</sub>	170	mA
Radiant flux (Light output)	φ <sub>e</sub>	5	mW
SLD Reverse Voltage	V <sub>R1</sub>	1.5	V
PD Reverse Voltage	V <sub>R2</sub>	20	V
Operating Temperature	T <sub>opr</sub>	-10 to +70	°C
Storage Temperature	T <sub>stg</sub>	-20 to +80	°C

#### ■ ELECTRICAL AND OPTICAL CHARACTERISTICS (T<sub>c</sub>=25°C, φ<sub>e</sub>=3mW)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Emission Wavelength	λ <sub>p</sub>	810	830	850	nm
Spectral Radiation Half Bandwidth	Δλ	10	15	25	nm
Forward Voltage	V <sub>F</sub>	1.8	2.0	2.2	V
Forward Current	I <sub>F</sub>	-	100	120	mA
Beam Spread Angle : Parallel	θ <sub>//</sub>	15	20	25	degree
: Vertical	θ <sub>⊥</sub>	25	35	45	degree
Monitor PD Current	I <sub>m</sub>	80	160	260	μA
Cut-off Frequency	f <sub>c</sub>	-	90	-	MHz
Coherent Length	L <sub>c</sub>	-	50	-	μm

# SLD (Super Luminescent Diode) L8414-04

Figure 1: Typical Emission Spectrum

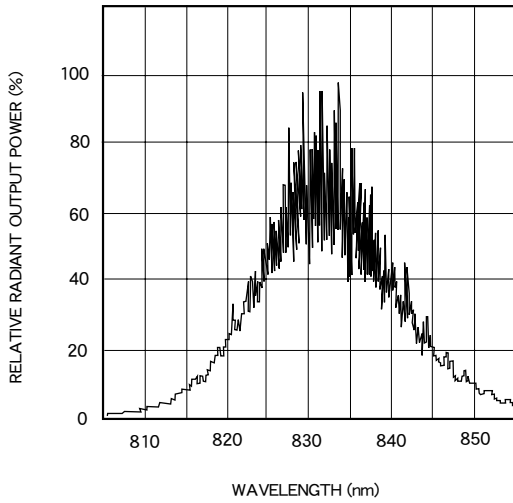


Figure 2: Typical Radiant output Power vs. Forward Current

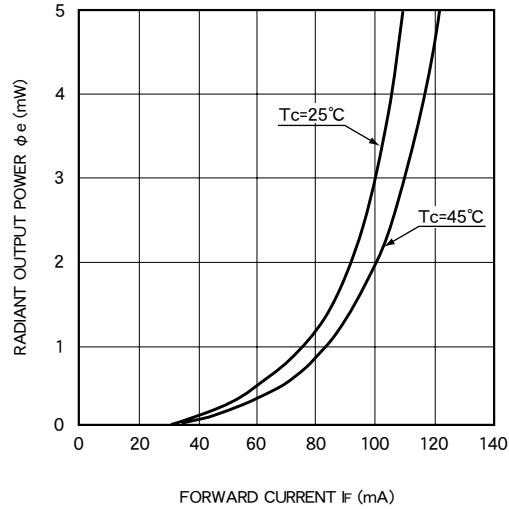


Figure 3: Typical Directivity

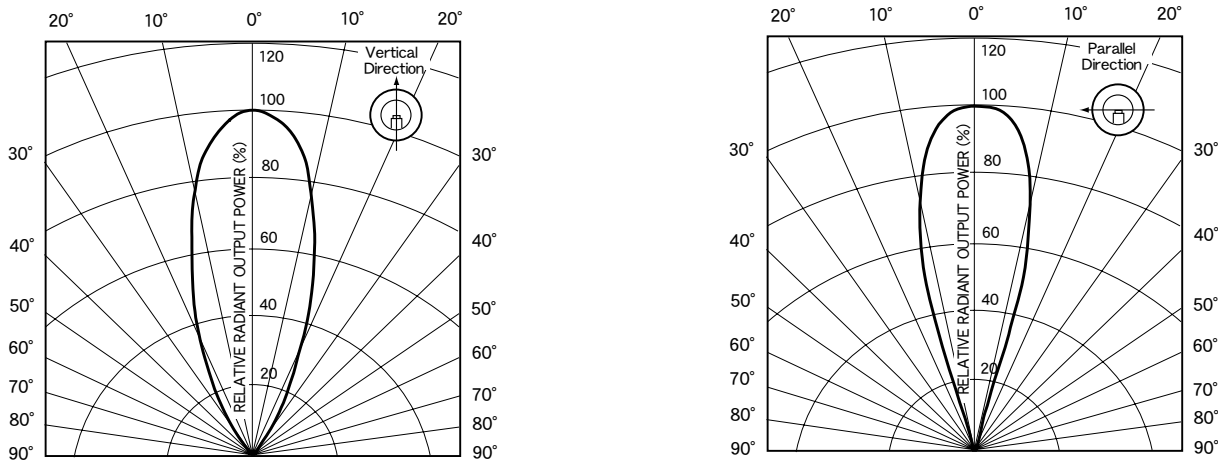
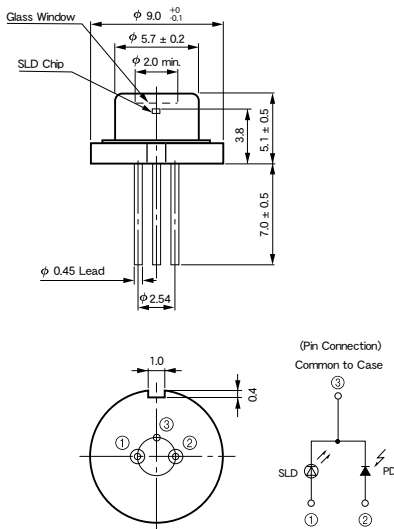


Figure 4: Dimensional Outline (Unit: mm)



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