

Spec. No. : ODT - W010 - 06(2)

Issued Date : 2004.05.31

SPECIFICATION

MODEL NAME : Infrared Emitting Diode

MODEL NO. : OL94KLB

Prepared by : 

Checked by : 

Approved by : 

ODTech

Head office : 814, Youngam-ri, Bongdong-eup, Wanju-gun, Jeonbok-do, Korea

Tel : 82-63-263-7626, Fax : 82-63-262-7624

Jeonju office : Tel : 82-63-214-2112, Fax : 82-63-214-2113

E-mail : kgbb@od-tech.com

Infrared Emitting Diode (GaAs)

OL94KLB

Description

The OL94KLB is high-power GaAs LED chip mounted in a durable, hermetically sealed To-18 metal can Package. With a peak wavelength of 940nm, this LED is narrow beam angle.



Features

- Relatively low cost metal-can package
- Narrow beam angle
- High power

Applications

- Optical - switch for factory automation
- Encoders, Optical module

Absolute Maximum Ratings

(Ta= 25°C)

Parameter	Symbol	Ratings	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	100	mA
Pulse Forward Current *1	I _{FP}	1	A
Power Dissipation	P _D	170	mW
Operating Temperature	T _{OPR}	- 25 ~ 100	°C
Storage Temperature	T _{STG}	- 30 ~ 100	°C

*1 : Pulse width tw=100us, T=10ms

Electro - Optical Characteristics

(Ta=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F =100mA	-	1.3	1.9	V
Reverse Current	I _R	V _R =5V	-	-	10	μA
Capacitance	C _T	f=1MHz	-	25	-	pF
Radiant Intensity	P _o	I _F =100mA	-	3.5	-	mW
Peak Wavelength	λ _p	I _F =20mA	-	940	-	nm
Spectral Bandwidth 50%	Δλ	I _F =20mA	-	45	-	nm
Half Angle	Δθ		-	±8	-	Deg.

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■ Typical electrical / Optical characteristic curves

($T_a = 25^\circ\text{C}$)

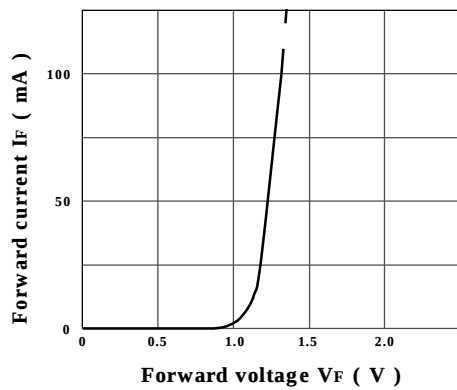


Fig.1 Forward current vs. Forward voltage

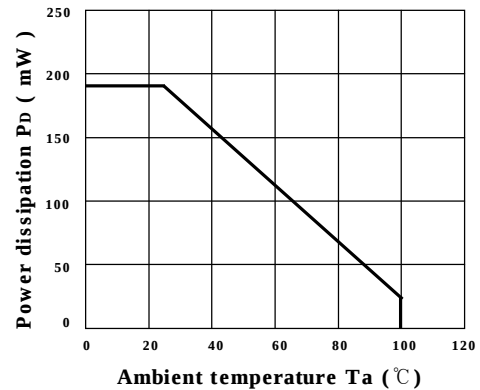


Fig.2 Power dissipation vs. Ambient temperature

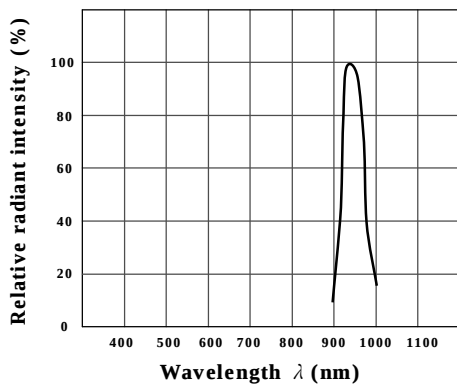


Fig.3 Relative spectra output

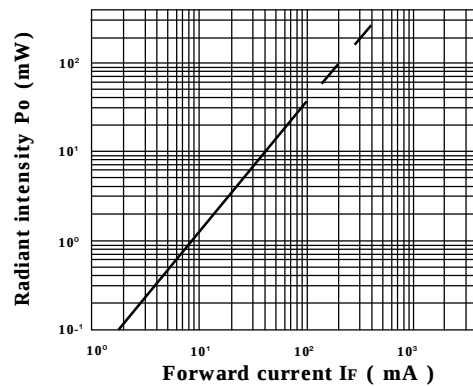


Fig.4 Radiant intensity vs. Forward current

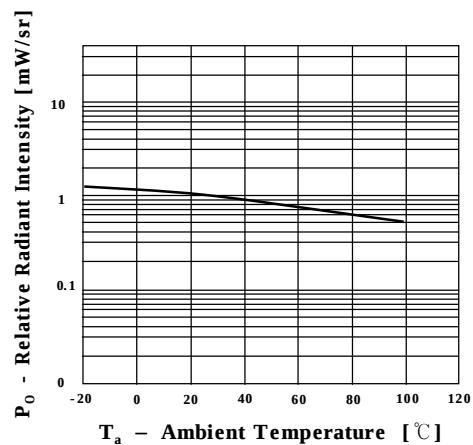


Fig.5 Relative radiant intensity vs. Ambient temperature

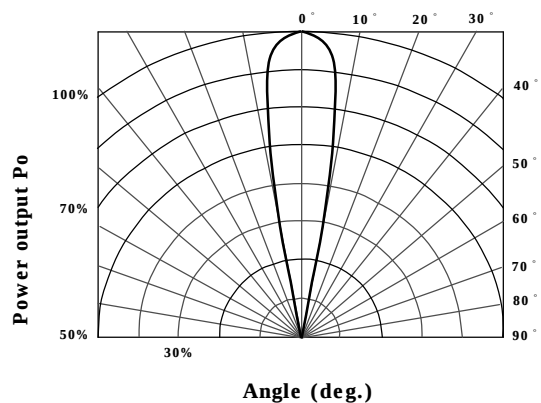
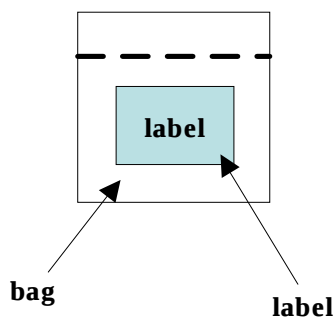


Fig.6 Radiant pattern

■ Packing method

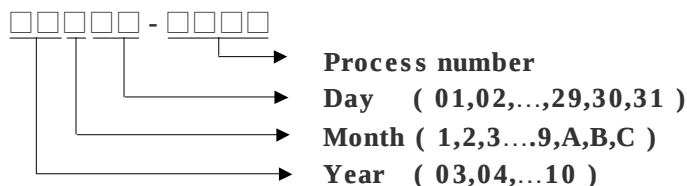
- The optical devices are packed in boxes after packing in bags. Please refer to figure.
The label on the minimum packing unit shows ; Part number, Lot number, Ranking, Quantity
- In order to protect the optical devices from mechanical shock, we pack them in boxes for transportation.
- The optical devices may be damaged if the boxes are dropped or receive a strong impact against them so precautions must be taken to prevent any damage.
- The boxes are not water resistant and therefore must be kept away from water and moisture.



<i>ODTech</i>	DEVICE NAME
DEVICE NO.	
RANK	
Lot NO.	
QUANTITY	
Opto - Device Technology	

■ Lot number

- The first five digits number shows lot number.
- The lot number is composed of the following characters;



■ Cleaning

- When washing is required, isopropyl alcohol should be used.
- The influence of ultrasonic cleaning on the optical devices differs depending on factors such as
oscillator output and how the optical devices are mounted. Before cleaning by ultrasonic wave, testing should be performed to ensure this will not cause damage to the optical devices.

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■ Storage

- The optical devices should be stored at 30 °C or less and 70%R.H or less after being shipped from ODTech and the storage life limits are 3 months. If the optical devices are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- ODTech optical device leads are comprised of a gold plated iron alloy. The gold surface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the LED to corrode, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the optical devices be used as soon as possible.
- Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

■ Lead forming

- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. Do not use the base of the lead as a fulcrum during lead forming.
- Lead forming should be done before soldering .
- Do not apply any bending stress to the base of the lead. The stress to the base may damage the LED's characteristics of it may break the optical devices.
- When mounting the optical devices onto a printed circuit board, the holes on the circuit board should be exactly aligned with the leads of the optical devices. If the optical devices are mounted with stress at the leads, it causes deterioration of the can and this will degrade the optical devices.

■ Soldering condition

- Solder the optical devices no closer than 3 mm from the base of the lead.
- Maximum Allowable Soldering Conditions.

Soldering	Soldering Dipping
Soldering Iron : 30W Max. Temperature : 300 °C Max. Soldering Time : 3 seconds Max. Position : No closer than 3 mm from the base of the lead.	Pre-Heat : 100 °C Max. Per-Heat Time : 60 seconds Max. Solder Bath Temperature : 260 °C Max. Dipping Time : 5seconds Max. Dipping Position : No lower than 3 mm from the base of the lead.

■ Outline Dimensions

(Unit : mm)

